Minneapolis Chapter Palo Alto Networks Fuel Users Group Meeting

7 May 2015

State of Cyber Security

It could be worse!

Source: PBS Sesame Street, Oscar the Grouch

Breaches are inevitable

against a motivated attacker with time and resources

Source: BBC Sherlock Holmes - The Reichenbach Fall
Moriarty stealing the crown jewels

Or with post-it notes

It doesn't take a Super Genius if you publish your post-it note credentials in an interview segment.

Or big sheets of paper in the background

Let's look at some metrics by

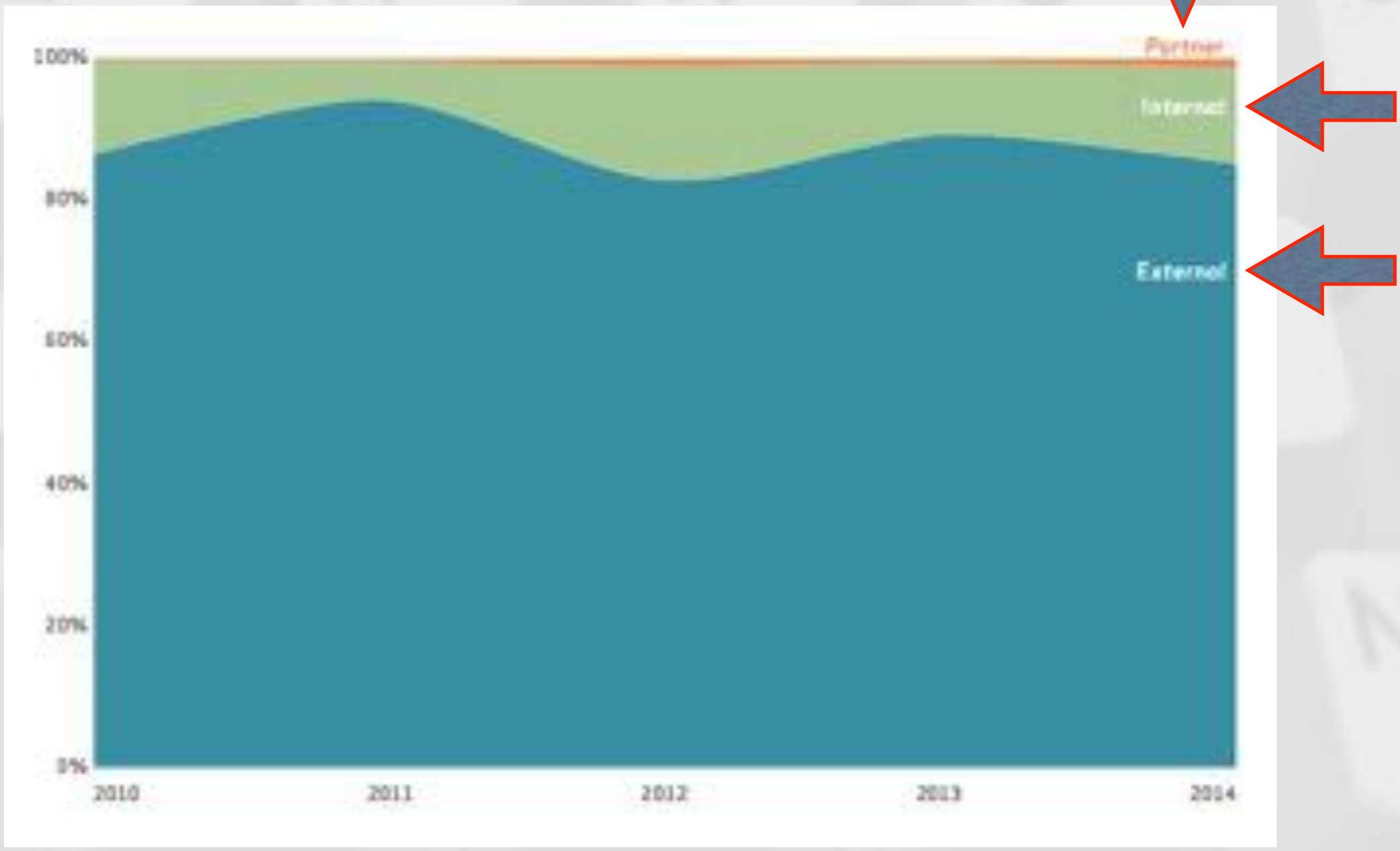
of

2014 Incidents and Data Loss

	NUMBER OF SECURITY INCIDENTS				CONFIRMED DATA LOSS			
INDUSTRY	TOTAL	SMALL	LARGE	UNKNOWN	TOTAL	SMALL	LARGE	UNKNOWN
Accommodation (72)	368	181	90	97	223	180	10	33
Administrative (56)	205	11	13	181	27	6	4	17
Agriculture (11)	2	0	0	2	2	0	0	2
Construction (23)	3	1	2	0	2	1	1	0
