

# DIALING BACK PHONE VERIFIED ACCOUNT ABUSE

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# Keys to the kingdom

One account is all you need

A single username and password gets you into everything Google.



# Blackmarket for bulk accounts



Facebook Accounts



Yahoo! Accounts



Twitter Accounts



Hotmail Accounts



YouTube Accounts



Gmail.com



Tumblr Accounts



Linked In



Pinterest Accounts



Craiglist Accounts



Tagged Accounts



Mail.com

# Existing protections

CAPTCHAs

Email verification

IP reputation

Phone verification

# Existing protections

CAPTCHAs

OCR: 50% accuracy, \$30/mo

Human solver: >95% accuracy, \$0.70 per 1K

Email verification

Mail.ru: \$5 per 1K accounts

Yahoo: \$8 per 1K accounts

IP reputation

Proxies: 15K - 30K IPs for \$250/mo

Phone verification

?

 Сейчас в продаже

Служба	Кол-во акков	Цена за 1K аккаунтов
Mail.ru	94369	1K-10K: <b>\$5</b>   10K-20K: <b>\$4.5</b>   20K+: <b>\$4</b>
Gmail.com USA PVA	1710	1K-10K: <b>\$100</b>   10K-20K: <b>\$100</b>   20K+: <b>\$100</b>
Yahoo.com USA PVA	2412	<100: <b>\$0.13</b>   100-1000: <b>\$0.13</b>   > 1000: <b>\$0.13</b>
Hotmail.com USA PVA	2045	<100: <b>\$0.12</b>   100-1000: <b>\$0.12</b>   > 1000: <b>\$0.12</b>
Facebook.com USA PVA	1914	<100: <b>\$0.35</b>   100-1000: <b>\$0.33</b>   > 1000: <b>\$0.3</b>
Gmail.com PVA	481	<100: <b>\$0.5</b>   100-1000: <b>\$0.45</b>   > 1000: <b>\$0.4</b>
Gmail.com Manual PVA	677	<100: <b>\$0.6</b>   100-1000: <b>\$0.55</b>   > 1000: <b>\$0.5</b>

Phone verified accounts (PVA) 10-100x more expensive

 Сейчас в продаже

Служба	Кол-во акков	Цена за 1K аккаунтов
Mail.ru	94369	1K-10K: <b>\$5</b>   10K-20K: <b>\$4.5</b>   20K+: <b>\$4</b>
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Yet we see a steady stream of abusive PVA

# Our work

Deep dive into phone verified abuse

Marketplace for accounts

Origin of phone numbers

Registration techniques

Strengthen resource bottleneck for cheap phones



# 1 ACCOUNT BLACKMARKET

# Advertisements for accounts



**BuyAccs.com**  
СЕРВИС РЕГИСТРАЦИИ АККАУНТОВ

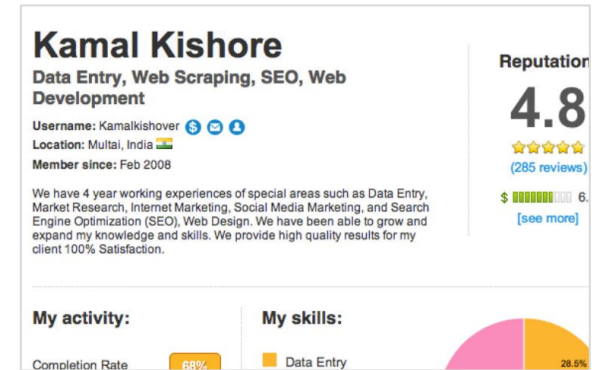
Сейчас в продаже

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Gmail.com USA PVA	1710	1K-10K: \$100   10K-20K: \$100
Yahoo.com USA PVA	2412	<100: \$0.13   100-1000: \$0.13
Hotmail.com USA PVA	2045	<100: \$0.12   100-1000: \$0.12
Facebook.com USA PVA	1914	<100: \$0.35   100-1000: \$0.33

Web storefronts



Forums



**Kamal Kishore**  
Data Entry, Web Scraping, SEO, Web Development

Username: Kamalkishover  
Location: Multai, India  
Member since: Feb 2008

Reputation  
**4.8**  
(285 reviews)

We have 4 year working experiences of special areas such as Data Entry, Market Research, Internet Marketing, Social Media Marketing, and Search Engine Optimization (SEO), Web Design. We have been able to grow and expand my knowledge and skills. We provide high quality results for my client 100% Satisfaction.

