

Banking & Finance: Neural networks have been applied successfully to problems like derivative securities pricing and hedging, futures price forecasting, exchange rate forecasting and stock performance.

Marketing: Neural networks are well-equipped to carry out segmenting customers according to their basic characteristics including demographics, socio-economic status, geographic location, purchase patterns, and attitude towards a product.

Operations management: Neural networks have been used successfully in operations management, particularly in the areas of scheduling and planning.

Like any trading strategy, neural networks are no quick-fix that will allow you to strike it rich by clicking a button or two. In fact, the correct understanding of neural networks and their purpose is vital for their successful application. Well-prepared input information on the targeted indicator is the most important component of your success with neural network. When applied correctly, neural networks can bring a profit on a regular basis.

## PLASTIC CARD FRAUD

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As far back as the late 1800s, consumers and merchants exchanged goods through the concept of credit, using credit coins and charging plates as currency. It wasn't until about half a century ago that plastic payments as we know them today became a way of life.

Plastic payment cards provide a convenient and generally secure medium with which people conduct a wide variety of transactions. Their convenience, in conjunction with mass advertising, has seen a steady growth in both the volume and value of plastic card transactions over the past decade. However, with new commercial opportunities come new crime opportunities, and there appears to be a continual struggle between the financial industry, law enforcement and the offenders as technological advancements in security in the plastic card industry, are met with more innovative and adaptive advances to plastic card crime.

Plastic card fraud is defined as using plastic payment cards, such as ATM, debit, credit or store cards to take money without permission or prior knowledge from

a bank, building society or credit card account (or to charge money to credit/debit cards). In the context of the above definition, plastic card fraud commonly occurs through the illicit acquisition and/or use of card information and the personal identification number (PIN).

The emerging technology in payment card systems means that offenders are constantly seeking innovative ways to commit card fraud. Typically card and PIN details are obtained either through cyber crime, ATM machines and more recently, EFTPOS terminals and mobile phone devices.

According to a recent Nilson Report study, 47 percent of global credit and debit card fraud occurs in the U.S., even though the nation generates just 27 percent of the world's transactions. The high level of debit and credit card fraud in the United States also impacts other countries.

In the Republic of Belarus there are twenty-four banks issued plastic cards. As of 1 April 2016 Belarus had approximately 12.4 million cards in circulation, i.e. more than 1 card per capita. At the beginning of this year every fourth payment in Belarus is made using cards.

Due to the lower number of payment instruments in our country, the problem of plastic card fraud is not so important yet, however, the level of crimes related to credit cards is growing.

Belarus is set to increase the share of noncash payments to 40% of total retail turnover by 2021 that may affect the amount of crimes concerned with plastic cards.

There are many antifraud tools used by the payment card industry. Among them artificial neural networks which are sophisticated computer programs that help to identify transactions that may be fraudulent.

International fraud prevention measures appear to vary based on the level and type of fraud in each country. The implementation of Chip and PIN technology in many countries, for example, has caused geographical displacement (e.g. from one country to another) and tactical displacement (e.g. from skimming/counterfeit card fraud to online card fraud) of credit card fraud. Countries such as the United Kingdom and the United States have improved their fraud prevention strategies by enhancing their coordination between the public and private industry.

To sum up, the financial industry and law enforcement are currently investing in strategies to reduce card fraud and identify and prosecute offenders. However, these strategies need to be continually evaluated for their effectiveness in the current situation and there may be an opportunity to build on them.