

# On the Effects of Registrar-level Intervention



He (Lonnie) Liu

Kirill Levchenko

Geoffrey M. Voelker

Stefan Savage

*UC San Diego*



Mark Felegyhazi

Christian Kreibich

*UC Berkeley*

*ICSI*

# Spam

★ Free Plane Tickets	Two Free JetBlue Airlines Tickets – Details Inside	
★ me	» liulonnie Rolex.com For You -86% - Dear liulonnie@g	
★ Microsoft® Corporation UK	Congratulation Winner No2 - Dear Winner. Attached t	
★ (un	<div data-bbox="158 539 1767 992" data-label="Complex-Block"><p><b>Buy Cialis Online - \$1.79 per Dose</b></p><p>No Prescription Required. Free Combo Pack with Order. No tablet splitting hassle!</p><p><b>Click here for 10mg Cialis, 20 for \$48, 36 for \$88, 60 for \$106 10-20% Bonus on ReOrders.</b></p></div>	网友发
★ AT		Details
★ Ste		0,000.0
★ CA		line - D
★ Mo		
★ Velva nicone	Replica watches come to the aid of those people wh	
★ Printer Ink Savings	Printer Ink Discounted - Save up to 75%OFF Today!	
★ Mr. Kevin Momoh	(no subject) - My name is Mr. Kevin Momoh, a politica	
★ Medical Assistant	Restart Your Career, Become a CMA Today!	
★ Josie Necole	» No Prescription Required. Free Combo Pack with O	
★ Gamal Mohamed	Dear Friend - Dear Friend, My contactation was throug	

# Spam Infrastructure

- Mail address harvesting
- Botnet mail senders
- Domain names
- Proxies and redirections
- Web hosting
- etc.



# Spam Infrastructure

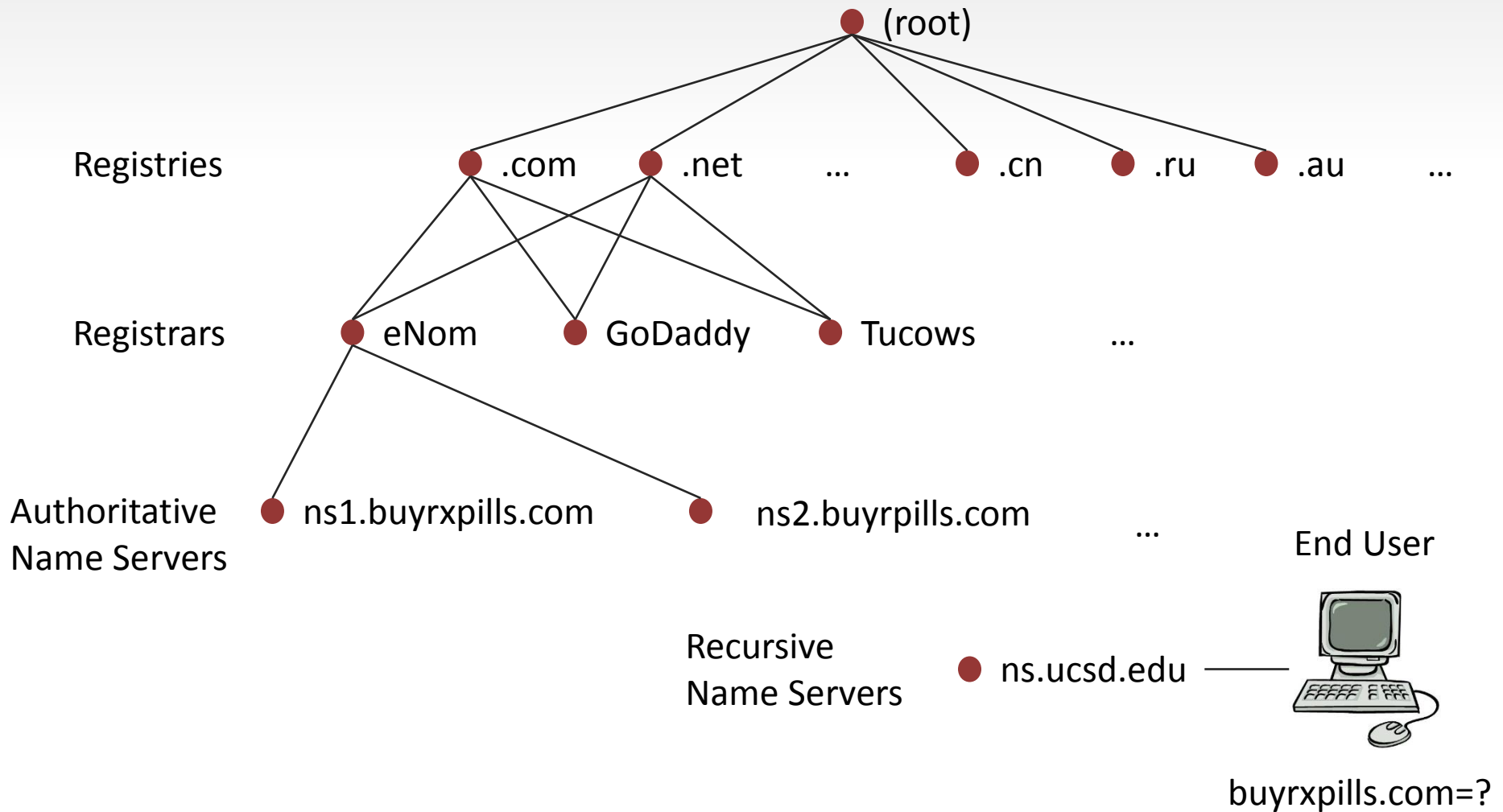
- Mail address harvesting
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- **Domain names**
- Proxies and redirections
- Web hosting
- etc.