Educational (61)	165	18	17	130	65	11	10	44
Entertainment (71)	27	17	0	10	23	16	0	7
Financial Services (52)	642	44	177	421	277	33	136	108
Healthcare (62)	234	51	38	145	141	31	25	85
Information (51)	1,496	36	34	1,426	95	13	17	65
Management (55)	4	0	2	2	1	0	0	1
Manufacturing (31-33)	525	18	43	464	235	11	10	214
Mining (21)	22	1	12	9	17	0	11	6
Other Services (81)	263	12	2	249	28	8	2	18
Professional (54)	347	27	11	309	146	14	6	126
Public (92)	50,315	19	49,596	700	303	6	241	56
Real Estate (53)	14	2	1	11	10	1	1	8
Retail (44-45)	523	99	30	394	164	95	21	48
Trade (42)	14	10	1	3	6	4	0	2
Transportation (48-49)	44	2	9	33	22	2	6	14
Utilities (22)	73	1	2	70	10	0	0	10
Unknown	24,504	144	1	24,359	325	141	1	183
TOTAL	79,790	694	50,081	29,015	2,122	573	502	1,047

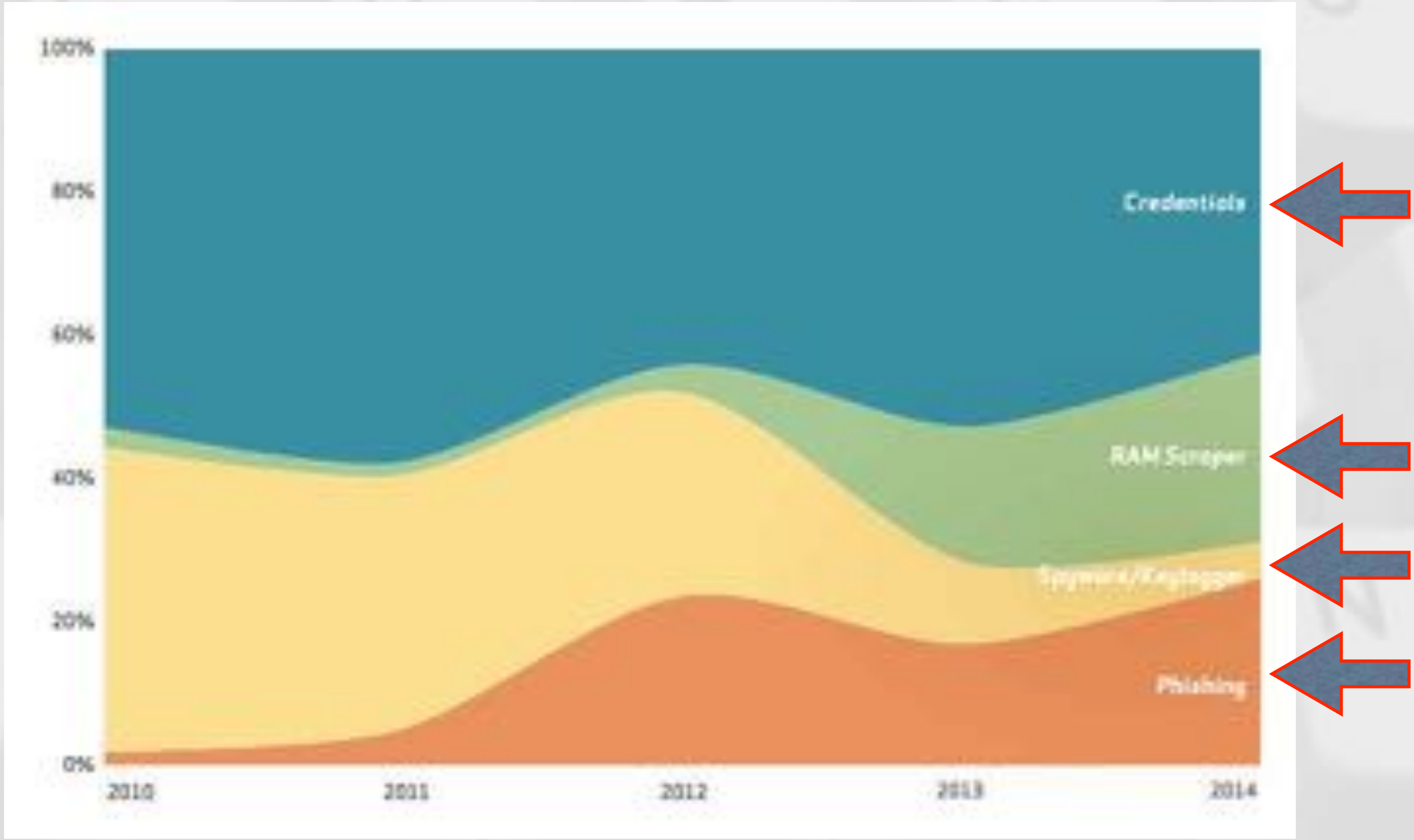
Source: Verizon 2015 Data Breach Investigations Report

