

Application Case 4.3

A Mine on Terrorist Funding

The terrorist attack on the World Trade Center on September 11, 2001, underlined the importance of open source intelligence. The USA PATRIOT Act and the creation of the U.S. Department of Homeland Security (DHS) heralded the potential application of information technology and data mining techniques to detect money laundering and other forms of terrorist financing. Law enforcement agencies have been focusing on money laundering activities via normal transactions through banks and other financial service organizations.

Law enforcement agencies are now focusing on international trade pricing as a terrorism funding tool. International trade has been used by money launderers to move money silently out of a country without attracting government attention. This transfer is achieved by overvaluing imports and undervaluing exports. For example, a domestic importer and foreign exporter could form a partnership and overvalue imports, thereby transferring money from the home country, resulting in crimes related to customs fraud, income tax evasion, and money laundering. The foreign exporter could be a member of a terrorist organization.

Data mining techniques focus on analysis of data on import and export transactions from the U.S. Department of Commerce and commerce-related entities. Import prices that exceed the upper

quartile import prices and export prices that are lower than the lower quartile export prices are tracked. The focus is on abnormal transfer prices between corporations that may result in shifting taxable income and taxes out of the United States. An observed price deviation may be related to income tax avoidance/evasion, money laundering, or terrorist financing. The observed price deviation may also be due to an error in the U.S. trade database.

Data mining will result in efficient evaluation of data, which, in turn, will aid in the fight against terrorism. The application of information technology and data mining techniques to financial transactions can contribute to better intelligence information.

QUESTIONS FOR DISCUSSION

1. How can data mining be used to fight terrorism? Comment on what else can be done beyond what is covered in this short application case.
2. Do you think data mining, while essential for fighting terrorist cells, also jeopardizes individuals' rights of privacy?

Sources: J. S. Zdanowic, "Detecting Money Laundering and Terrorist Financing via Data Mining," *Communications of the ACM*, Vol. 47, No. 5, May 2004, p. 53; and R. J. Bolton, "Statistical Fraud Detection: A Review," *Statistical Science*, Vol. 17, No. 3, January 2002, p. 235.

professional sports nowadays employ data crunchers and use data mining to increase their chances of winning. Data mining applications are not limited to professional sports. In a recently published article, Delen et al. (2012) developed models to predict NCAA Bowl Game outcomes using a wide range of variables about the two opposing teams' previous games statistics. Wright (2012) used a variety of predictors for examination of the NCAA men's basketball championship bracket (a.k.a. March Madness).

SECTION 4.3 REVIEW QUESTIONS

1. What are the major application areas for data mining?
2. Identify at least five specific applications of data mining and list five common characteristics of these applications.
3. What do you think is the most prominent application area for data mining? Why?
4. Can you think of other application areas for data mining not discussed in this section? Explain.