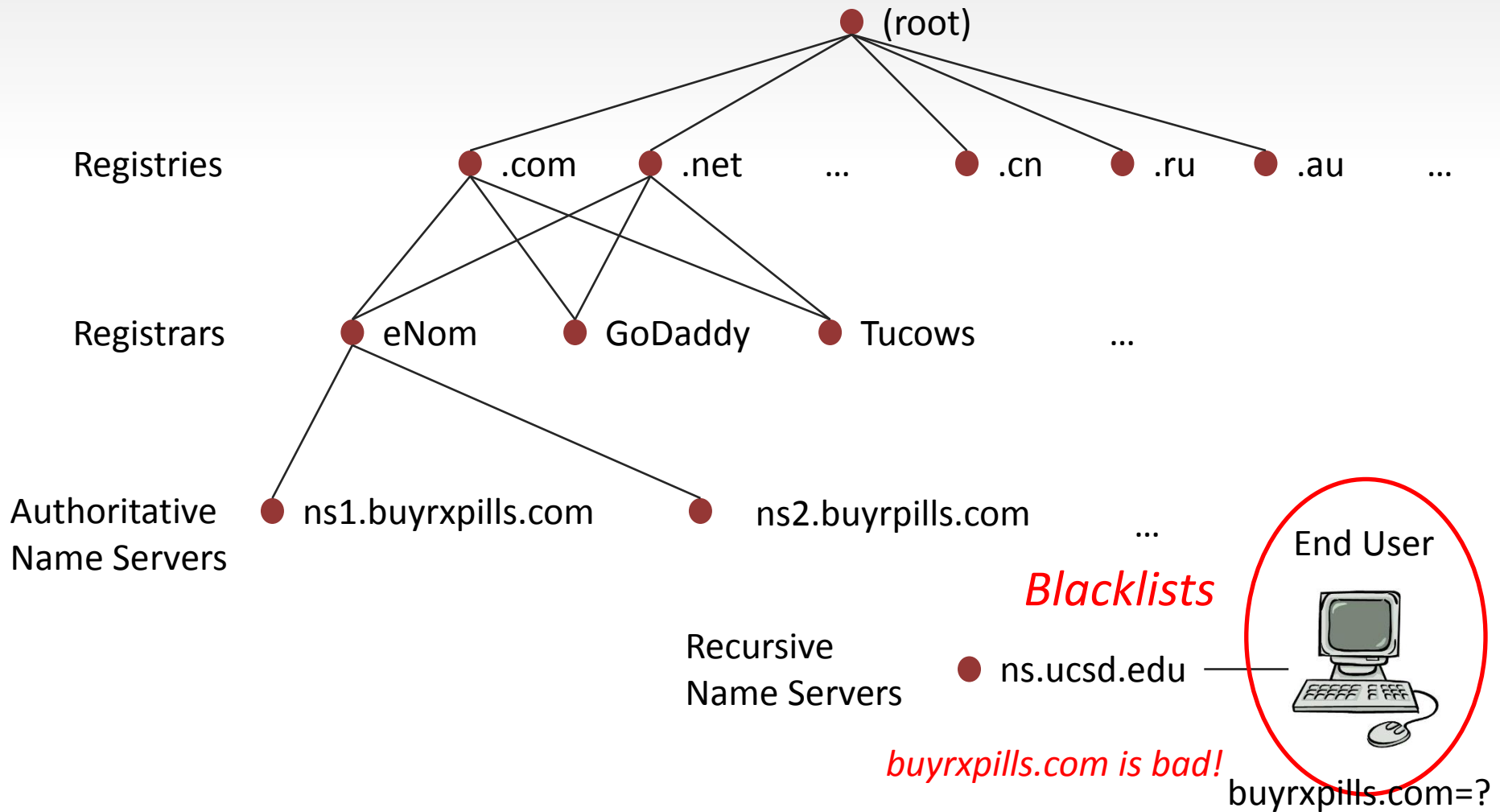
# Spam

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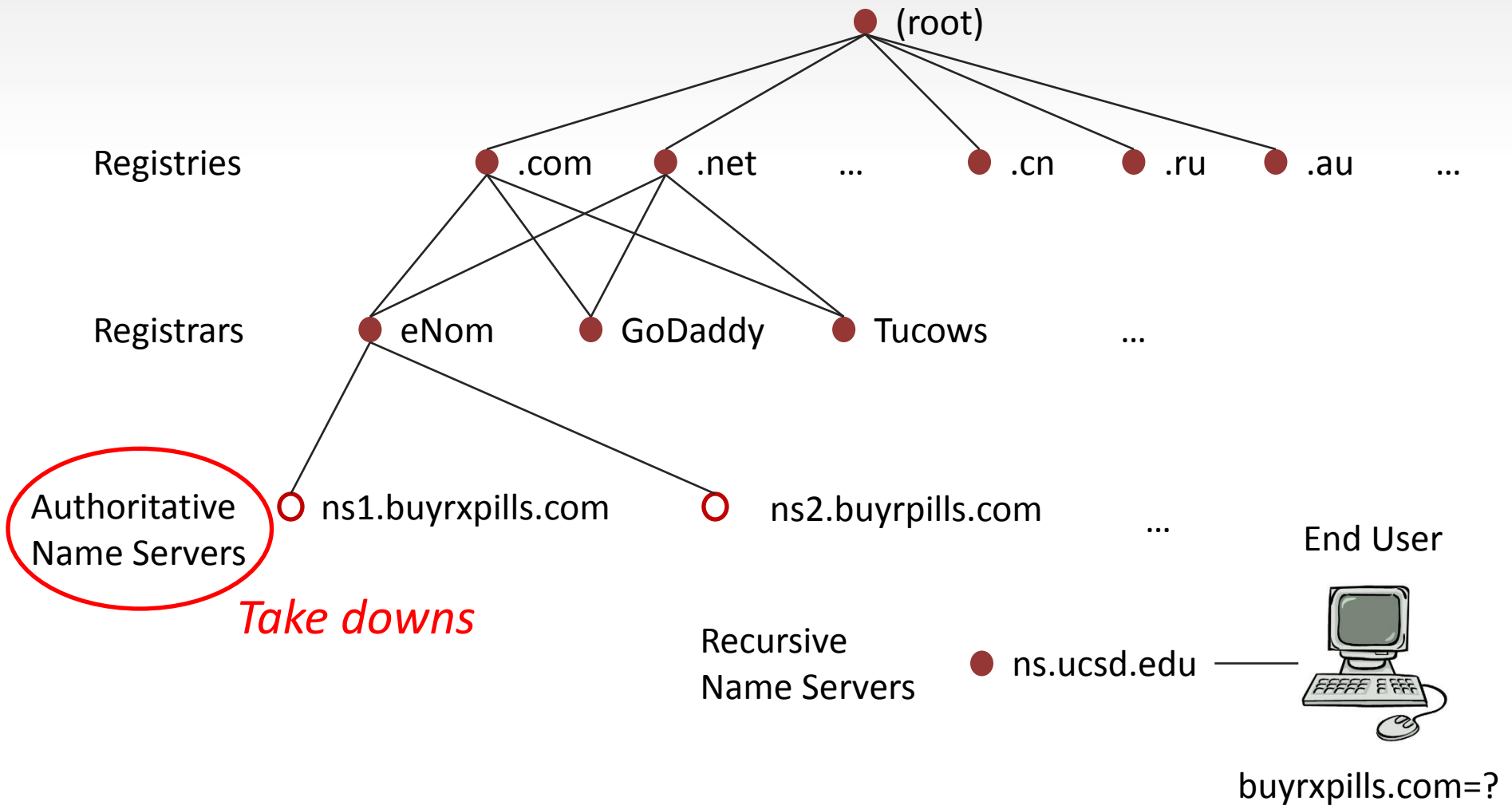
# Domain Name System (DNS)



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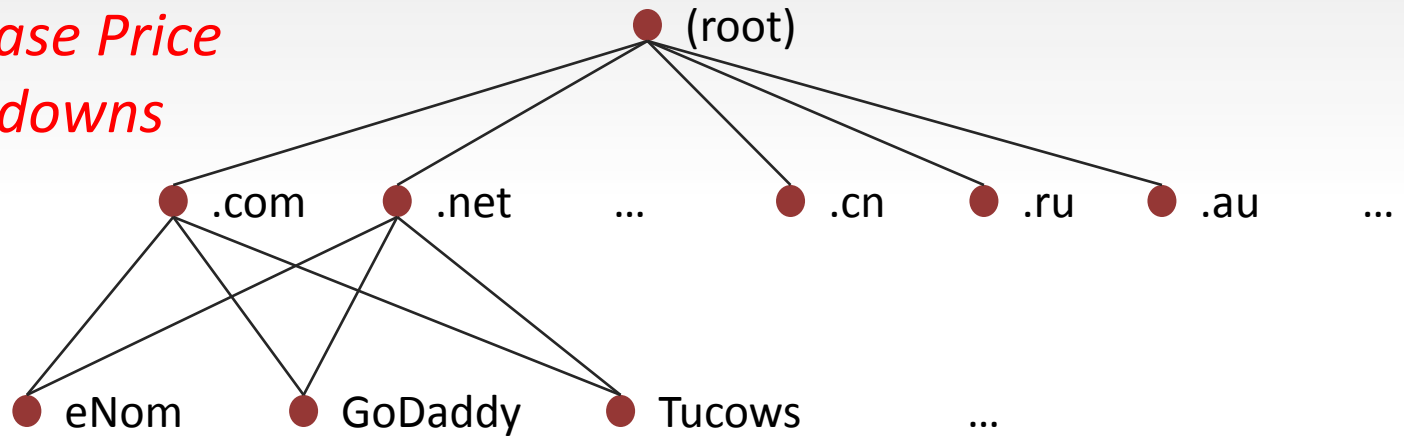
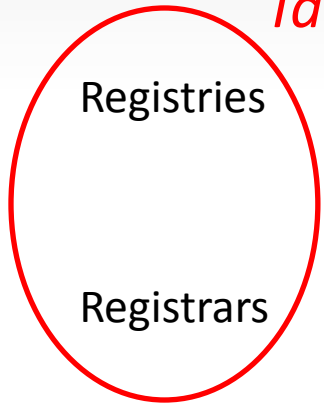
# Domain Name System (DNS)





# Domain Name System (DNS)

*Increase Price*  
*Take downs*



Authoritative  
Name Servers

● ns1.buyrxpills.com      ● ns2.buyrxpills.com      ...

Recursive  
Name Servers

● ns.ucsd.edu

End User



buyrxpills.com=?