My activity: Completion Rate 68%

My skills: Data Entry 28.5%

Freelance Listings

# Blackmarket as an oracle

Identify 14 merchants, track public pricing

Purchase 2,217 Google PVA from 7 merchants

Price: \$85-500

Authenticity: 100% working PVA

Delivery rate: 24-48 hours

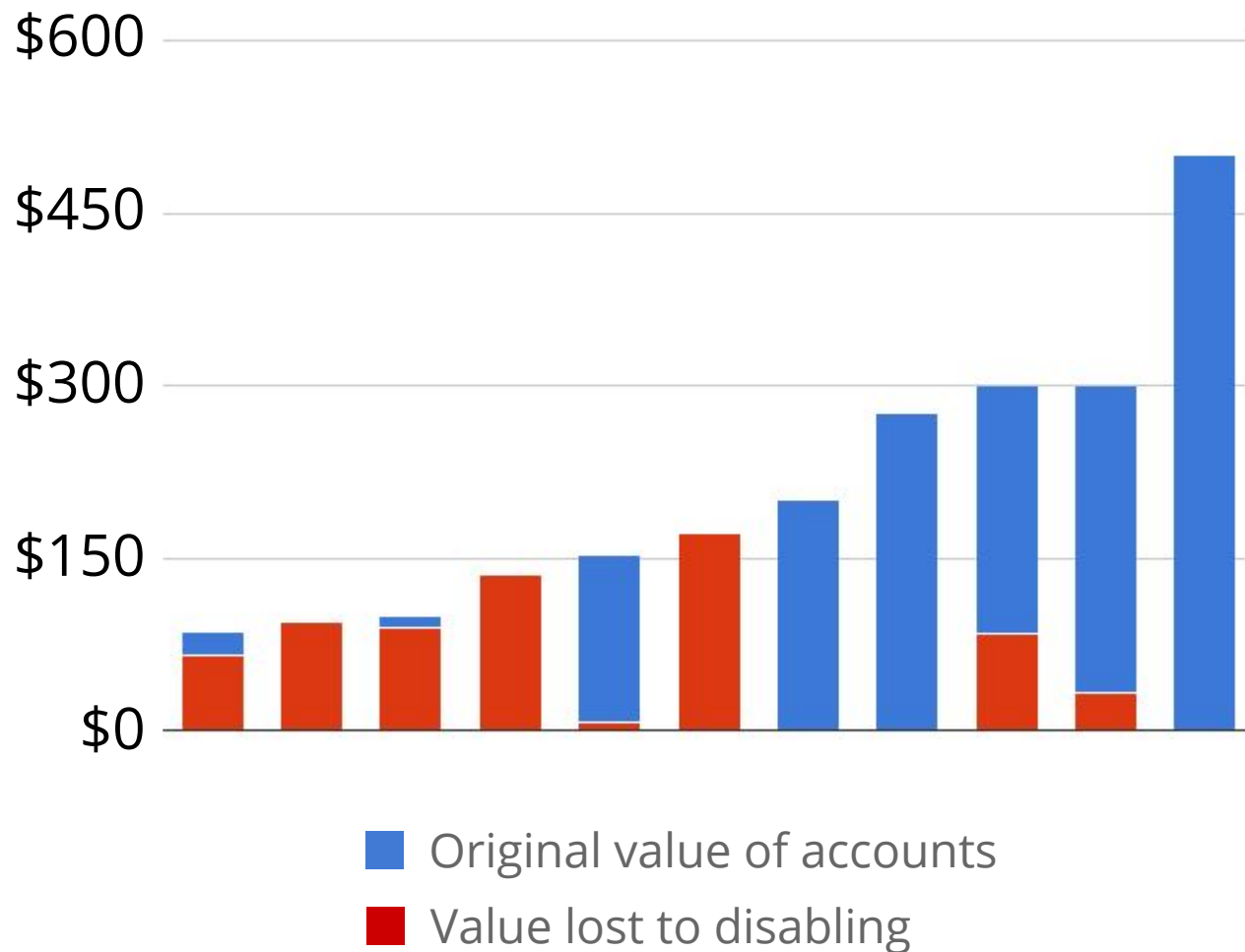
Disabled in 1 month: 68%



# Prices range \$85-500



# Price reflects quality



# Pricing trends over 8 months



Does price reflect failure in defenses?



## 2 PHONE ORIGIN

# Datasets

Google PVA, disabled for abuse: 300,000

Purchases reveal sample is representative

For each account:

