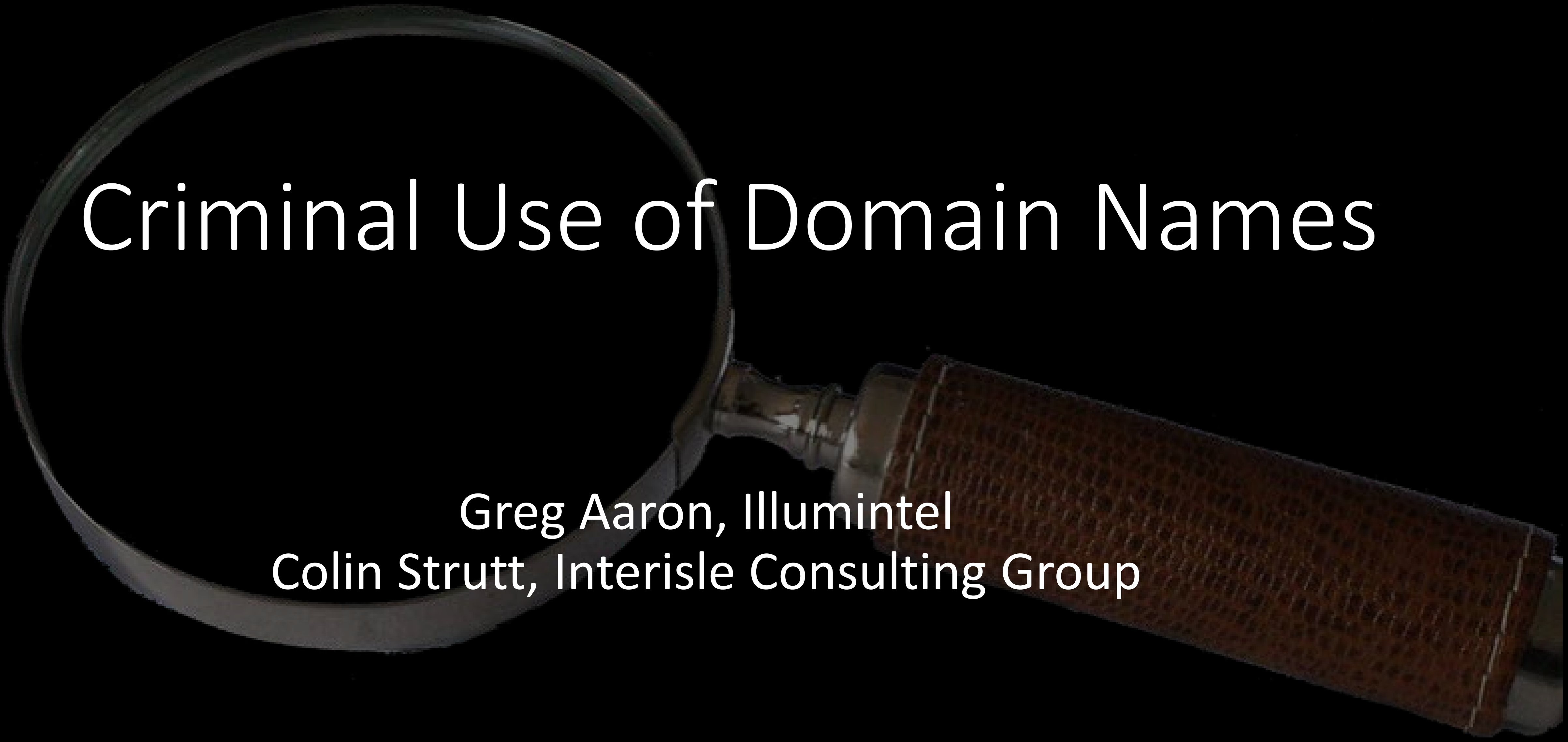