# Two Registration Policy Changes

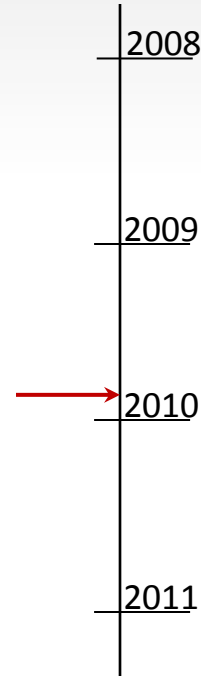


# Two Registration Policy Changes

Dec. 2009



.cn

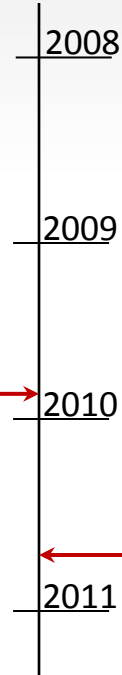


# Two Registration Policy Changes

Dec. 2009



.cn



Sep. 2010



LegitScript.com



# Our Approach

- Collect spam domains from spam feeds
- Track DNS name server activities
  - Zone files
- Track registration info
  - WHOIS, DomainTools.com (historic WHOIS service)
- Tagged pharmacy domains
  - Click Trajectory (Oakland '11)

# December, 2009



# .cn

# Cost of a .cn Domain

2007-2008



(15 cents)



中国互联网络信息中心  
China Internet Network Information Center

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[Home](#) | [Domain Name](#) | [Internet Keyword](#) | [Wireless Keyword](#) | [IP & AS](#) | [Internet Statistics](#) | [Policies](#) [中文版](#)

Position : [Home](#) > [Latest News](#) > [Text](#)

## The Notification about further enhancement of auditing domain name registration information

In order to further enhance the authenticity, accuracy, and integrality of the domain name registration information, now notify as following:

1. Domain name applicants need to submit the formal paper based application material when making the online application to the registrar. The application material includes the original application form with business seal, company business license (photocopy), and registrant ID (photocopy).
2. Registrar should carefully review the application material. When application is deemed qualified, registrar need to submit the application material via fax or E-mail to CNNIC, and withhold the original application material.
3. From the day of the submission of online application, if CNNIC does not receive the formal paper based application material within 5 days or the application material auditing is not qualified, the domain name to be applied will be deleted.
4. The above regulations will be executed since 9:00AM (Beijing Time), Dec 14th, 2009.

If you have any question, free to contact us at 86-10-58813000 or email to [service@cnnic.cn](mailto:service@cnnic.cn).

CNNIC  
Dec 11th, 2009

[ 2009/12/12 ]

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# Domain



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If you have any question, free to contact us by phone or email to service@cnnic.cn.

CNNIC  
Dec 11th, 2009

[ 2009/12/12 ]

**business license  
(photocopy)**

# Domain



# Domain



Home | Domain Name | Internet Keyword | Wireless Keyword | IP & AS | Internet Statistics | 中文版

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- If you have any question, free to contact us by phone or email to service@cnnic.cn.

CNNIC  
Dec 11th, 2009  
[ 2009/12/12 ]

**business license (photocopy)**

**registrant id (photocopy)**



Position: Home > Latest News > Text

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CNNIC  
Dec 11th, 2009

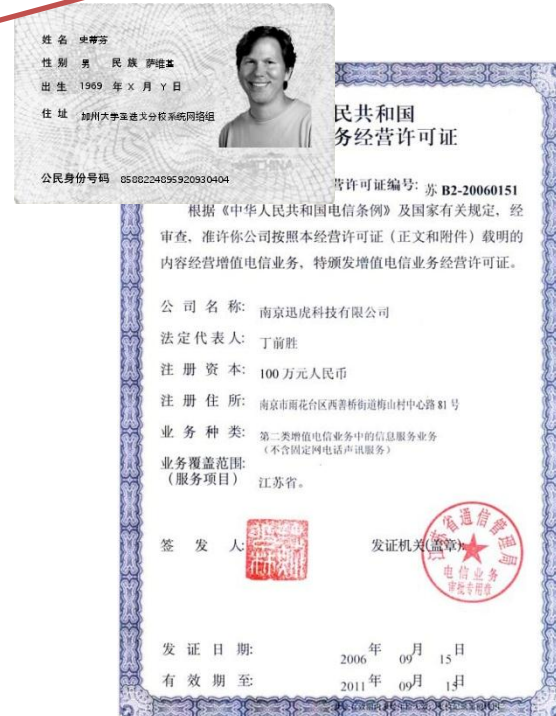
[ 2009/12/12 ]

# Domain

registrant id  
(photocopy)

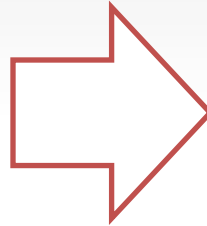
Dec 14, 2009

business license  
(photocopy)



# Cost of a .cn Domain

2007-2008



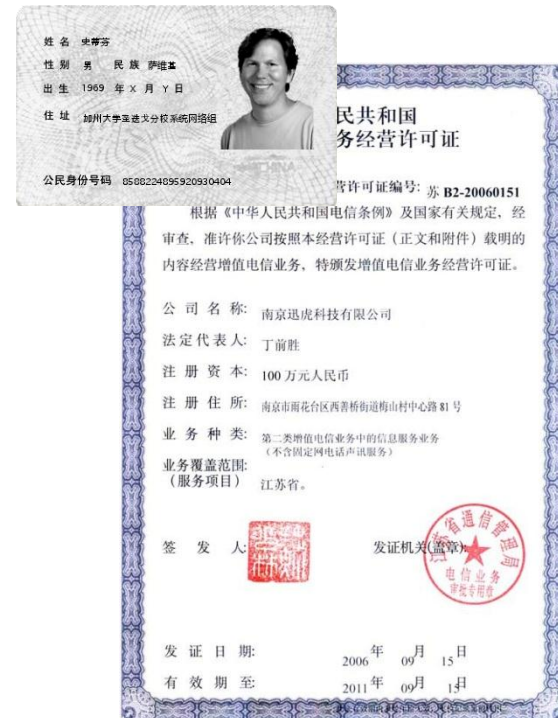
Dec 14, 2009



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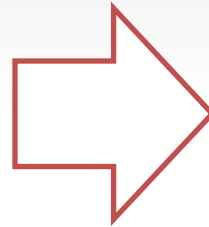


(15 cents)



# Cost of a .cn Domain

2007-2008



Dec 14, 2009



(15 cents)

姓名 史博芬  
性别 男 民族 汉族  
出生 1969年X月Y日  
住址 加州大学圣迭戈分校系统网络组

中华人民共和国  
电信业务经营许可证

许可证编号: 苏B2-20060151  
《中华人民共和国电信条例》及国家有关规定, 经营  
经营许可证(正文和附件)载明的  
颁发增值电信业务经营许可证。

技术有限公司  
无锡市  
西善桥街道梅山村中路81号

业务种类: 第二类增值电信业务中的信息服务业务  
(6)

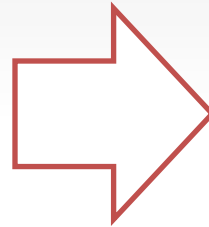
发证机关(盖章)  
电信业务  
许可证

有效期至 2011年09月1日

(10 dollars)

# Cost of a .cn Domain

2007-2008



Dec 14, 2009



(15 cents)

姓名 史博芬  
性别 男 民族 汉族  
出生 1969 年 X 月 Y 日  
住址 加州大学圣迭戈分校系统网络组

中华人民共和国  
电信经营许可证

许可证编号: 苏B2-20060151  
《中华人民共和国电信条例》及国家有关规定, 经营  
经营许可证(正文和附件)载明的  
颁发增值电信业务经营许可证。

有限公司  
人民币  
西善桥街道梅山村中路81号

业务种类: 第二类增值电信业务中的信息服务业务  
(6)