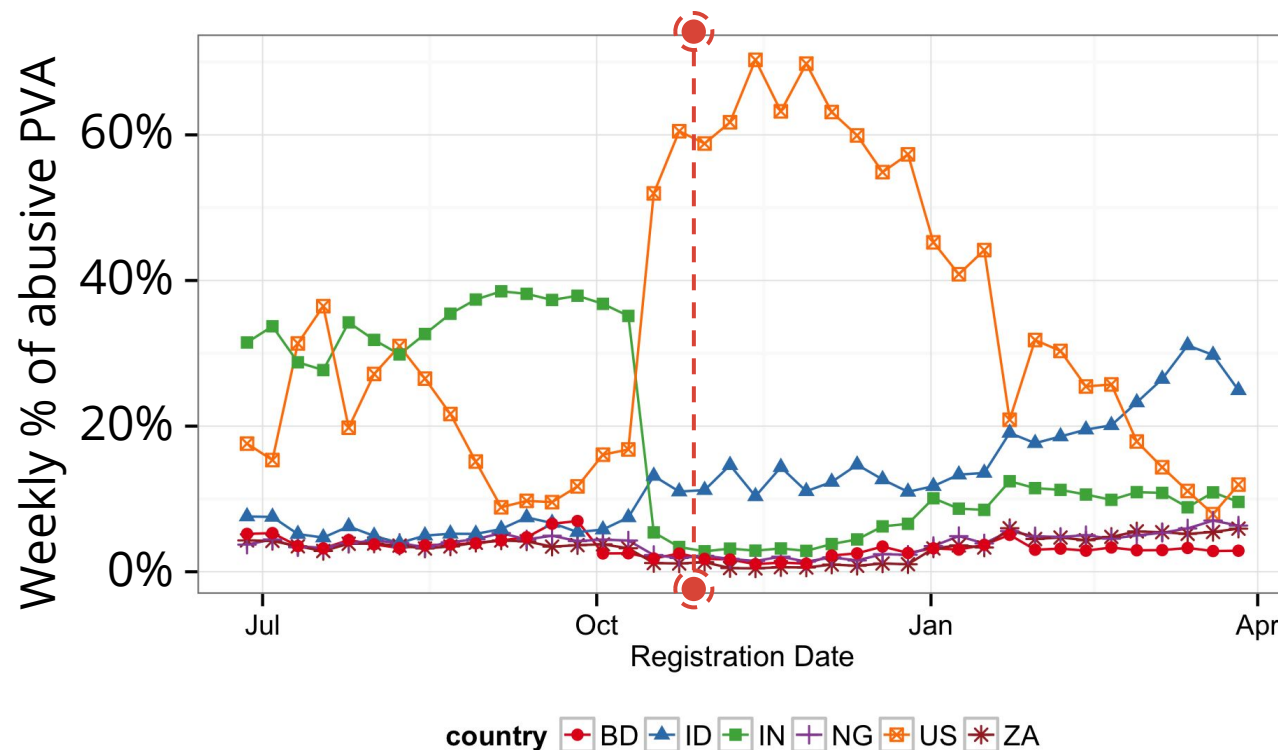
Associated carrier, country information

Geolocation of signup IP

CAPTCHA solution attempts



# Phone country of origin



## Top origins

United States	27%
India	22%
Indonesia	12%
Nigeria	4%
South Africa	4%
Bangladesh	4%

# VOIP largest abuse source

Rank	Carrier	Country	Popularity
1	Bandwidth.com	US	19.9%
2	PT	ID	7.3%
3	Bharti	IN	5.3%
4	Vodafone	IN	4.0%
5	MTN	NG	3.0%
6	Idea	IN	2.8%
7	Telekomunikasi	ID	2.2%
8	Aircel	IN	2.1%
...	...	...	...
18	Level 3	US	0.86%
19	Cell	ZA	0.84%
20	Telengy	US	0.81%

24% of PVA  
verified over VOIP

## Includes:

Google Voice  
Pinger  
TextPlus  
Enflick  
GoTextMe

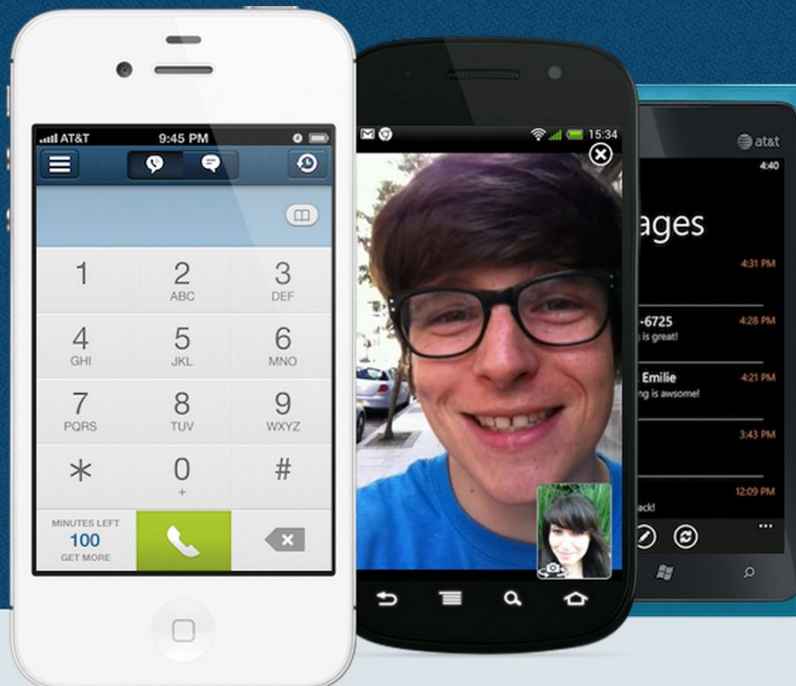
# TextMe

Free Texting and Calling

Download ▾



Watch our video and learn more!



We're  
Hiring



# TextNow

Our free app turns any WiFi enabled device into a phone. We also sell a low cost all-IP phone from TextNow.com for those who want to text and call even without WiFi.

Visit [TextNow.com](http://TextNow.com)



# Phone for price of a CAPTCHA

Let's set you up with a new account!

