Understanding the Dark Web

May 13, 2015
Introduction

As rights holders and enforcement agencies beef up online enforcement, counterfeiters and other criminals are increasingly moving to the Dark Web to conduct their illicit activities.

Managers tasked with corporate security, and company brand and content protection need a basic understanding of what the Dark Web is, how cybercriminals, counterfeiters and IP thieves use it, and what to do about it.
Outline

I. What is the Dark Web?
II. Key Terms
III. Timeline
IV. How does the Dark Web work?
V. Why must companies understand the Dark Web better?
VI. What threats to your company, brand and content are on the Dark Web?
VII. What steps can companies take to address these threats on the Dark Web?
VIII. Questions
IX. Conclusion
What is the Dark Web?
The part of the Internet that is hidden from view.

*http://www.thehiddenwiki.net/purchasing-on-silk-road-a-trip-report/*
Key Discussion Terms: 
Surface (Open) Web

Anything that can be indexed by a search engine like Google/Bing (i.e., linked content).

- 4% of www content.
- Easily accessed.
- Under government surveillance.

Data from http://www.whoishostingthis.com/blog/2013/12/17/tor-deep-web/.
Example: Surface (Open) Web
Key Discussion Terms: Deep Web

Any content that’s not linked (i.e., cannot be indexed by search engines).

- 96% of www content (500x the size of the Surface Web).
- Can include harmless content like travel site search results and library catalogs.
- Also includes the “Dark Web.”

Data from http://www.whoishostingthis.com/blog/2013/12/17/tor-deep-web/.
Example: Deep Web

Results from text box-based search on travel site not accessible via search engine (not linked).
Key Discussion Terms: Dark Web / Darknet

Anonymous web (i.e., the portion of the Deep Web that is not accessible via standard browsers).

A “darknet” is a private network, a collection of which form the “dark web.”

- Clandestine / Intentionally hidden from view.
- Provides anonymity (both for publishers and users).
- Difficult to navigate/monitor.
Example: Dark Web / Darknet

The homepage of Agora, a popular dark market.

Key Discussion Terms:

TOR

- Short for “The Onion Router” (TOR);
- The most famous anonymous network, which can be accessed using the TOR browser;
- TOR browser allows users to surf the dark web anonymously by directing traffic through a network of intermediaries (adding layers).

Key Discussion Terms: Cryptocurrency

Medium of exchange based on cryptography; a type of digital currency (e.g., Bitcoin).

- Typically decentralized, as opposed to centralized systems like PayPal.
- Used by dark web markets; allow for anonymous transactions.

Timeline of the Deep Web

- 2002 – Tor Network developed by US Naval Research Laboratory
- 2003 – The I2P peer-to-peer network developed
- 2006 – Tor becomes a non-profit organization
- 2009 – “Satoshi Nakamoto” started Bitcoin digital currency
- 2011 – Silk Road Market launches
- 2012 – Experts estimate earnings of $22M for SR
- 2013 – Silk Road shut down (earnings > $1B)
- 2014 – Other dark web markets proliferate (Agora, Evolution)
- 2015 – Ross Ulbricht sentenced to life; Evolution exit scam
How does the Dark Web work?

In order to access the Deep Web, you need to use a dedicated browser. TOR (The Onion Router) is the most commonly used, but other options such as I2P and Freenet offer an alternative solution.

When using the Surface Web, you access data directly from the source.

This direct approach tracks the information downloaded, from where and when it was accessed, and your exact location.

Information on the Deep Web cannot be accessed directly. This is because data is not held on any single page, but rather in databases, which makes it difficult for search engines to index.

Files are shared through any number of computers connected to the Internet that hold the information you need. This is known as peer-to-peer networking.

This method of sharing encrypted data makes it difficult for your location and the kind of information you access to be tracked or monitored.
What threats to your company, brand, and content are on the Dark Web?

Consumer data, counterfeit goods, trade secrets, etc. often sold on dark web markets.

Sample of items found on Agora homepage


Index for Agora

Note: “Counterfeits” usually refers to counterfeit currency, identification documents, and manufacturer’s coupons.
More Dark Web Market Listing Examples

**FAST Darkweb 3d printing**

<table>
<thead>
<tr>
<th>Seller</th>
<th>danlmmn668</th>
<th>Price</th>
<th>USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>FE</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shipping from</td>
<td>United States</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shipping to</td>
<td>United States</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currency</td>
<td>Bitcoin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Description:
- PM and I will make a custom listing.
- Can print in PLA or NYLON (warping occurs but doesn’t effect part much)
- Print at 8x8in build platform
- Anything from guns to skimmers
- Most require cleaning up, will clean up for extra, prints are made to be FAST

**2x Netflix Accounts Lifetime Warranty**

<table>
<thead>
<tr>
<th>Seller</th>
<th>ThoJo</th>
<th>Price</th>
<th>USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>FE</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital item</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currency</td>
<td>Bitcoin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Feedbacks**

<table>
<thead>
<tr>
<th>Feedback</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Okay! Thx</td>
<td>1.10 USD</td>
</tr>
<tr>
<td>2x Netflix Accounts Lifetime Warranty</td>
<td>1.49 USD</td>
</tr>
<tr>
<td>Amazing seller. Received my order in less than an hour. Very very satisfied.</td>
<td>0.37 USD</td>
</tr>
</tbody>
</table>

**USA COUPONS - BREAKFAST & CEREAL COUPON PACK**

| Ship from | PM(site messages) |
| Ship to   | PM(site messages)  |
| Exclude to| Undeclared         |
| Qty       | 1 piece            |

**Delivery variants:**
- Digital Delivery (PM) 1 day
- (every next item - .00)

**Description**

Introducing the Breakfast & Cereal Coupon Pack.

Coupons work in the USA only.
Look exactly like the leading internet coupons and work even better.
All you need is a printer and you can print and use these as many times as you like.
Coupons expire in 90 days from when you first receive your coupons

More Dark Web Market Examples

Fake Nike Air Yeezy II Red October Version (Bigdeal on Agora) Dec. 2014

What steps can companies take to address the threats on the Dark Web?

Peel back the onion layers…

- Internal Awareness and Education. Invest in building in-house knowledge.
- Expand online monitoring efforts to include intelligence gathering and enforcement activities that cover dark web markets.
- Work with knowledgeable cyber-investigators and counsel.
Question & Answer
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