2014 Threat Sources



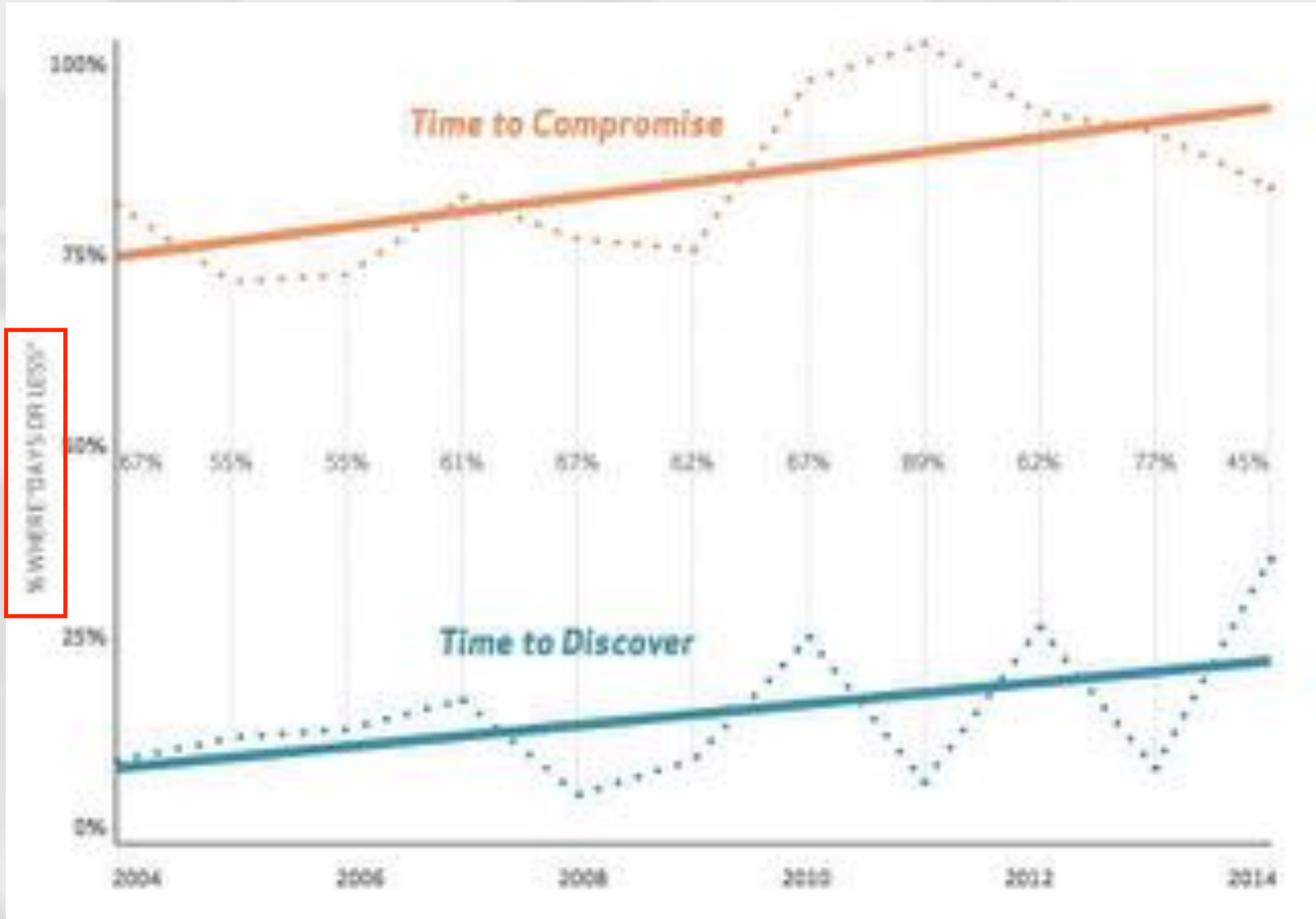
Source: Verizon 2015 Data Breach Investigations Report

2014 Attack Vectors



Source: Verizon 2015 Data Breach Investigations Report

2014 Time to Compromise vs Discover



Source: Verizon 2015 Data Breach Investigations Report

2014 in Summary

Neiman Marcus - **350,000 records**

Hilton, Marriott, Westin and Sheraton - **168 Hotels**

Michaels - **2.6 Mil cards**

Affinity Gaming - **11 Casinos**

New York Attorney General - **22.8 Mil records**

PF Chang - **33 Restaurants**

Community Health Systems - **4.5 Mil patient records**

Home Depot - **56 Mil Cards**

Jimmy Johns - **216 stores** (PoS system)