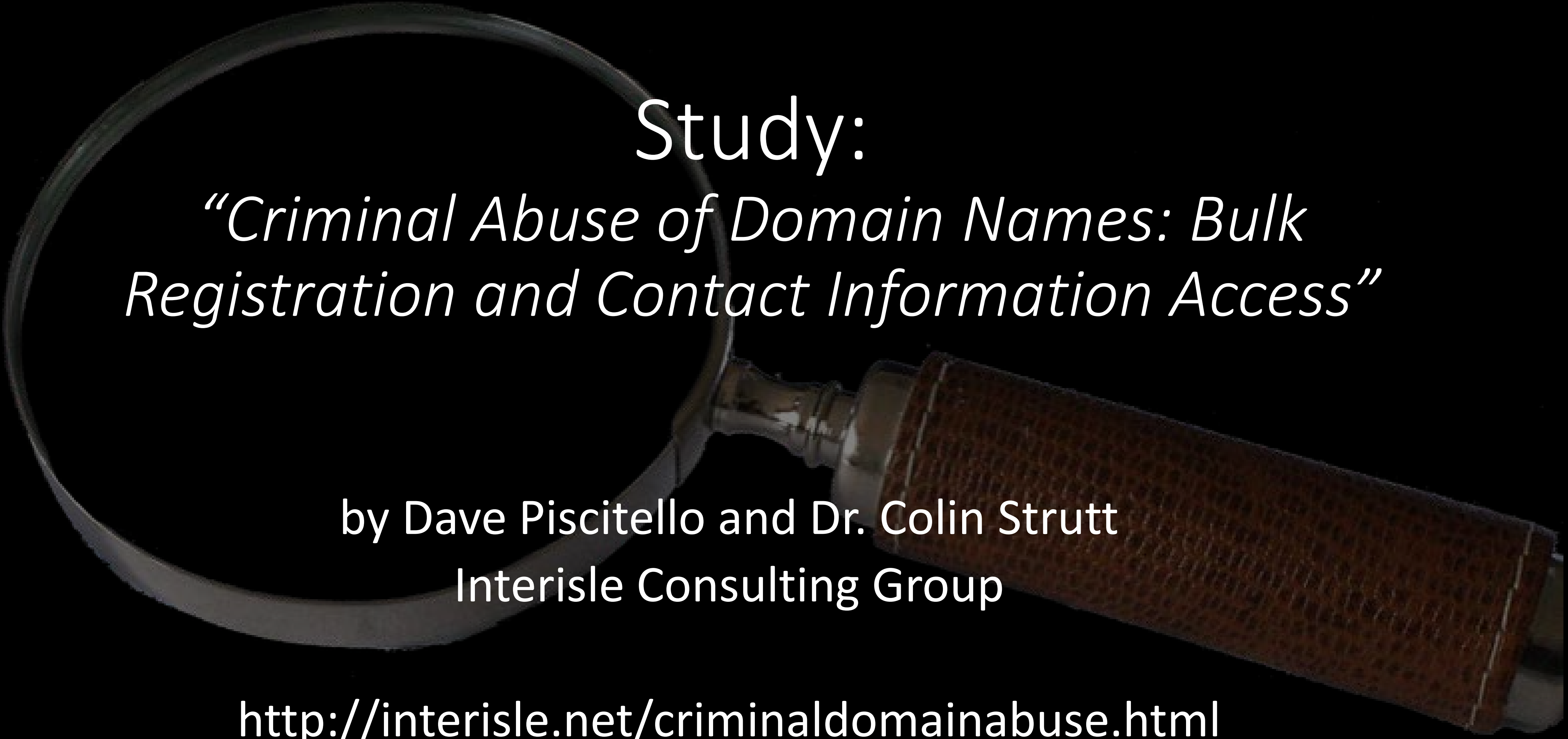