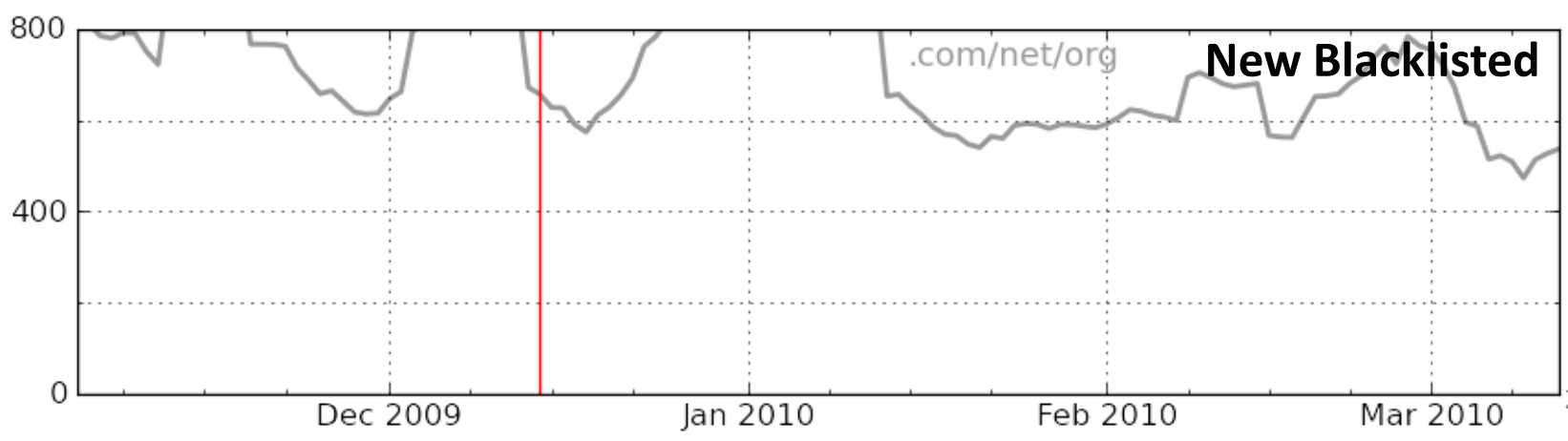
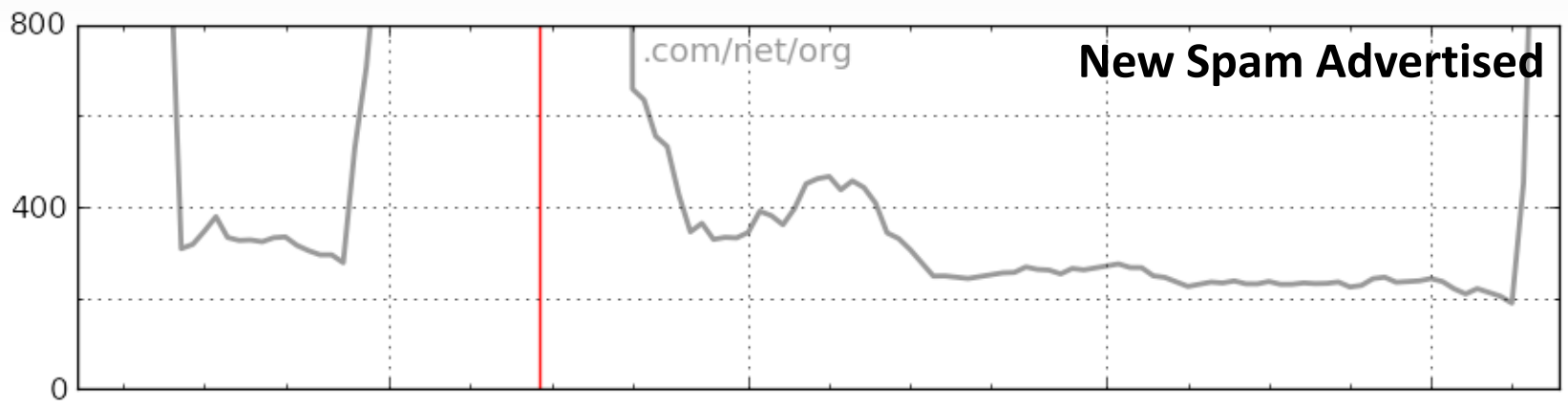
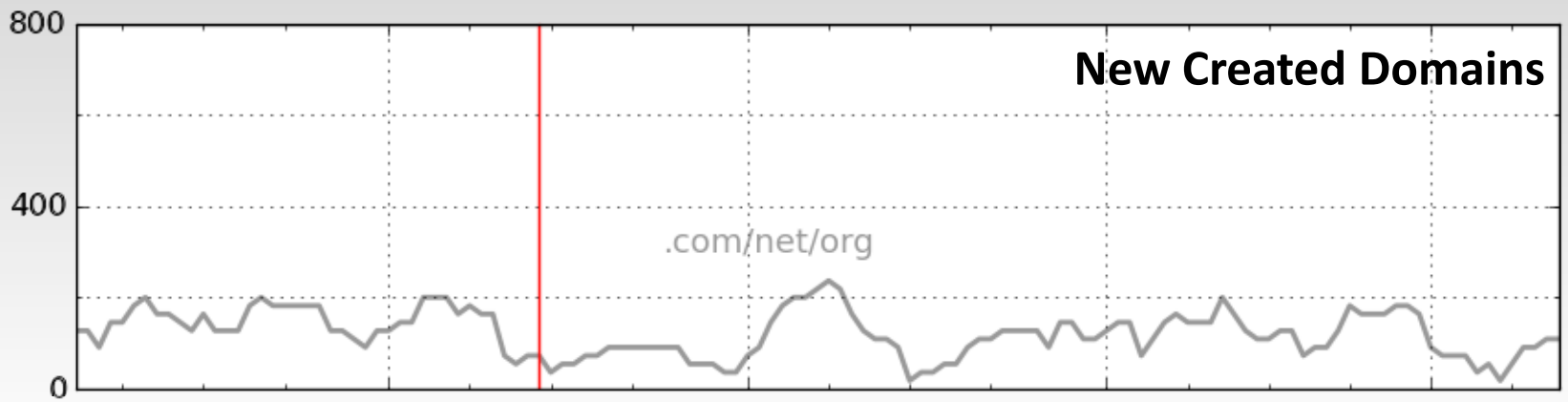
发证机关(盖章)  
电信业务  
经营许可证