JP Morgan Chase - 76 mil households + 7 mil businesses

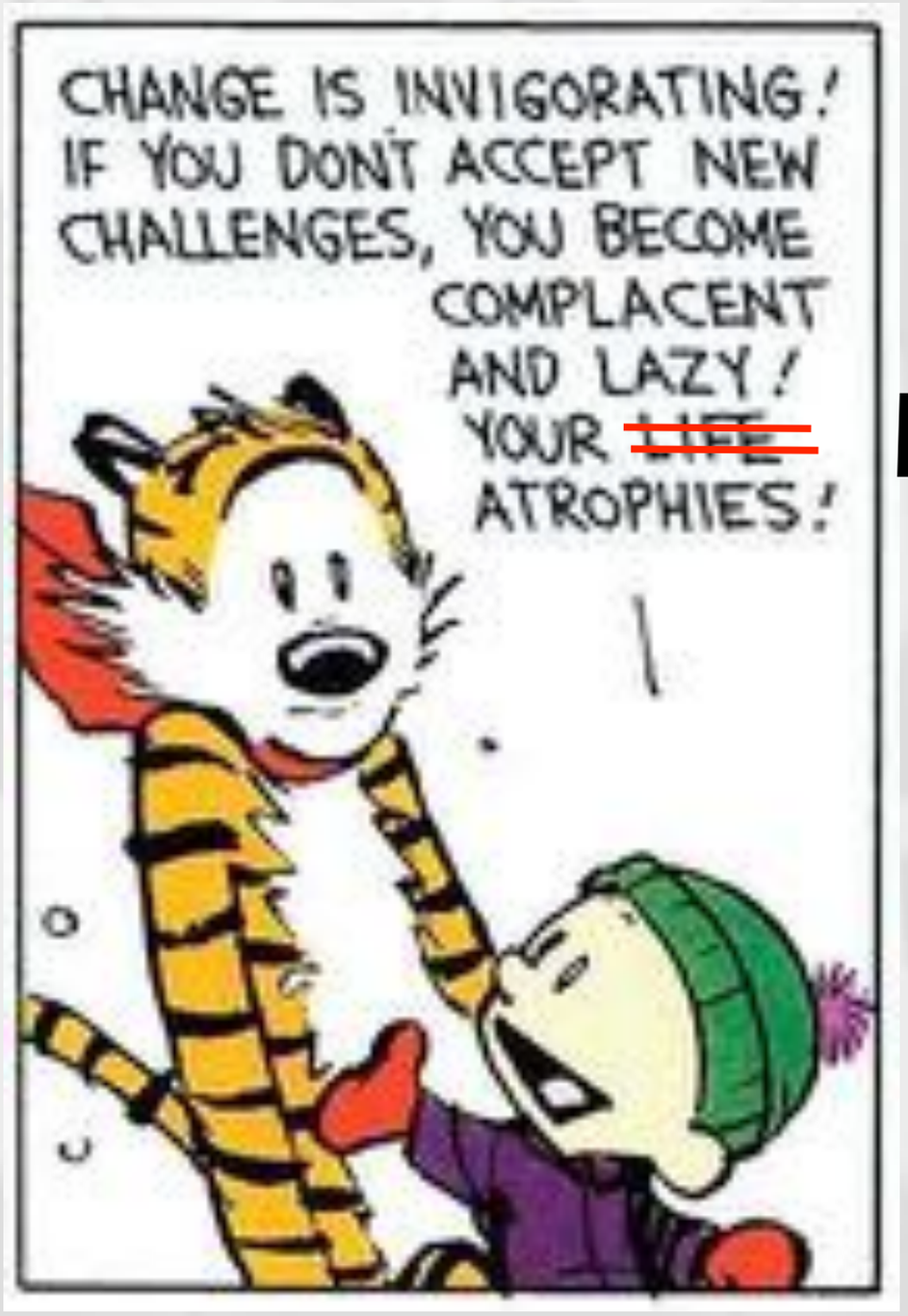
... and many, many more.

We really need to get better at this

we need to change our approach

Photo: McKayla Maroney, 2012 London Olympics “McKayla Not Impressed”

Change is good, sharing is good.



Network

Source: Calvin and Hobbes by Bill Watterson (1995)

We must learn from each other

Palo Alto Networks
Founding Member

NorSec ISAO

ISAO's per Executive Order "Feb 13, 2015"
Promoting Private Sector Cybersecurity Information Sharing
Per EO 13636 and PPD-21

By sharing what we have an abundance of...

LOGS!!!!!

What is Threat Intelligence?

