



Criminal Investigations
and Network Analysis
A DHS CENTER OF EXCELLENCE



Understanding the Economy and Social Organization of the Underground Market for Cybercrime as a Service

LEAD PI: TOM HOLT

Dynamic Patterns of Criminal Activity

SUMMARY

Technology-enabled crime is a huge challenge for investigators because it moves rapidly and can adapt to various shifts in platforms and enforcement efforts. A large comparative analysis of digital and physical goods markets operating on both the Open and Dark Web is needed to show historical data and trends in market products, payment systems, market structure, and vendor and seller interactions. This data analysis supports the operational needs of DHS by providing information related to trends and behavior sets within illicit online markets, and the formation and disintegration of TCOs across both Open and Dark Web markets.

PROBLEM STATEMENT

HSE personnel require thorough understanding of criminal operations in order to formulate the most effective disruption strategies. A gap in knowledge on the operational characteristics of illicit online markets for digital (cybercrime tools, personal information) and physical products (drugs, guns, currencies, identity documents) can greatly hinder the impact of chosen disruption tactics. The results of this project will fill an existing knowledge and training gap with DHS and its constituent agencies and bureaus by developing a robust set of research findings related to both historical trends and behavior sets within illicit online markets, the formation and disintegration of TCOs across both Open and Dark Web markets, and resultant training products to support the HSE.

APPROACH

The project combines qualitative and quantitative methods. We plan to determine the distribution of products offered in the illicit online economies for digital products and physical products sold via the Open and Dark Web, identify and compare the scope of profits earned by vendors and buyers for products offered in the illicit online economies, assess the formal and informal organizational behaviors of buyers, sellers, and site operators enabling the economy and identify variations in behavior across product and platform type, and map, if possible, the social networks of actors within and across Open and Dark Web markets and the potential points of leverage for network disruption.

RESULTS

The project has developed a codebook and unique data on the distribution of digital and physical goods sold in illicit online markets. The research team has also produced seven white papers that cover background issues in market operations on the Open and Dark Web, including the terms used by market actors, the economics of the market, as well as specialized background briefs on the sale of cybercrime services, firearms, and child sexual exploitation content.

ANTICIPATED IMPACT FOR DHS

The results of this project will fill an existing knowledge and training gap with DHS and its constituent agencies and bureaus by developing a robust set of research findings and producing multiple key knowledge products, training materials, research briefs, and webinars (live and pre-recorded) for dissemination and use within DHS and other state and local law enforcement partners.