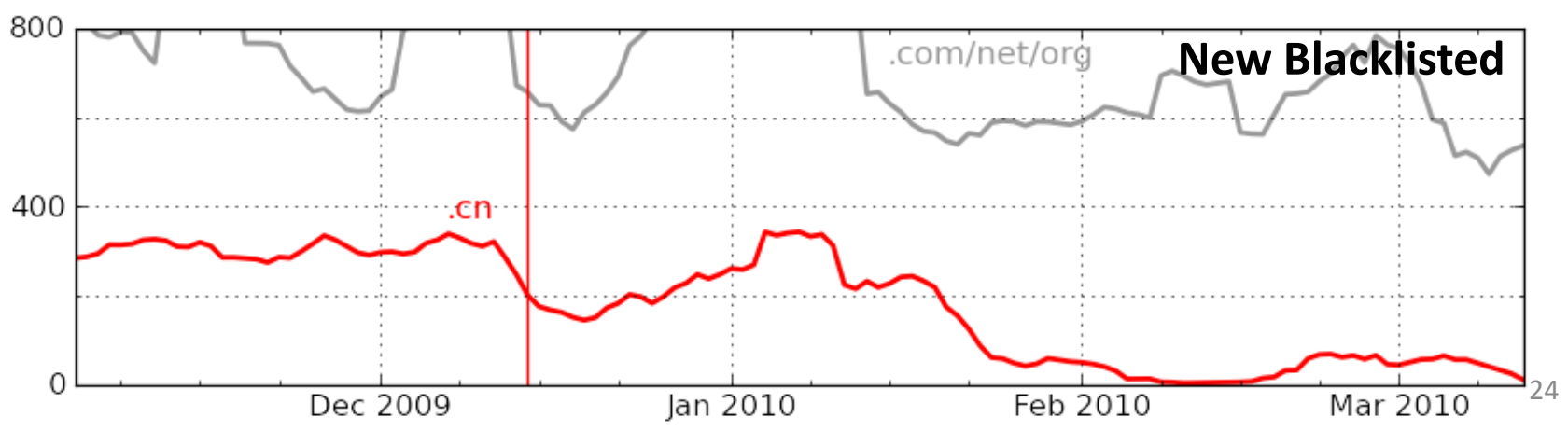
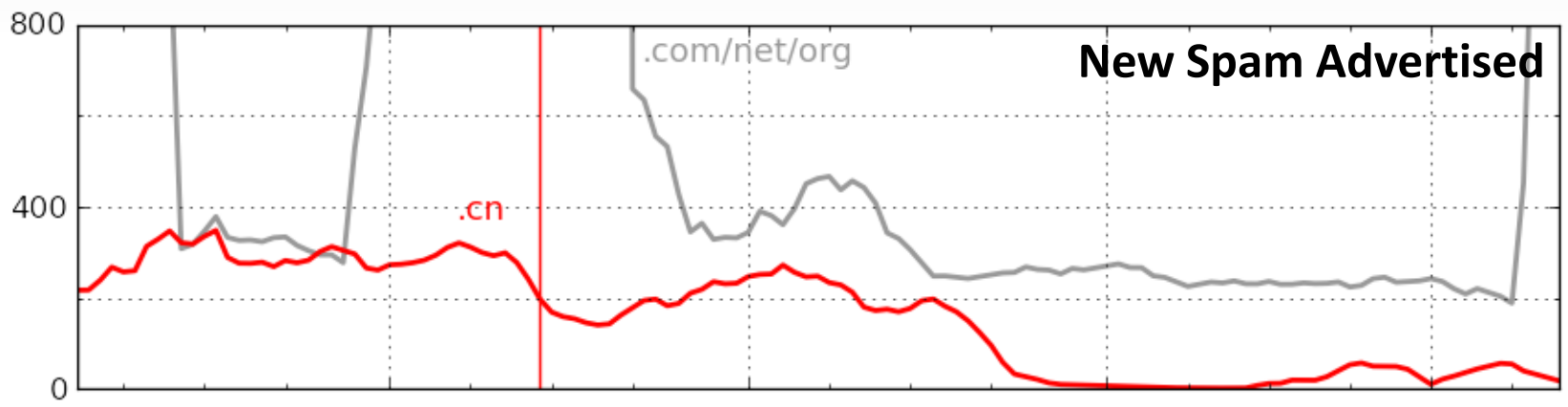
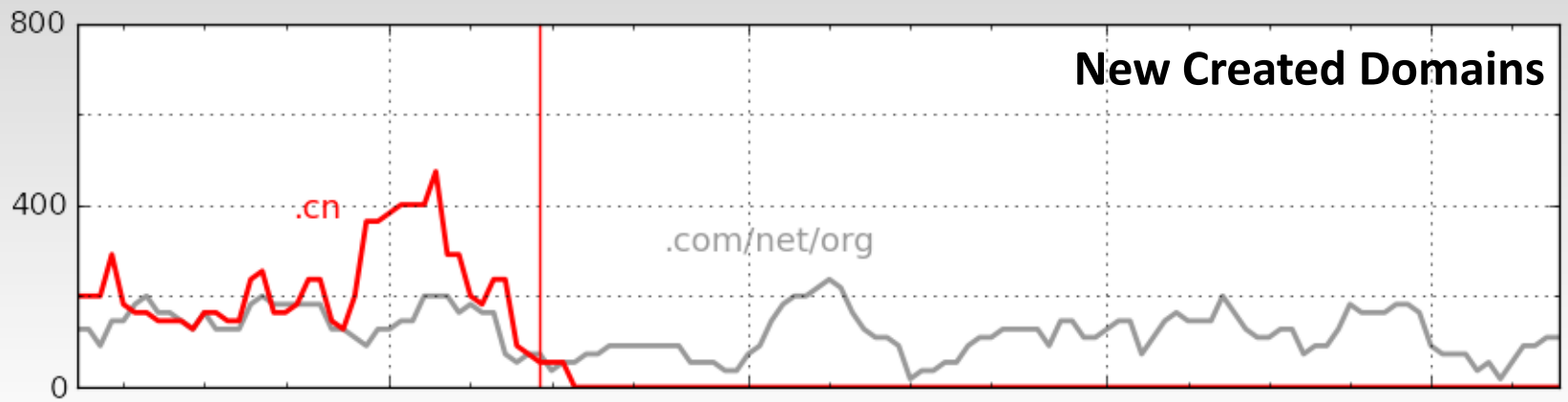
有效期至 2011年 09月 15日

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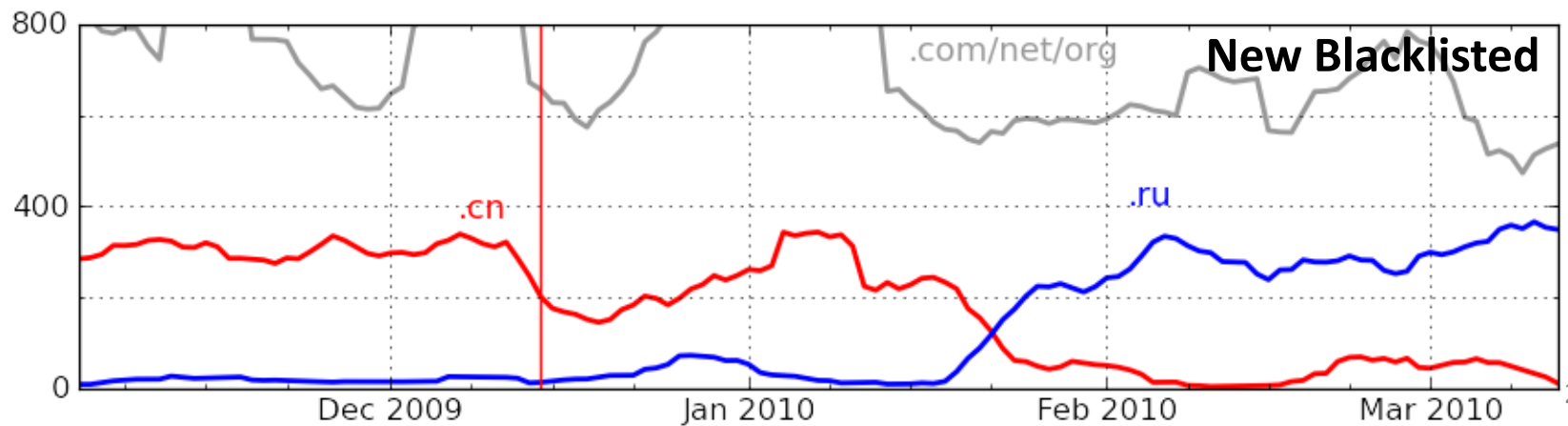
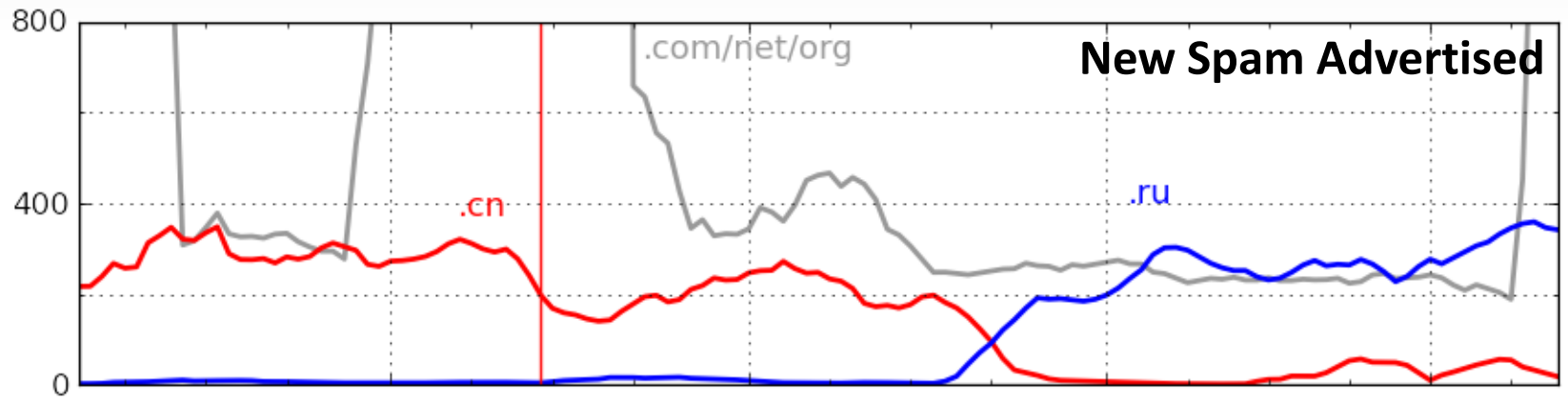
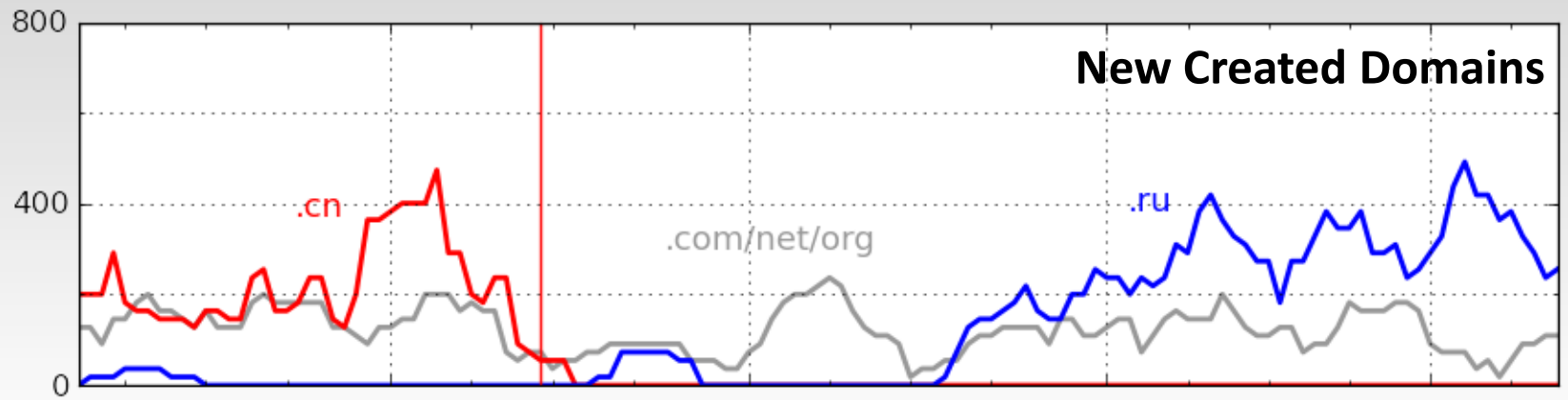
(10 dollars)