Criminal Use of Domain Names

Greg Aaron, Illumintel
Colin Strutt, Interisle Consulting Group

Maliciously Registered Domain Names

- Domain names registered to perpetrate cybercrime.
- Scope of the problem?
  - 197,876,195 gTLD domain names in zone files.
  - Over the course of a year, about *6 million gTLD* domains appear on major blocklists. And that 3% is the *floor*.
- Harms: cybercrime impacts reliability and trust on the Internet. More specifically, it has very human costs: theft of money and personal information.
- “harm” vs. “crime” vs. “abuse”
- Here’s an example of what you can do with data…



Study:

“Criminal Abuse of Domain Names: Bulk Registration and Contact Information Access”

by Dave Piscitello and Dr. Colin Strutt

Interisle Consulting Group

http://interisle.net/criminaldomainabuse.html

Hypothesis

- Cybercriminals take advantage of *bulk registration services* to “weaponize” large numbers of domains for their attacks.
- Bad domains get recognized and blocked
- Some criminals need to rapidly, cheaply, and repeatedly acquire domain names

Methodology

- Assembled composite **blocklist and reputation data** from a variety of threat intelligence and reputation lists.
  - Including APWG, SURBL, Spamhaus, Abuse.CH
  - Indicate a variety of criminal activities, including malware, phishing, spamming
- Found where thousands of such domains were blocklisted in short time frames. Selected batches in five TLDs.
- Documented when those domains were registered, and at what registrars. This required **domain registration data (WHOIS).**
- Studied the registrars with these high concentrations of blocklisted domains. Did they offer domains cheaply and in bulk?
- Studied the behaviors of the registrants who made those bulk registrations.

Example:
Blocklisted domains in .TOKYO

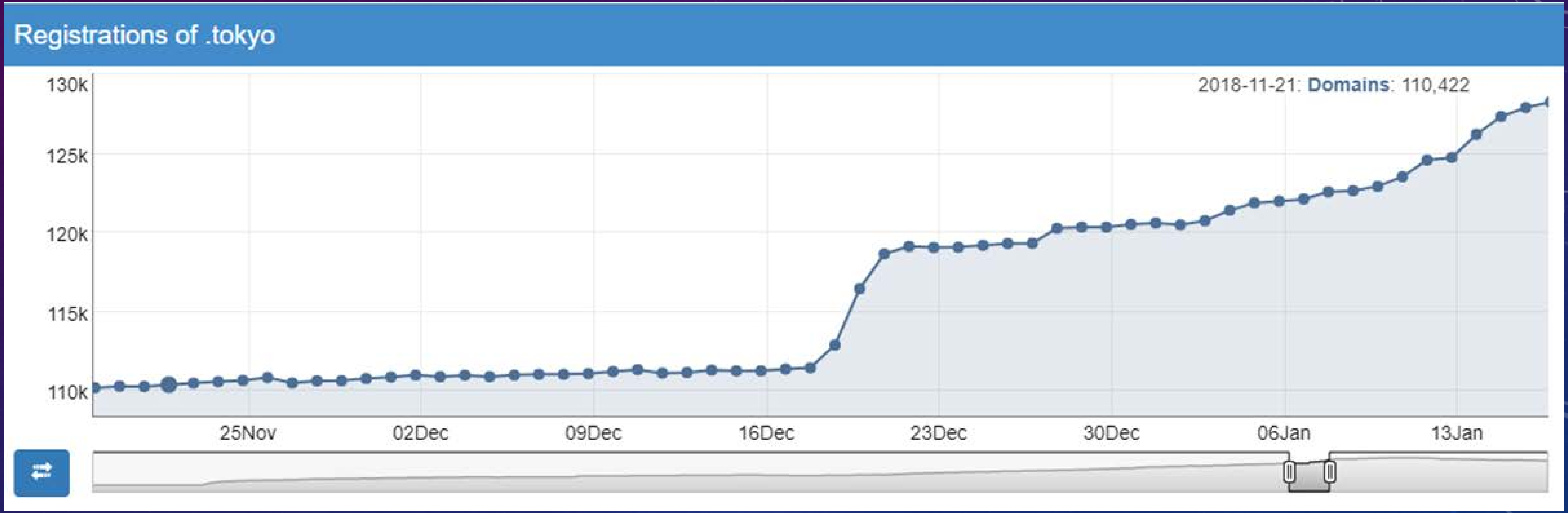
- Blocklisted in .TOKYO from December 12-25, 2018 =