Username  @textfree.us

Password

Confirm Password

Email  *Not Verified*

☐ I agree to the [Terms of Service](#) and [Privacy Policy](#) or, if a non-U.S. resident, the [Data Protection Policy](#).

Security Code:

overcall

cancel

create

Phone Number 1 (510) 730-2935

Username  @textfree.us

Name

Password [change](#)

Tones  Pinger ▼

Signature  -Sent from Textfree Web

Email Notifications on ☐ off ☒

# Strategy in practice [now defunct]

**Free SMS Service**

New phone per  
CAPTCHA

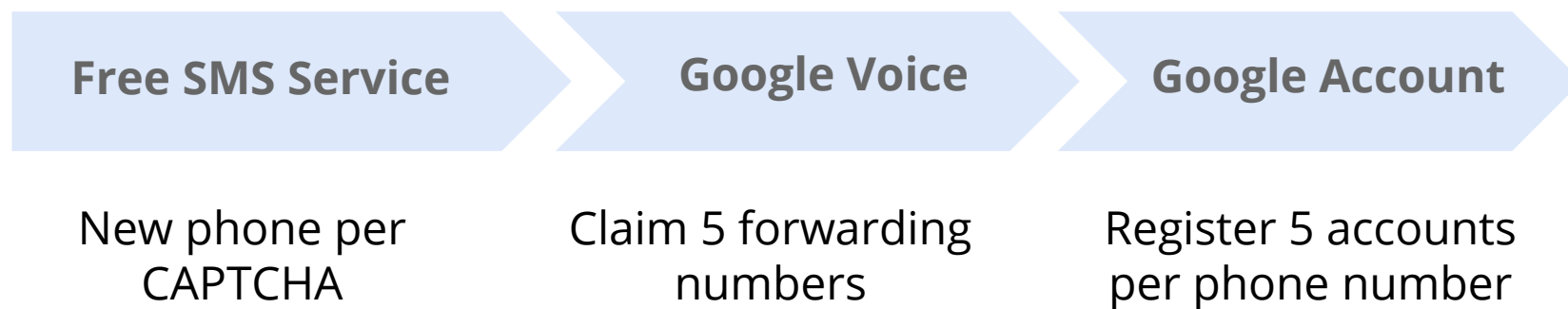
# Strategy in practice [now defunct]



New phone per  
CAPTCHA

Claim 5 forwarding  
numbers

# Strategy in practice [now defunct]

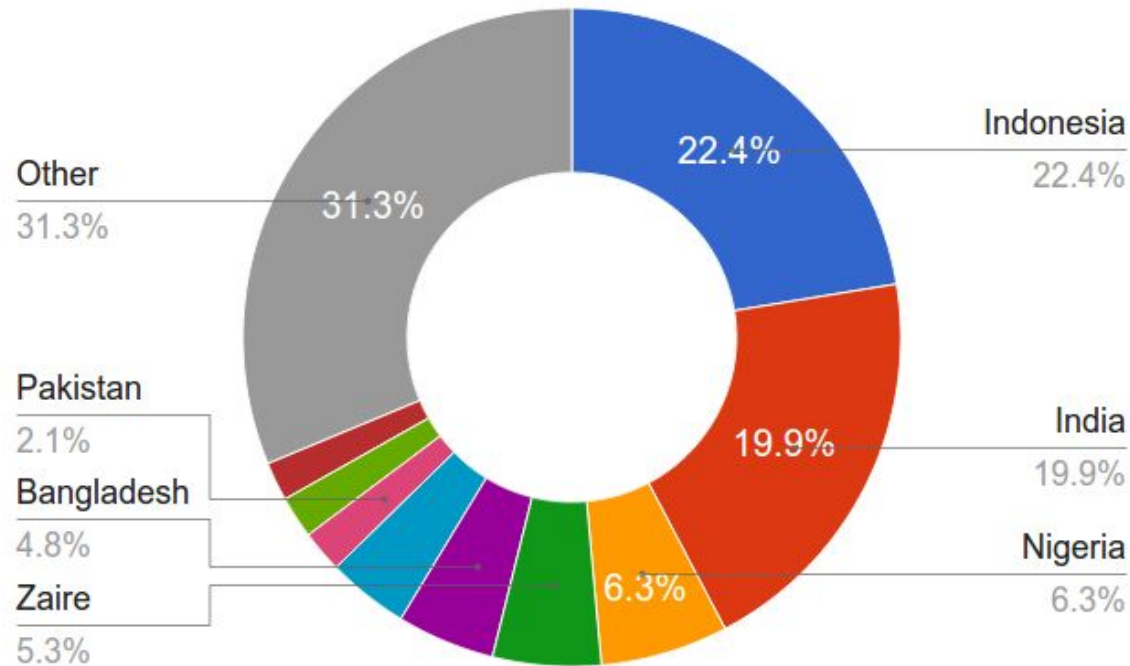


25 accounts per CAPTCHA

60-80% of all disabled PVA between Oct-Jan



# Where do non-VOIP phones originate?



Same locations as human CAPTCHA farms.  
Socio-economic disparity creates an abuse vector.



variantvotes - myo variant

ICQ [REDACTED]

Билайн, МТС, Мегафон

ICQ [REDACTED]

skype [REDACTED]

phone [REDACTED]

\$140-420 per 1K SIMs



Продажа сим-карт

Билайн, МТС, Мегафон

ICQ [REDACTED]

skype [REDACTED]

phone [REDACTED]



**\$140–420 per 1K SIMs**

Новости  
Активации  
Номера  
История  
Настройки  
Правила  
FAQ  
Платежи  
Поддержка

## Реквизиты:

WMID:

EMail:

Phone:

ICQ:

аттестован

WebMoney

## regHound

Надоело активировать в  
ручную? Мы Вам поможем!