+6800%









# CNNIC Policy Change

- Spam domains are sensitive to prices
- Spammers abandoned .cn domains
- And start using .ru domains instead
- Quickly adapted the changes

September 21, 2010



# September 21, 2010



**LegitScript**.com



Internet Pharmacy  
Verification & Enforcement

## eNom and LegitScript LLC Announce Agreement to Identify Customers Operating Illegal Online Pharmacies

SANTA MONICA, Calif.--(BUSINESS WIRE)--eNom, Inc., the world's largest ICANN accredited domain name wholesaler, and LegitScript LLC, an Internet pharmacy verification and monitoring service recognized by the National Association of Boards of Pharmacy, today announced an agreement by which LegitScript will assist eNom in identifying customers who are violating eNom's terms of service by operating online pharmacies in violation of U.S. state or federal law.

"As the largest domain name wholesaler, we take our role and responsibility very seriously. As such, it is our policy to cooperate with law enforcement agencies, and where we have evidence of illegal conduct from law enforcement or another trusted source, we take appropriate action, including terminating domain name registration services," said Taryn Naidu, senior vice president and general manager at eNom. "Our partnership with LegitScript provides us with a trustworthy source of information regarding the illegal sale of pharmaceutical drugs."

Under the agreement, LegitScript provides eNom a list of domain names that knowingly host illegal online pharmacies. LegitScript regularly coordinates with law enforcement authorities to confirm that its lists are accurate. With this information, eNom can better enforce its policy of taking appropriate action against customers engaged in illegal activity in violation of its terms of service, including terminating services.

"LegitScript was created to fill a void in the monitoring and verification of the online pharmacy market, and our service has helped the investigative efforts of government agencies in the US and abroad," said John Horton, president of LegitScript and former associate deputy director at the Office of National Drug Control Policy. "We believe our tools, data and investigative assistance can help eNom address this fast-growing issue of rogue internet pharmacies to better protect consumers."

As part of the agreement, LegitScript serves as a resource to eNom regarding issues concerning drug safety, pharmacy laws and regulations, and complaints with respect to action taken by eNom against customers based on information provided by LegitScript. eNom assists LegitScript with its research concerning illegal online pharmacies by providing expertise in the domain name registrar business.

### About Demand Media

Demand Media, Inc. is a leading online media company that informs, entertains and connects millions of people every day. Through a portfolio of vertical web properties reaching more than 80 million monthly visitors, a global network of digital partners, and an innovative content studio, Demand Media publishes what the world wants to know and share. Founded in 2006, Demand Media is headquartered in Santa Monica, CA with offices in Bellevue, WA, Austin, TX, New York, NY and London, UK. For additional information about Demand Media, visit: [www.demandmedia.com](http://www.demandmedia.com).

"LegitScript was created to fill a void in the monitoring and verification of the online pharmacy market, and our service has helped the investigative efforts of government agencies in the US and abroad"



# eNom and LegitScript LLC Announce Agreement to Identify Customers Operating Illegal Online Pharmacies

SANTA MONICA, Calif.--(BUSINESS WIRE)--eNom, Inc., the world's largest ICANN accredited domain name registrar, and LegitScript LLC, an Internet pharmacy verification and monitoring service recognized by the National Association of Boards of Pharmacy, today announced an agreement by which LegitScript will assist eNom in identifying customers who are in violation of U.S. state or federal law.

"As the largest domain name wholesaler, we take our role and responsibility very seriously. As such, it is our policy to cooperate with law enforcement agencies, and where we have evidence of illegal conduct from law enforcement agencies, and where we have other trusted source, we take appropriate action, including terminating registration services," said Taryn Nom. "Our partnership with LegitScript will help us identify and remove the illegal sale of

**Illegal Online Pharmacy**

**to Identify Customers**

investigative government agencies in the US and abroad"

Under the agreement, LegitScript will provide eNom with information on domain names that knowingly host illegal online pharmacies. LegitScript will assist eNom in identifying customers who are in violation of U.S. state or federal law. With this information, eNom can better enforce its policy of taking appropriate action against customers engaged in illegal activity in violation of its terms of service, including terminating services.

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## About Demand Media

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# eNom and LegitScript

SANTA MONICA, Calif.--(Business Wire)--LegitScript LLC, an Internet Pharmacy, today announced its decision to enforce eNom's terms of service to

"As the largest domain name registrar, eNom has a duty to act. As such, it is our policy to take action in the presence of evidence of illegal conduct. We have taken action against several domain names that appear to be part of a network of illegal online pharmacies. We have notified the National Association of Boards of Pharmacy (NABP) of our actions and are working with NABP to identify and terminate illegal online pharmacies. We will continue to confirm that its lists of illegal online pharmacies are accurate and will be taking appropriate action to terminate services of illegal online pharmacies.

"LegitScript was created to help the industry and helped the investigation of former associate domain name registrars. LegitScript's assistance can help the industry and help the investigation of former associate domain name registrars.

As part of the agreement and regulations, LegitScript. eNom domain name registrar.

## About Demand Media

Demand Media, Inc. is a leading online media company that informs, entertains and connects millions of people every day. Through a portfolio of vertical web properties reaching more than 80 million monthly visitors, a global network of digital partners, and an innovative content studio, Demand Media publishes what the world wants to know and share. Founded in 2006, Demand Media is headquartered in Santa Monica, CA with offices in Bellevue, WA, Austin, TX, New York, NY and London, UK. For additional information about Demand Media, visit: [www.demandmedia.com](http://www.demandmedia.com).

## Identify Customers

Показать сообщение отдельно

Тема: [регистратор под фарму](#)

26.10.2010, 10:46

Elmaros

Юниор

Регистрация: 17.10.2010  
Сообщений: 5  
Бабло: \$1580



Еном установил статус clientHold на домен с фарма фидом. На вопрос какого хрена и как вернуть обратно, сослались на соглашение с LegitScript-ом и написали, что "the domain will remain on hold and may not be transferred" пока не докажешь LegitScript-у, что с ним все в порядке. Сам LegitScript пишет про домен "This site seems to be part of an affiliate pharmacy network". То есть "seems to be" - им просто кажется! Это жесть, конечно. На буржуйских форумах рассказывают, как блочат домен только из-за одного банера на гх4. Ну а по теме цитата с LegitScript-а

Цитата:

LegitScript and KnujOn applaud **GoDaddy, Directi, SpiritDomains, Vishes, AZ.pl, Joker, WebWerks, BIZcn.com, Network Solutions, Advantage-Interactive, and Sibername**, all of whom acted to prevent the use of their domain name registration services in the furtherance of unlawful activity.