- 8,715 blocklisted domain names

Registrar	IANA ID	Abuse Domains
GMO Internet, Inc. d/b/a Onamae.com	49	8,713 (100%)
NameCheap, Inc.	1068	2 (0%)

Nearly all of these were registered using a single registrar

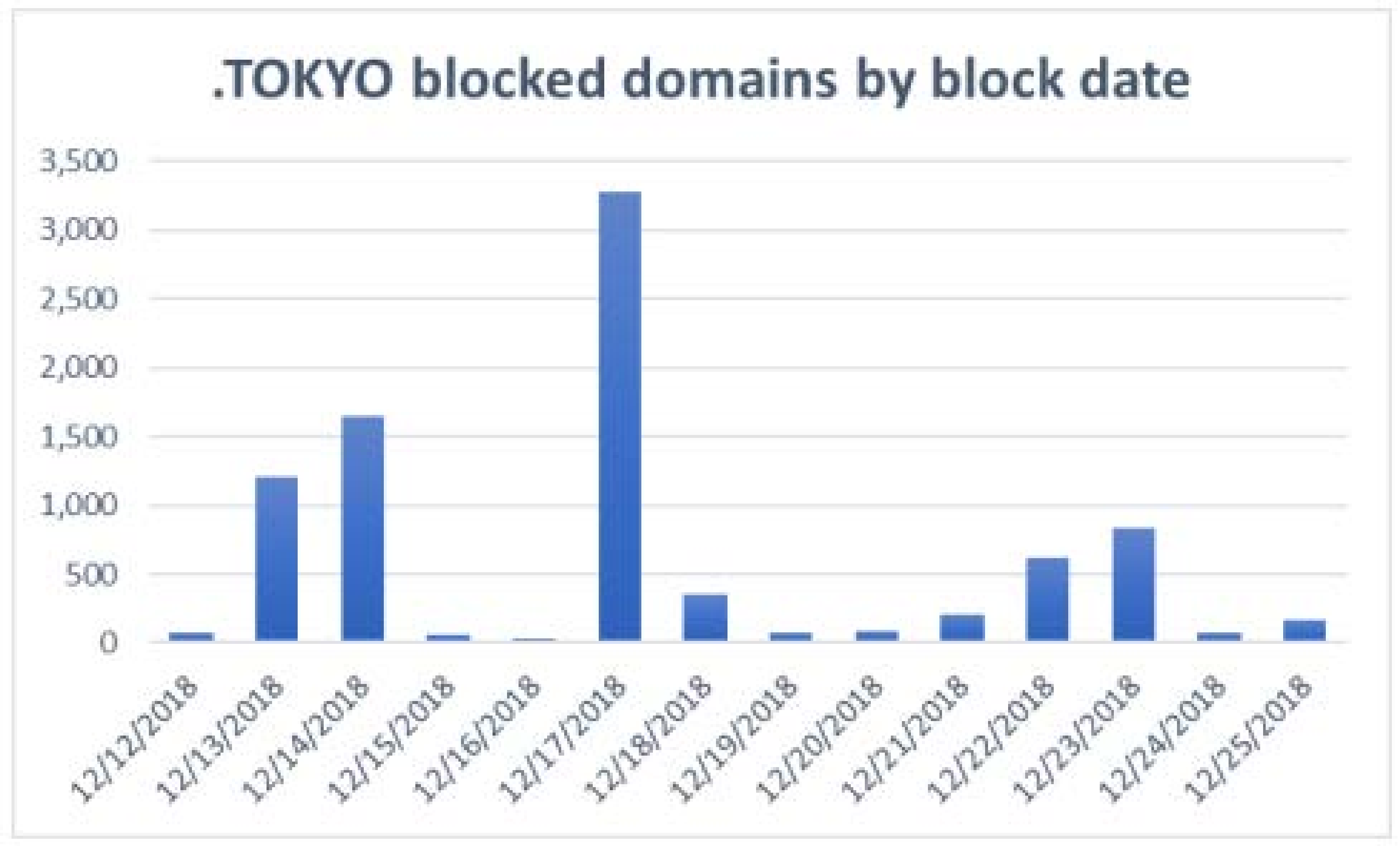
Blocklistings corresponded with spike in registrations