Indicators of Compromise (IoC's)

DNS Hosts
IP Addresses
E-Mail Addresses
URLs
Files (hashes)

+

Relevant Threat Activity

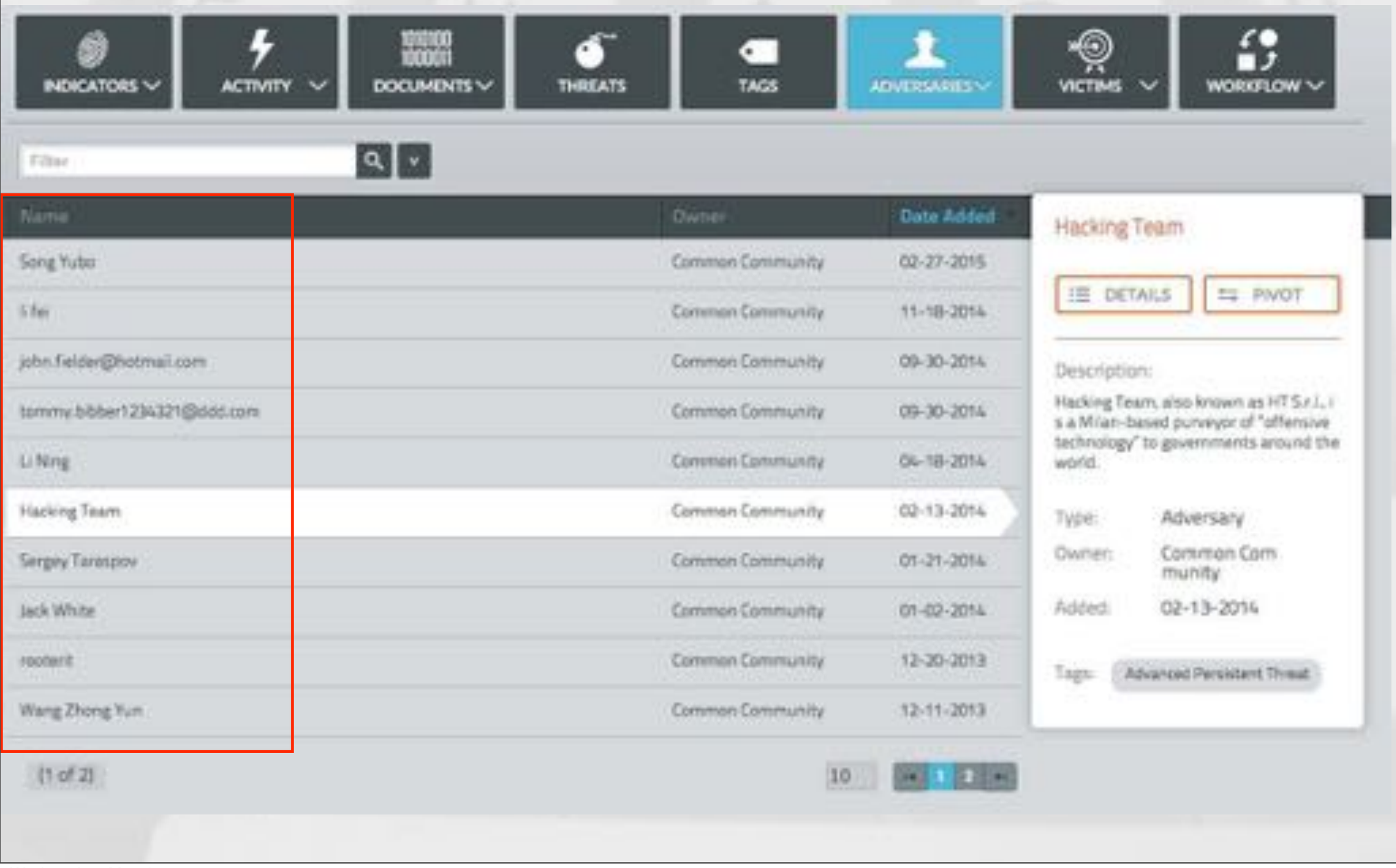