то есть этих регистраторов можно обходить стороной. где регать дальше пока не знаю, но смотрю в сторону directnic.com (com по 15 баксов) и domaindiscount24.com (com за 12,45 евро). по-крайней мере на них замечена работающая фарма и легитскрипт к ним вроде не добрался.



eNom and LegitScript

Показать сообщение отдельно

Тема: [регистратор под фарму](#)

26.10.2010, 10:46

**Elmaros**

Юниор

Регистрация: 17.10.2010

Сообщений: 5

Бабло: \$1580

Еном установил статус clientHold на домен с фарма фидом. На вопрос какого хрена и как вернуть обратно, сослался на соглашение с LegitScript-ом и написал, что "the domain will remain on hold and may not be transferred" пока не скажешь LegitScript-у, что с ним все в порядке. Сам LegitScript пишет про домен "This site seems to be part of an affiliate pharmacy network". То есть "seems to be" - им просто кажется! Это жсть конечно. На буржуйских форумах рассказывают, как блочат домен только из-за одного банера на gx4. Ну а по теме цитата с LegitScript

clientHold

Цитата:

LegitScript and K... aud **GoDaddy, Directi, SpiritDomains, iWerks, BIZcn.com, Network Solutions, Advantage, and Sibername**, all of whom acted to prevent the use of the registration services in the furtherance of unlawful

то есть знак... можно обходить стороной. где регать дальше пока не directnic.com (com по 15 баксов) и

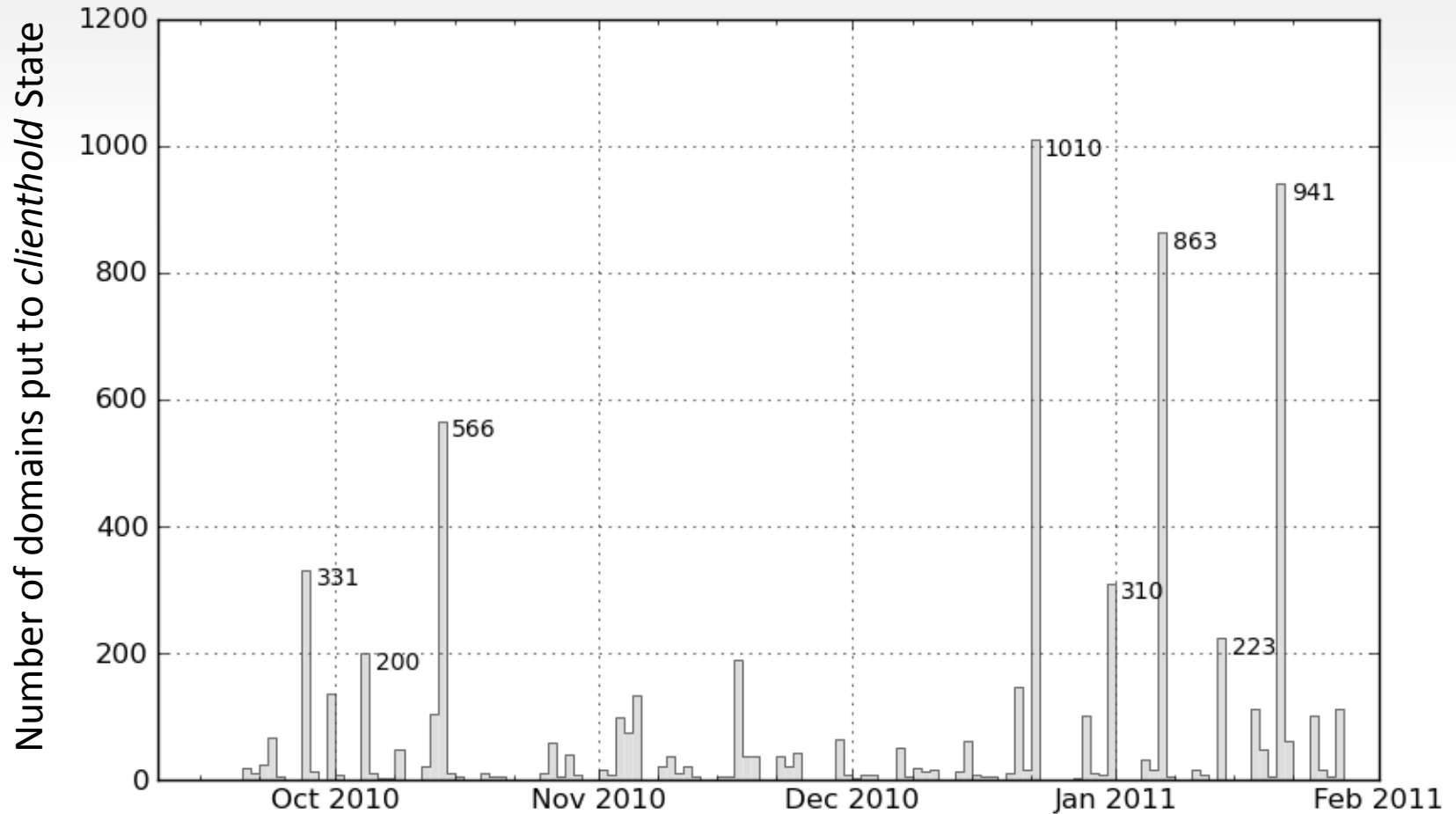
the domain will remain on hold and may not be transferred

About Demand Media

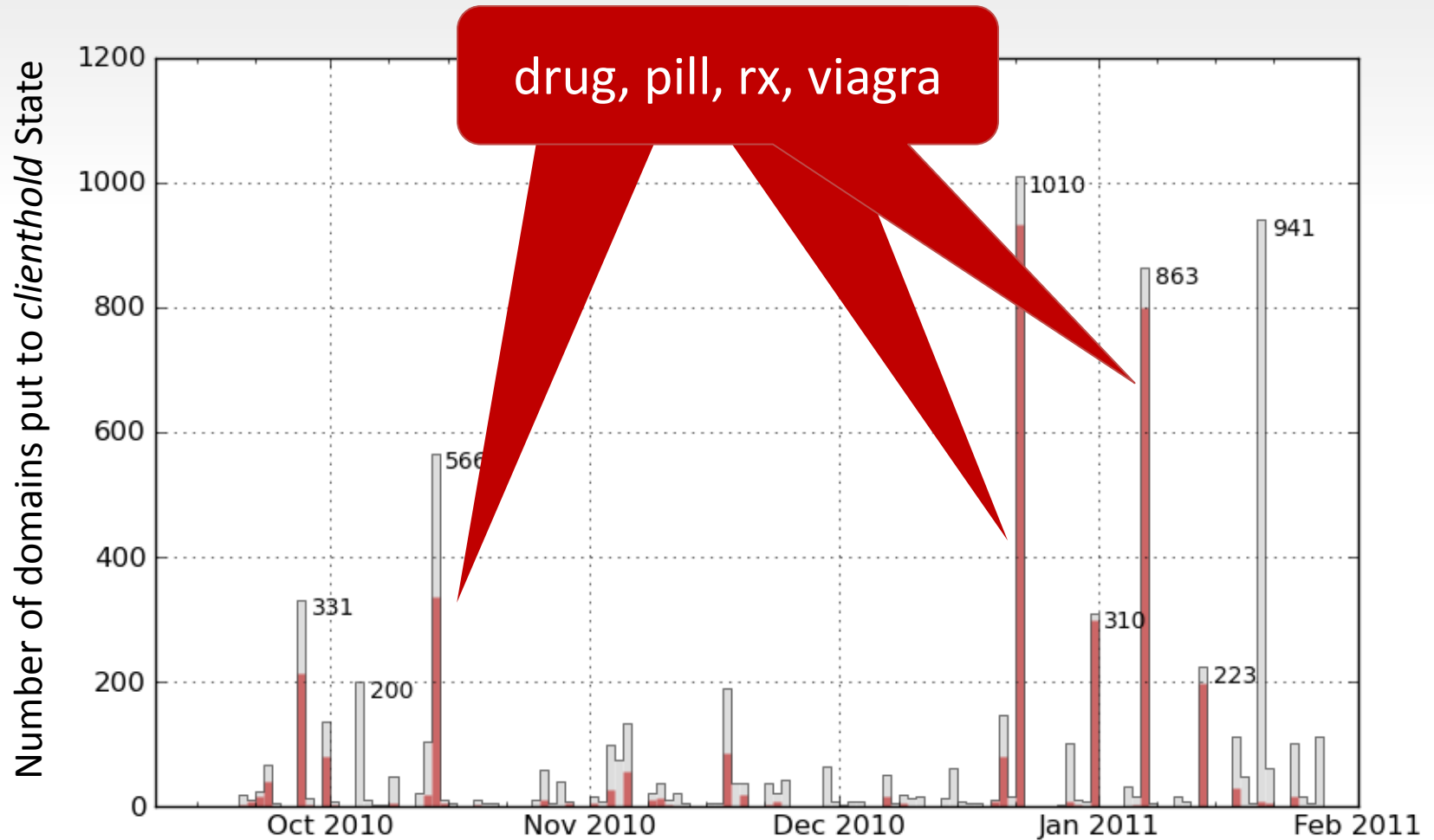
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# *clientHeld* eNom .com Domains