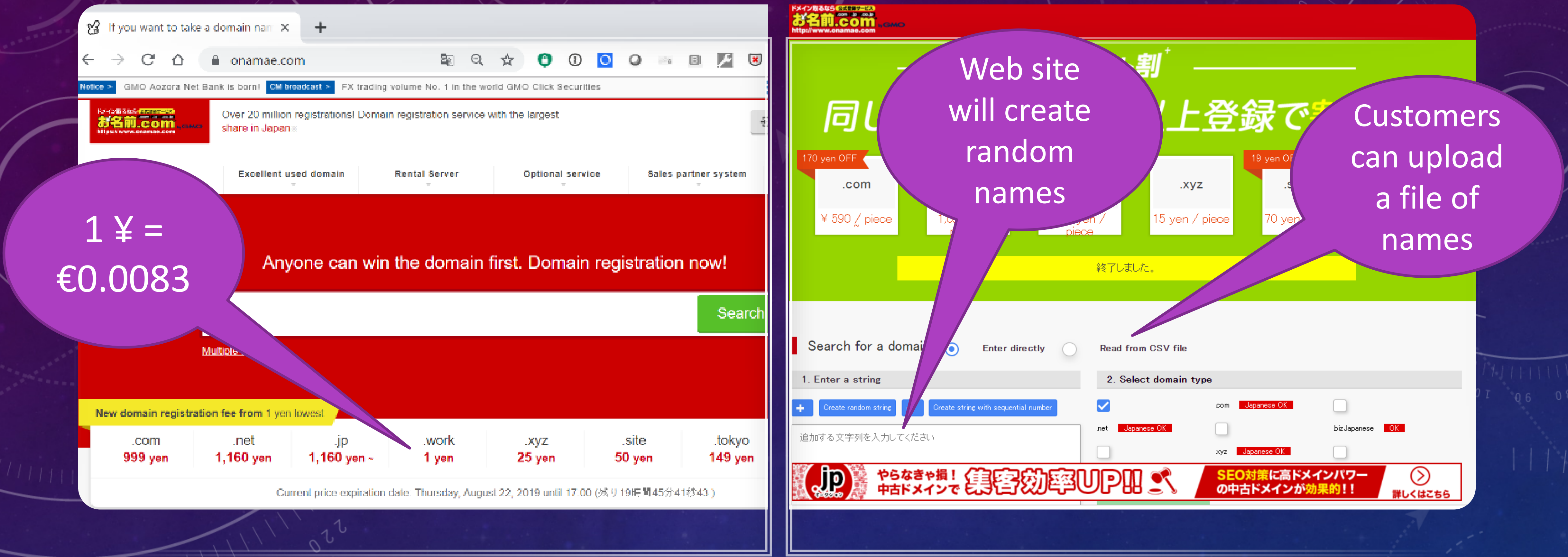


Above: # of domains in .TOKYO registry. Source: ntldstats.com

The blocklisted domains represented 7% of the domains in the TLD

Most of the blocklistings occurred on Dec 17, 2018





GMO Aozora Net Bank is born! FX trading volume No. 1 in the world GMO Click Securities

Over 20 million registrations! Domain registration service with the largest share in Japan

Anyone can win the domain first. Domain registration now!