Campaigns
Malware
Known Adversaries

=

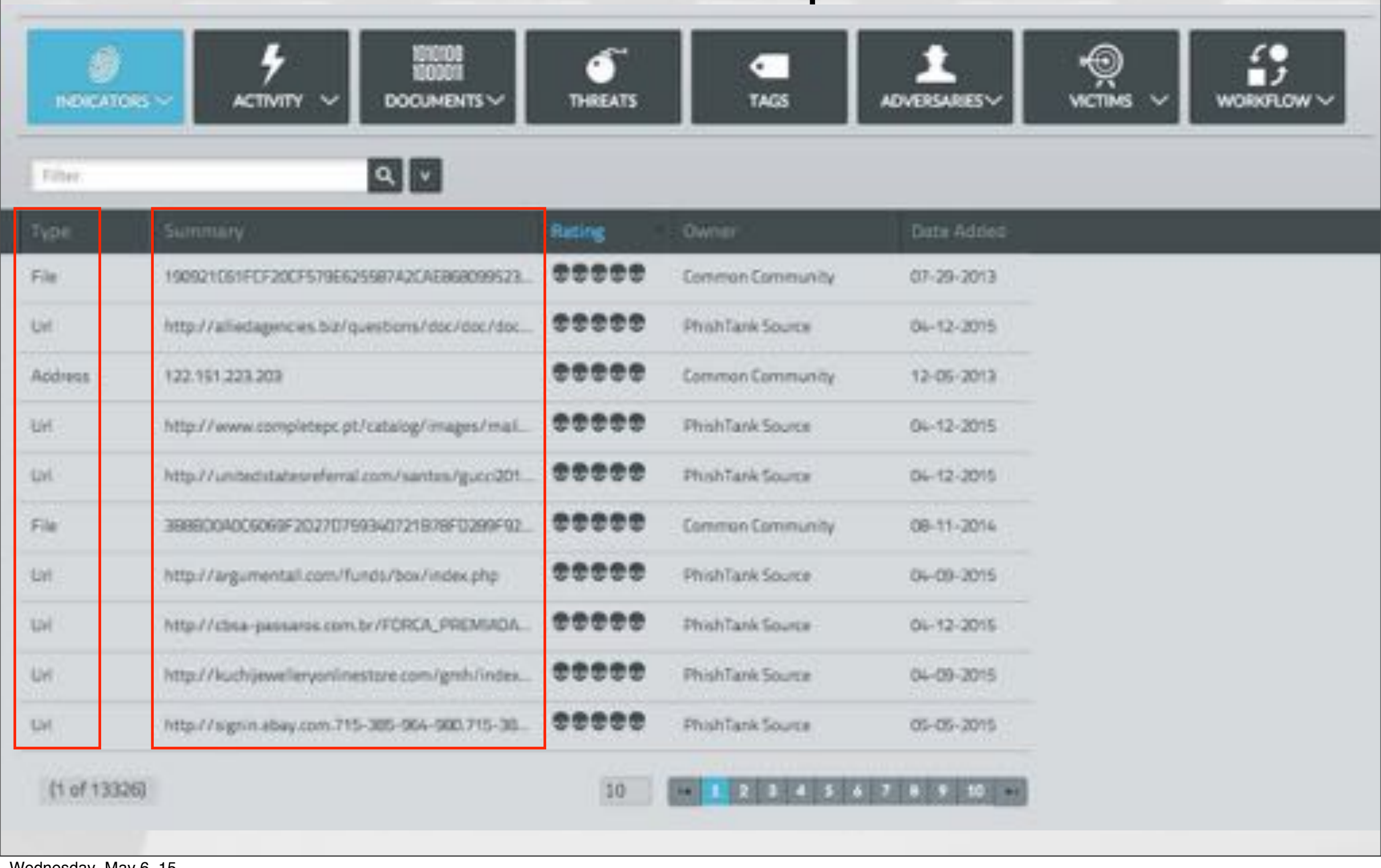
Crowd Sourced Actionable Cyber Threat Intelligence
Vetted by experts