## Проведение активаций

[14072.0 рубля]

Заказ

Прием

ВКонтакте

Mamba

Odnoklassniki

4Game

facebook

SEOsprint

PP.UA Domain

WebMoney

QIWI

Google

Other

## Как это работает?

1

## Выберете сервис

Выберете один из сервисов,  
для активации которого Вам  
нужен номер.

2

## Выберете страну

Выберете страну номера  
сами, или предоставте это  
право нашей системе.

3

## Укажите количество

Укажите сколько Вы  
планируте отправить SMS на  
получаемый номер.

4

## Получите номер

Сообщите нам, что Вы  
готовы, и система подберет  
Вам подходящий номер.

## Список активных операций:

В настоящий момент, активных операций нет.

[Получить номер]

Buyers bid on SMS endpoints: ~\$0.20/SMS  
Sellers list phone numbers, respond with code.

# 3 REGISTRATION STRATEGIES

# How do older protections perform?

CAPTCHAs

~~Email verification~~

IP reputation

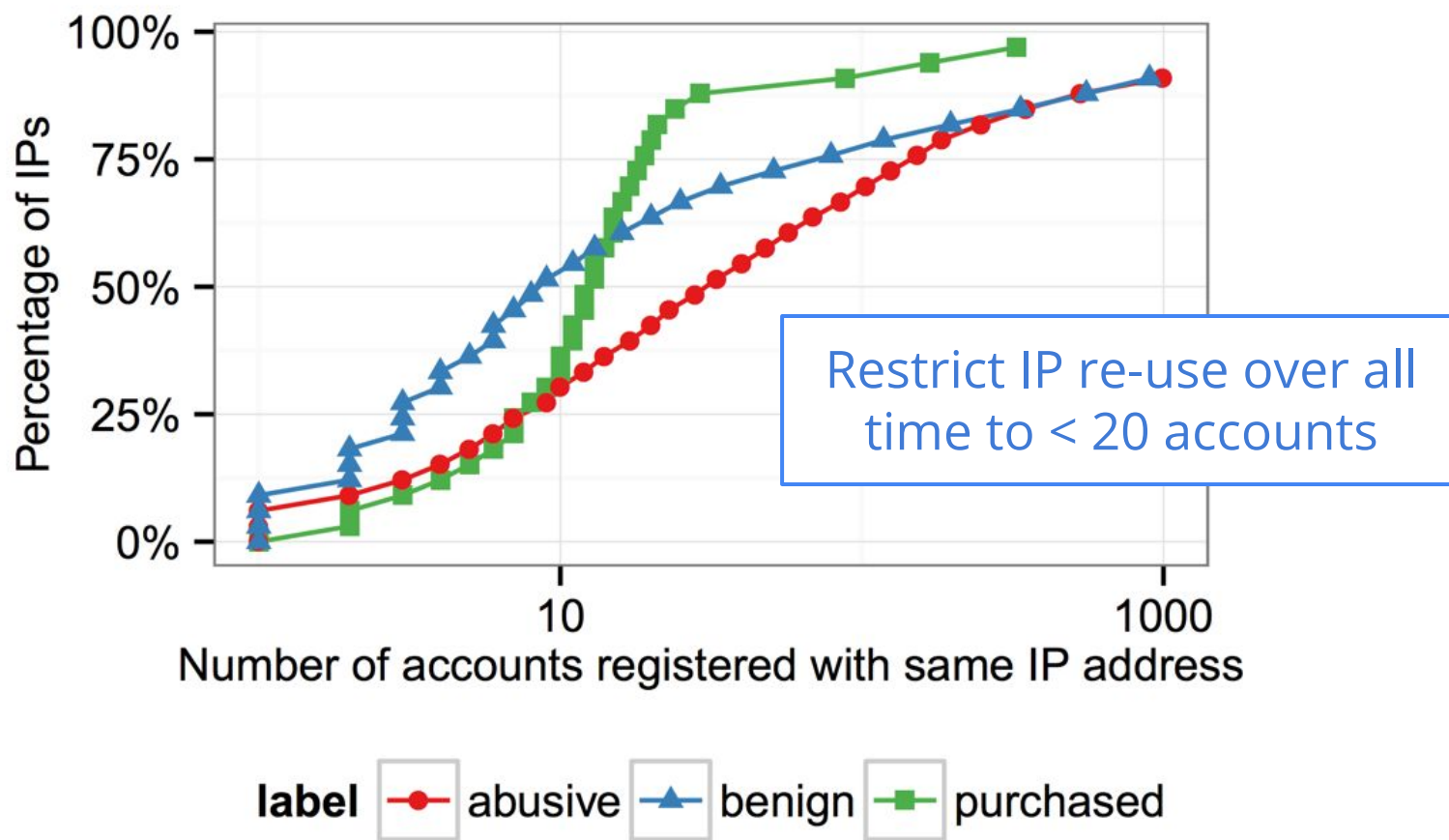
Phone verification

# CAPTCHA breaking

56% of registrations shown a CAPTCHA

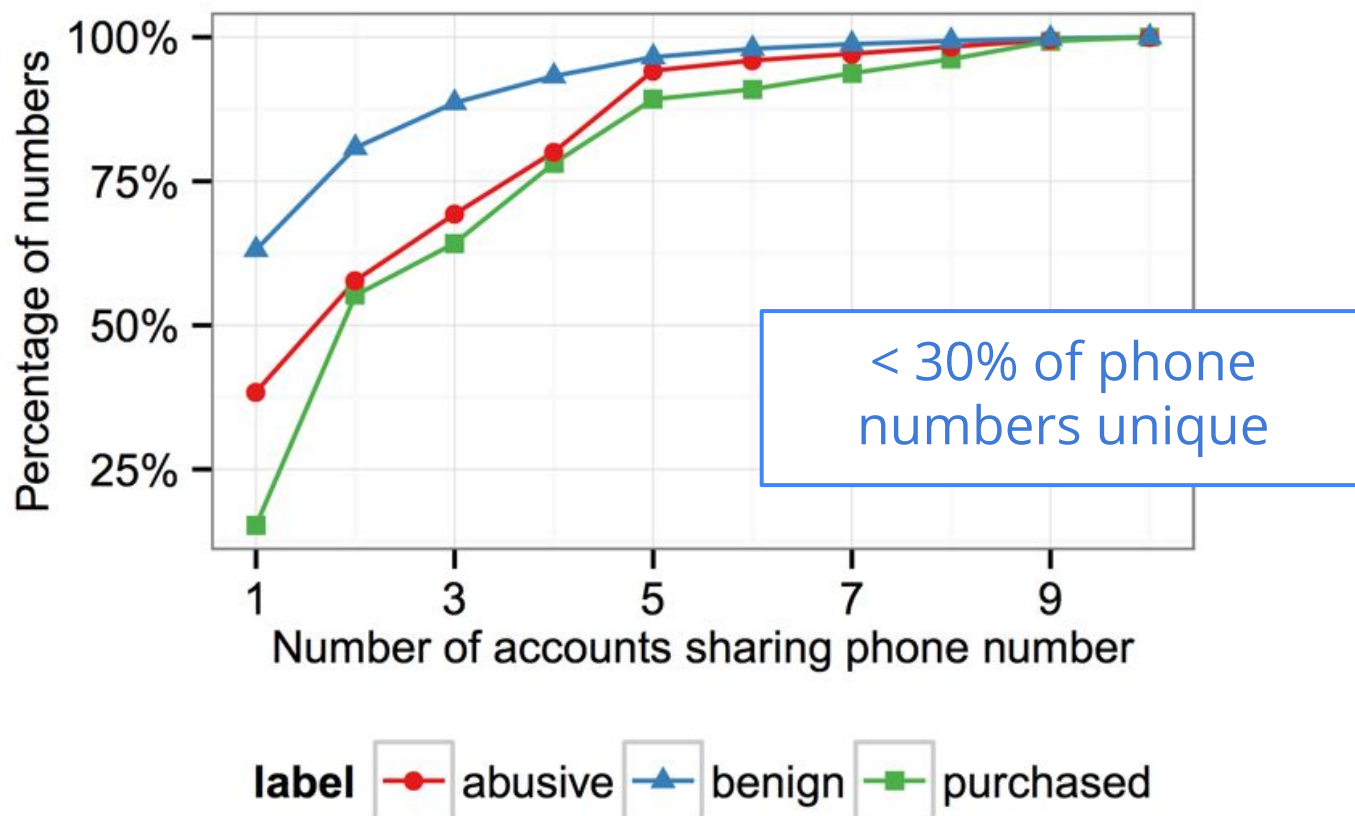
Correctly solved 96% of the time  
Indicative of human solvers