New domain registration fee from 1 yen lowest

.com	.net	.jp	.work	.xyz	.site	.tokyo
999 yen	1,160 yen	1,160 yen ~	1 yen	25 yen	50 yen	149 yen

Current price expiration date Thursday, August 22, 2019 until 17:00 (残り19日 時45分41秒43)

170 yen OFF .com ¥ 590 / piece

.xyz 15 yen / piece

19 yen OF

70 yen

終了しました。

Search for a domai ● Enter directly ○ Read from CSV file

1. Enter a string

追加する文字列を入力してください

2. Select domain type

☑	.com Japanese OK	□
.net Japanese OK	□	bizJapanese OK
□	xyz Japanese OK	□

やらなきゃ損！中古ドメインで集客効率UP!! SEO対策に高ドメインパワーの中古ドメインが効果的！！

1 ¥ = €0.0083

Web site will create random names

Customers can upload a file of names

Why this registrar, GMO?

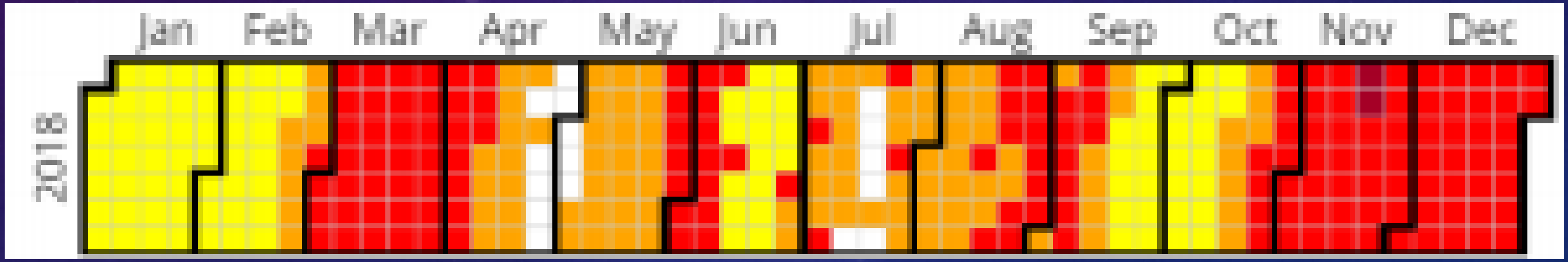
- Very cheap domain registrations
- Offers tools to register in volume
- Customers can generate random domain strings

Finding Criminal Actors and Assets: Search

- SEARCH historical WHOIS records for registrant Name, registrant Street Address, registrant Email address.
- Suspect provided a registrant address in Japan
- Also registered domains in .INFO, .CLUB, .ONLINE, .XYZ, .BIZ, .SPACE, and .WORK
- Assume that criminals submit inaccurate/fraudulent contact data
- Only some WHOIS records contain contact data (post-GDPR)
- PIVOT to other databases or social media to identify related records and the criminal actors.

Finding Criminal Actors and Assets: Pivot

- Triangulate against additional data sources: IP address data, passive DNS records (nameservers), malware data, spamples, etc. **Each is a different specialty.**
- Suspect hosted phishing sites and malware, at three hosting providers: InterQ GMO Internet, Inc.; IDC Frontier, Inc.; Sakura Internet, Inc.
- Heatmap of phishing and malware activity at INTERQ GMO, AS 7506:



- Examining what's on that hosting often leads to yet more domains, additional bogus pseudonyms, etc.
- Conclusion: Japanese criminals, using Japanese registrar, Japanese IP space, targeting Japanese citizens.

General Findings

- Study confirms the hypothesis that cybercriminals take advantage of bulk registration services to use large numbers of domains for their attacks
- The findings corroborate those of others (2017 ICANN report *Statistical Analysis of DNS Abuse in gTLDs (SADAG)*
- *[Disparate data sources are necessary.]*
- *[This is where you can stop play whack-a-mole and where you can make a difference with one intervention.]*

Recommendations

- The report offers nine recommendations.
- Some could become binding policy through ICANN.
- Others could be implemented by registrars and registry operators themselves.
- Others are requests to make better data available.
- *http://interisle.net/criminaldomainabuse.html*