NorSec ISAO

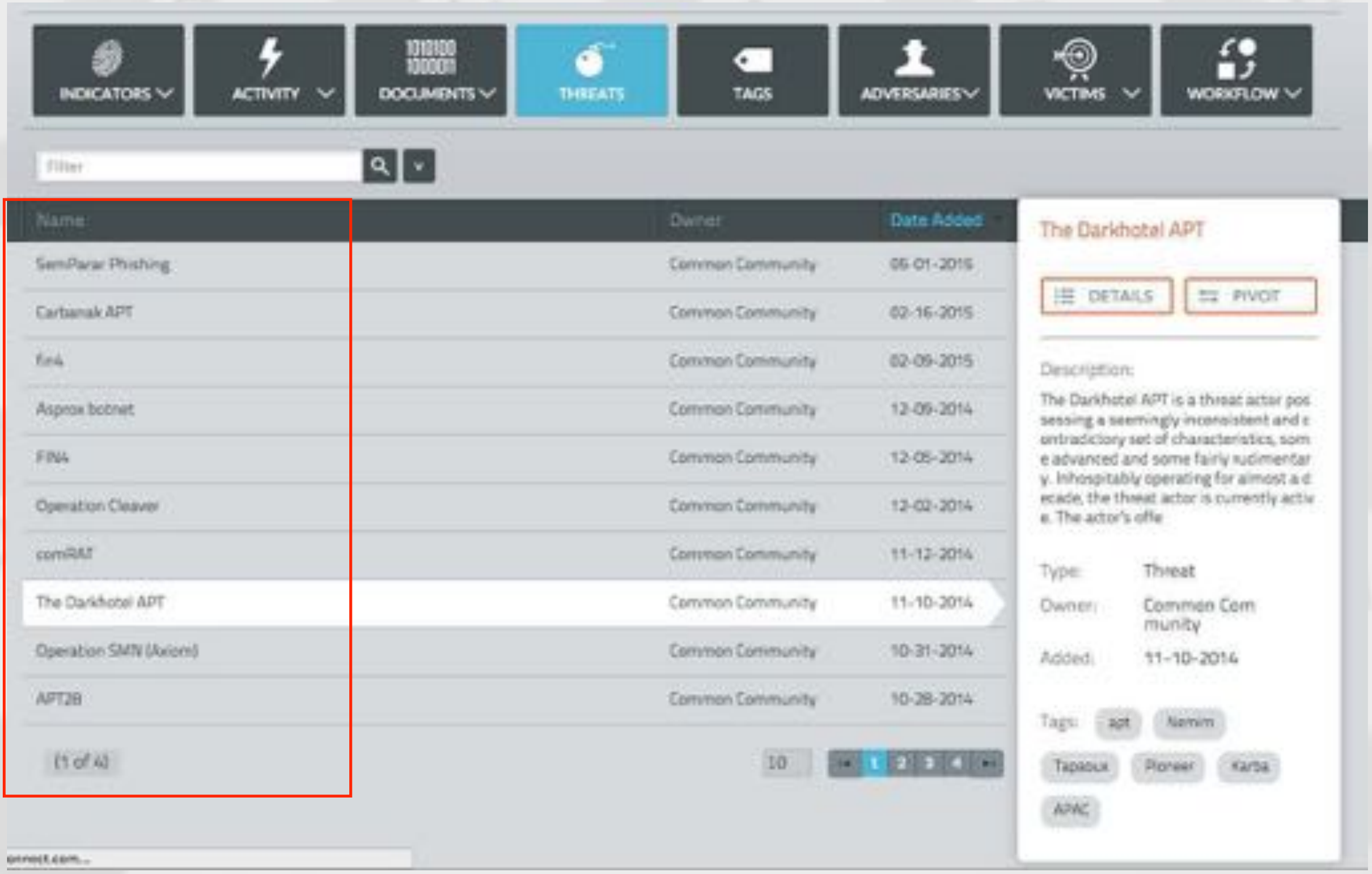
Known Adversaries



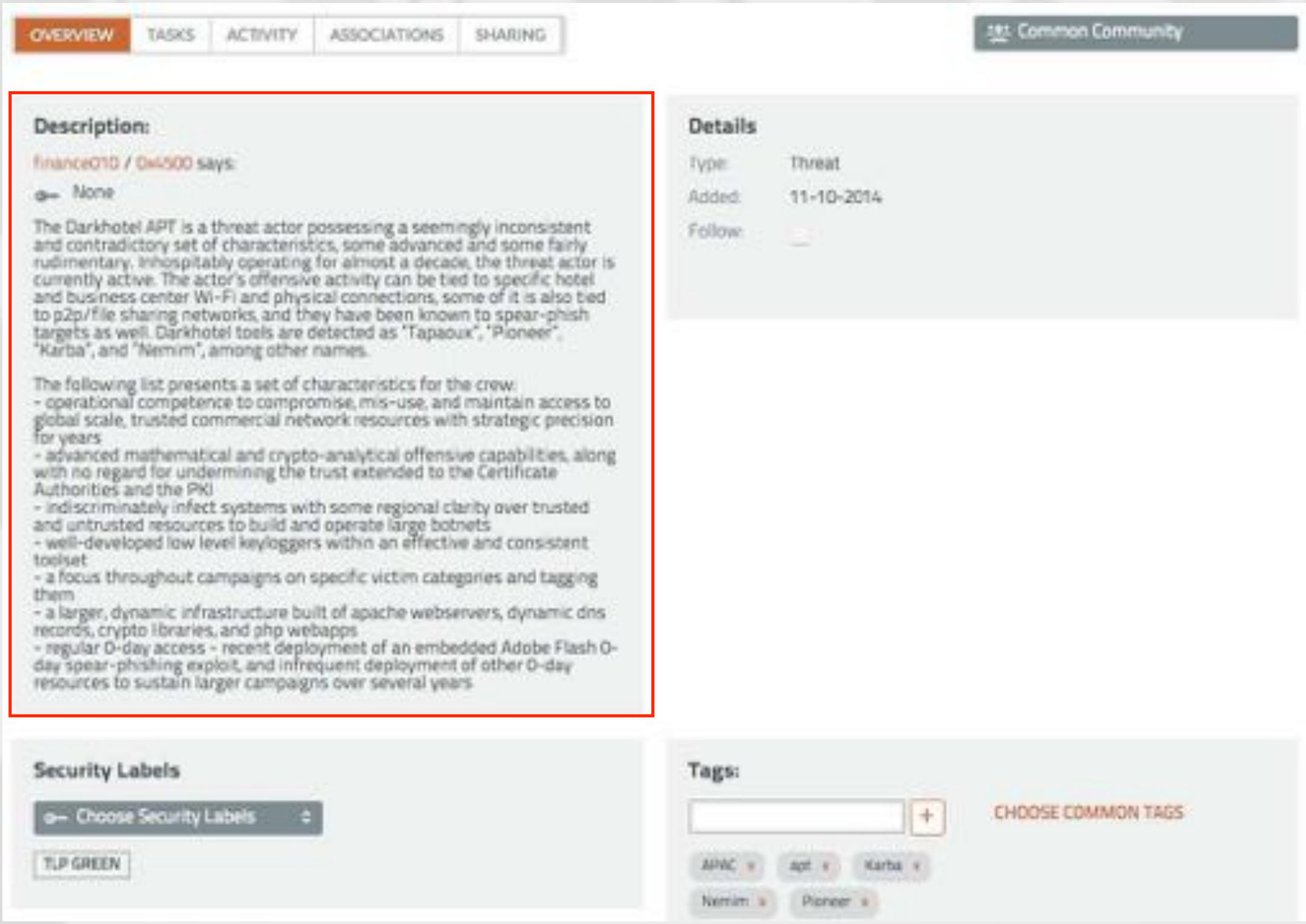
Indicators of Compromise



Threats


INDICATORS
ACTIVITY
DOCUMENTS
THREATS
TAGS
ADVERSARIES
VICTIMS
WORKFLOW
Filter
Name
Owner
Date Added
SemiPanar Phishing
Common Community
05-01-2015
Carbanak APT
Common Community
02-16-2015
fin4
Common Community
02-09-2015
Asprox botnet
Common Community
12-09-2014
FIN4
Common Community
12-05-2014
Operation Cleaver
Common Community
12-02-2014
comRAT
Common Community
11-12-2014
The Darkhotel APT
Common Community
11-10-2014
Operation SMN (Axiom)
Common Community
10-31-2014
APT28
Common Community
10-28-2014
(1 of 4)
10
The Darkhotel APT
DETAILS
PIVOT
Description:
The Darkhotel APT is a threat actor pos sessing a seemingly inconsistent and c ontradictory set of characteristics, som e advanced and some fairly rudimentar y. Inhospitably operating for almost a d ecade, the threat actor is currently activ e. The actor's offe
Type: Threat
Owner: Common Com munity
Added: 11-10-2014
Tags:
apt
Nanim
Tapaoux
Pioneer
Karba
APAC

Threat Actor Overview



Threat Actor Associations

Type	Summary	Rating	Owner	
File	FFA97E9A8791296463760BC88E9FF99FFEFF2C6B8A3A06F6727D5F343FC1F6B51	4	Common Community	Dissociate
File	201C383143C38CA05ECC8EF3504A8F9086D1D942	4	Common Community	Dissociate
Host	trade-inf.com	5	Common Community	Dissociate
Host	ms-hotfix.com	5	Common Community	Dissociate
Host	window-services.net	5	Common Community	Dissociate