# *clientHeld* eNom .com Domains



# Global Impact



14,268 .com pharmacy domains



From our spam feeds, identified by webpage contents

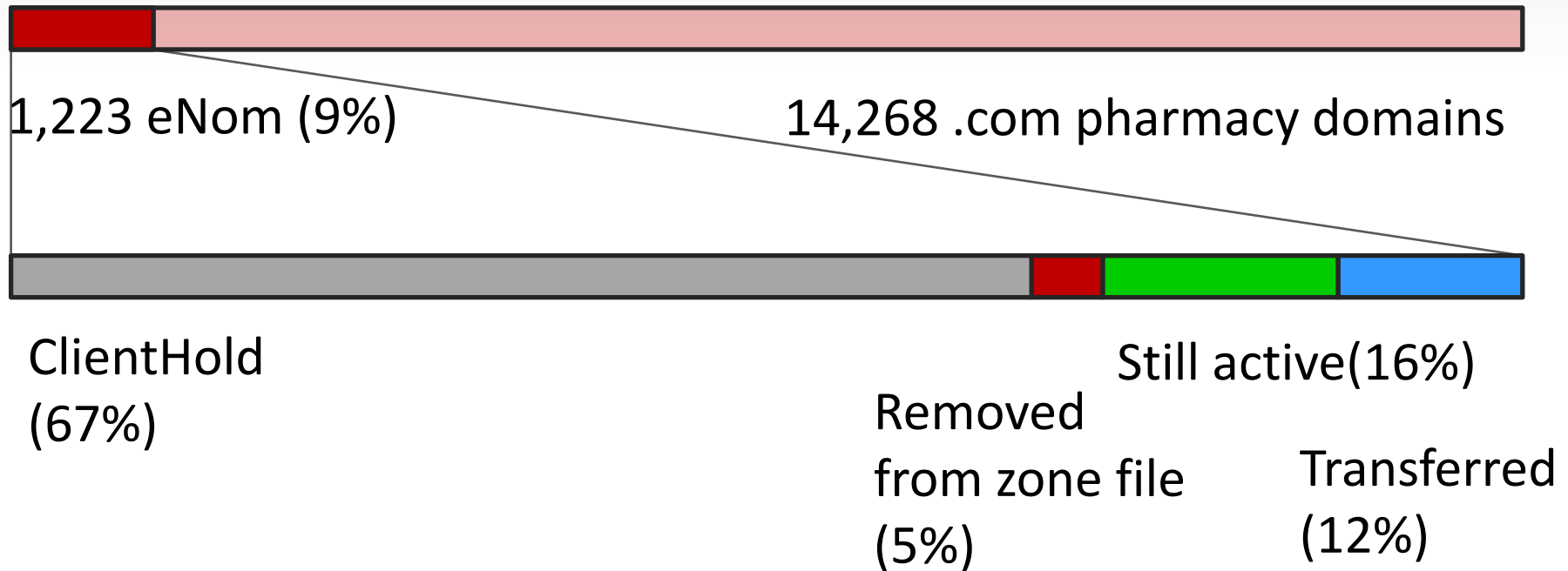
# Global Impact



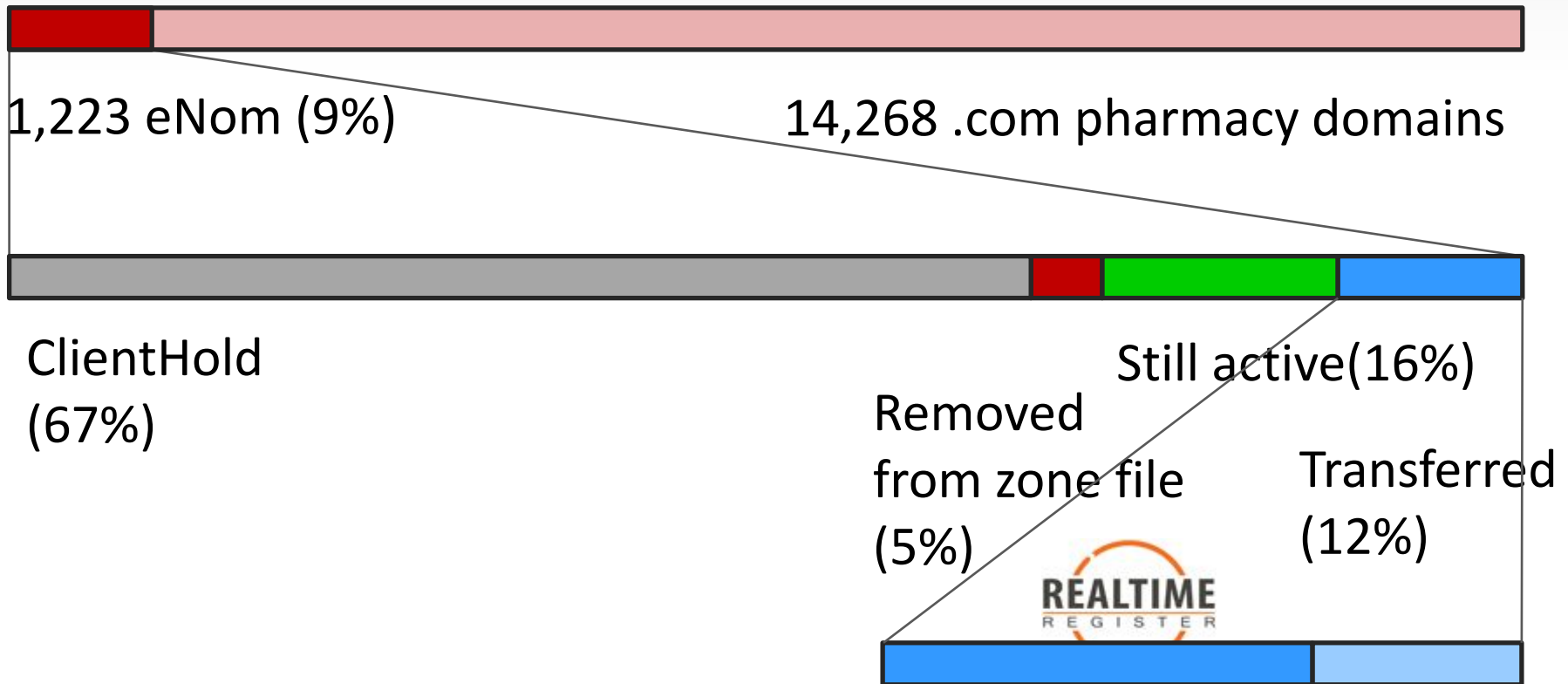
1,223 eNom (9%)

14,268 .com pharmacy domains

# Global Impact



# Global Impact



# LegitScript - eNom Agreement

- Noticeable effects on eNom domains
  - 7000+ domains put to clientHold
  - Scammers transferred to other registrars
- The scale limits the global effects
  - 9% affected

# Discussion: Defend at Registrar Level

- Economic way: increase the price (CNNIC)
  - Significant effect, but alternatives available
  - Affects all .cn users, including legal ones
- Social way: take down domains (LegitScript)
  - Similar to other takedowns, effects depends on scale and speed





# Questions & Comments

Thank you