The main reason for this system being stable is the low level of banking institutions and governmental bodies controlling the financial sector in developing countries. All attempts to bring hawala to the surface face the resistance of locals, due to traditions and commercial benefit. For a large part of the population of poor countries remittances from relatives working in the wealthy West are the only source of income. What concerns legalization of hawala it will make this system more expensive, and as a result it will have a negative impact on the standard of living of the poorest people.

V.A.Konetsky, M.A.Lezhaiko Research supervisor – L.V. Bedritskaya BSEU (Minsk)

## NEURAL NETWORKS IN BUSINESS

Artificial neural networks (ANN) are parallel information processing systems consisting of a number of simple neurons, organized in layers and connected by links.

For a serious, thinking trader, neural networks are a next-generation tool with great potential, most suitable for solving problems that are complex, ill-defined, highly nonlinear, of many and different variables that other methods of technical analysis are unable to uncover.

Neural networks take a different approach to problem solving than that of conventional computers. Conventional computers follow a set of instructions in order to solve a problem. But computers would be so much more useful if they could do things that we don't exactly know how to do.

Unlike conventional computers, ANNs have the following advantages:

1) can learn things and make decisions in a humanlike way;

2) advanced enough to detect any complex relationships between inputs and outputs and the regularity of situation development is unknown;

3) treat super complicated problems, in which there are too many variables, using even incomplete and internally inconsistent input information.

4) the internal parallelism allows virtually limitless increase of the network's capacity

35

However, the difficulty in using neural networks is that they require correctly selected inputs to work efficiently.

What does a neural network consist of and how do they work? A typical neural network consists of from a few hundreds to even millions of artificial neurons. Input units are designed to receive various forms of information from the outside world that the network will attempt to learn about. Output units sit on the opposite side of the network and signal how it responds to the information it's learned. In between are one or more layers of hidden units, which, together, form the majority of the artificial brain. The connections between one unit and another are represented by a number called a weight, which can be either positive (if one unit excites another) or negative (if one unit suppresses another). The higher the weight, the more influence one unit has on another. This corresponds to the way actual brain cells trigger one another across tiny gaps called synapses.

Information flows through a neural network in two ways. When it's learning (being trained) or operating normally (after being trained), patterns of information are fed into the network via the input units, which trigger the layers of hidden units, and these in turn arrive at the output units. This common design is called a feedforward network.

Neural networks have been used increasingly in a variety of business applications. The major fields are financial operations, enterprise planning, trading, business analytics and product maintenance.

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.

36

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.

## Shyshko, V., Rymzha, V. Research supervisors: L. Vasilevskaya, J. Vashkevich BSEU (Minsk)

## TIED AID AS A FINANCIAL STRATEGY

Financial strategies are used all over the world by international businesses to influence and even enslave countries. Tied aid is that which is given on the condition that the beneficiary uses it to purchase goods and services from suppliers based in the donor country. This aid may be tied in four ways: to payments, projects, policies and procurements. It is primarily used to finance infrastructure projects, with recipients usually being developing and transition economies.

Tied aid is basically meant for promoting the interests of the aid-giver. It can be beneficial for the aided country only under some special circumstances, for instance, the volume of a soft loan is adequate, timely, and on an assured long term basis.

Nowadays International organizations such as the International Monetary Fund (IMF) and the World Bank, while publicly professing to "save" suffering countries and economies, instead pull a bait-and-switch on their governments: promising startling growth, gleaming new infrastructure projects and a future of economic prosperity - all of which would occur if those countries borrow huge loans from those organizations. Far from achieving runaway economic growth and success, however, these countries fall victim to a crippling and unsustainable debt burden instead.

The countries, which possess resources, are more likely to be provided with the aid. These resources can take many different forms: the material resources like minerals