Host	ms-updates.com	5	Common Community	Dissociate
Host	www.news-updates.org	2	Common Community	Dissociate
Host	msdn4-updates.com	5	Common Community	Dissociate
Host	www.universal-online.com	5	Common Community	Dissociate
Host	office-revision.com	5	Common Community	Dissociate

(1 of 61) 10 1 2 3 4 5 6 7 8 9 10

What are some open sources of this data?

"APTnotes" reports:
https://github.com/kbandla/APTnotes

ShadowServer:
https://www.shadowserver.org/

REN-ISAC's Collective Intelligence Framework
http://csirtgadgets.org/
#CIF on FreeNode

Vocabulary for Event Recording and Incident Sharing
http://veriscommunity.net

What do you do with all this data?

Integrate ThreatConnect with Splunk
https://splunkbase.splunk.com/app/1893/

Block known hostiles at the system level:
Host Based Firewalls
Email Filtering
IDS Alerts

Discover hashes with HIDS (Tripwire, OSSEC, et al.)

Bro-IDS

Let Palo Alto Networks do it for you

APT Detection with Wildfire:
Sandbox threats and automatic signature generation!

End point protection with Traps:
Kills 27 exploit techniques

High confidence IoCs automatically blocked

Thank you! Questions??

Upcoming events

BSidesMSP Unconference
Tue May 12 @11a-3p
Eagle Street Grill, St Paul

CryptoParty MN
Sat May 9 @1300
Hack Factory

Security B-Sides MSP 2015 Sat & Sun **June 13-14**
Theme "Threat Intelligence" - RSVP at BSidesMSP.org
Target Commons, Downtown Minneapolis

This presentation can be found at
http://github.com/itriskltd