# Minimizing IP re-use





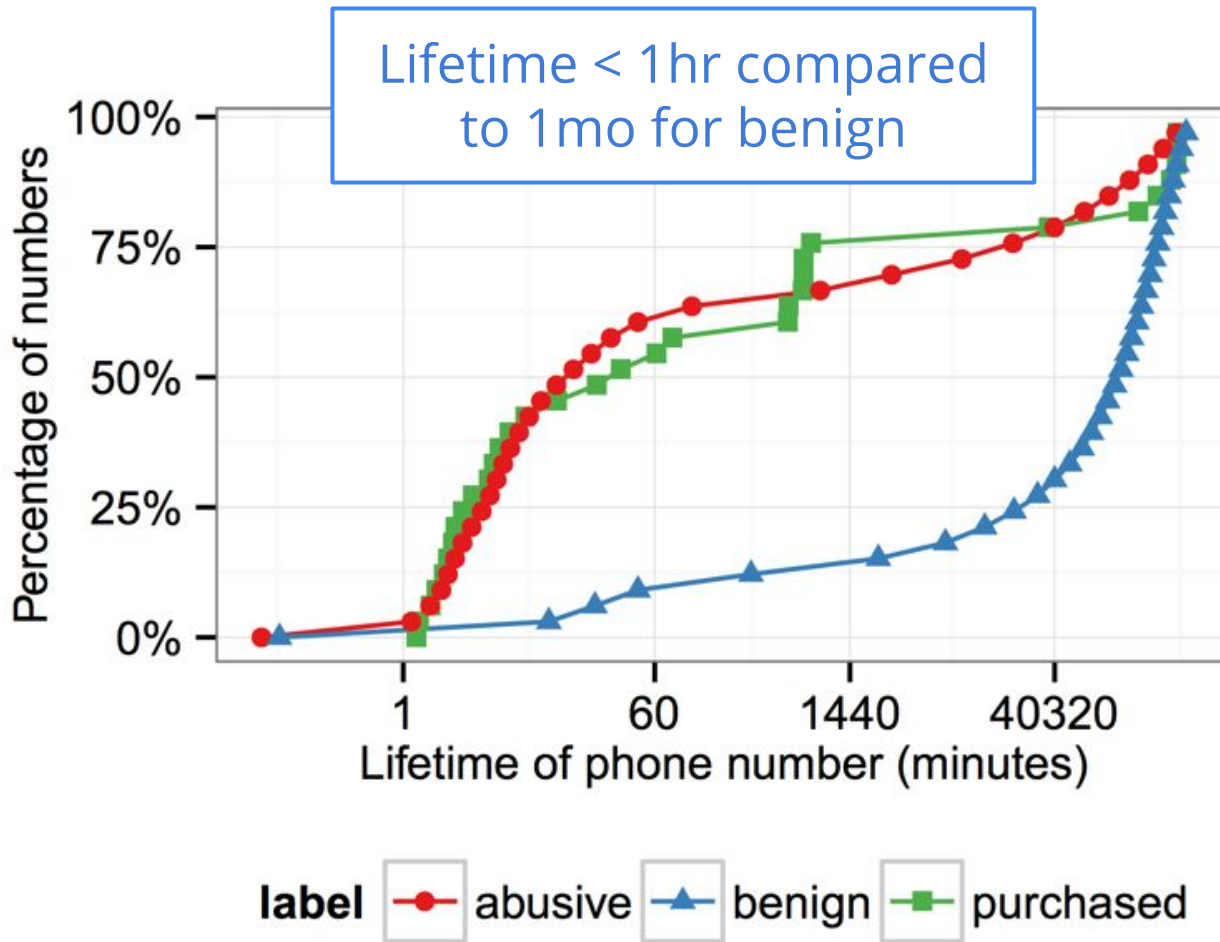
# Frequent phone re-use



Can re-use phone numbers multiple times



# Access to number is short lived

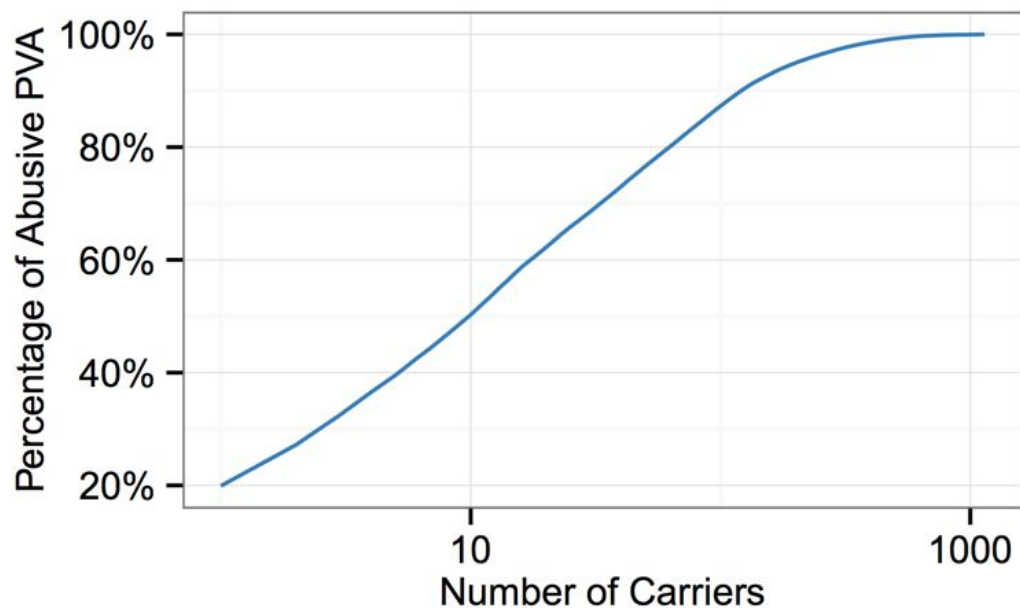


# 4 DIALING BACK ABUSE

# Frequently abused carriers

Over 1,000 abused carriers

Top 10 carriers contribute 50% of abusive PVA



# Carrier reputation

Most VOIP registrations abusive

All other carriers serve predominantly good users

Rank	Carrier	Country	% Good
1	Bandwidth.com	US	41%
2	PT	ID	91%
3	Bharti	IN	98%
4	Vodafone	IN	98%
5	MTN	NG	97%
6	Idea	IN	98%
7	Telekomunikasi	ID	99%
8	Aircel	IN	98%

# Pushing back on abusive carriers

In January, we took action on carrier abuse:

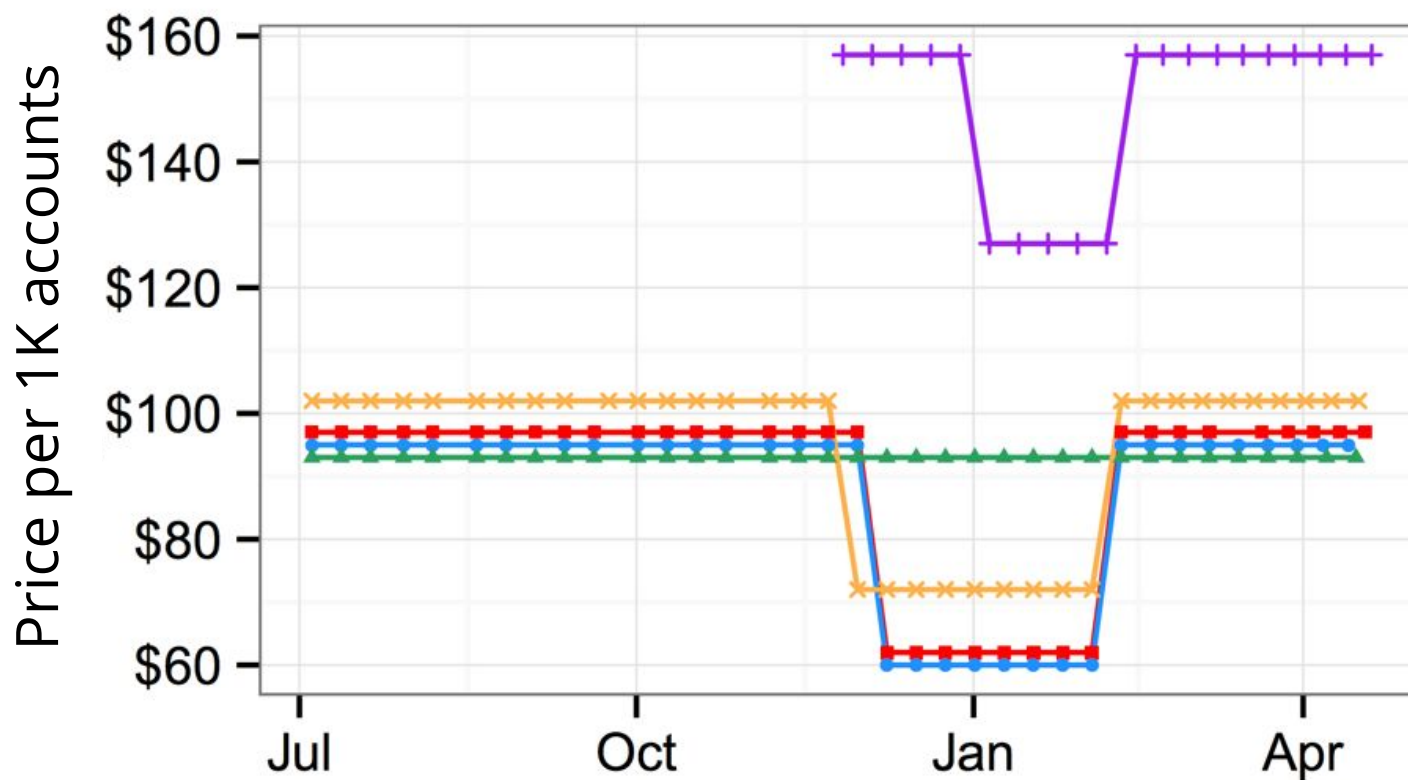
Blocked VOIP numbers acquired with CAPTCHA

Restricted all other known VOIP numbers to single use

Restricted some Indian, Indonesian telcos to single use



# Impact on pricing



Price returns back to pre-VOIP levels

# How did merchants react?

In April, purchase a new set of 2,478 PVA

Only 12% were Bandwidth.com, compared to 80% before

Some previously unseen VOIP services

Merchants hit max registration limit

Need finer grain phone reputation signals



# Summary

Thriving account black market

Use purchasing as an oracle into criminal capabilities

Use pricing as an early warning of failing defenses

Phone verification requires reputation support





# THANKS!

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Google