Data Analytics Application Bancomer

CS5056 Data Analytics

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Bancomer

- Antecedents
- Banks expropiation – 1982
- Banks privatization – 1992
- Bancomer and Tec de Monterrey
- Collaboration agreement 1992

Bancomer

- Forecast cash allocation in 1600 ATMs

- Short allocation of funds in ATM represents bad customer service

- Excess allocation of funds in ATM represents an important financial cost for having money not generate interest

- Problem definition

Bancomer

Business Problem (As of 1993):

- Cash machines (ATM) running out of money: 5% of ATMs
- Financial cost of undelivered money: 3 out of each peso withdrawn remain idle

Business Goal:

- 2.5% of ATMs running out of money
- 2 out of each peso withdrwan remain idle

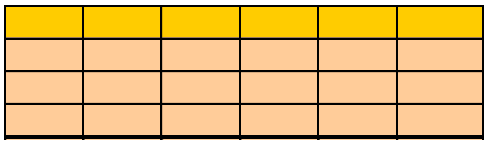
BBVA Bancomer

Methodology

ATM Network

DB

Data Preparation



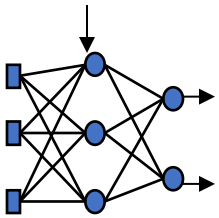
DM Table

Prediction per ATM and day

Results

Scheduling

Building Kohonen Neural Network



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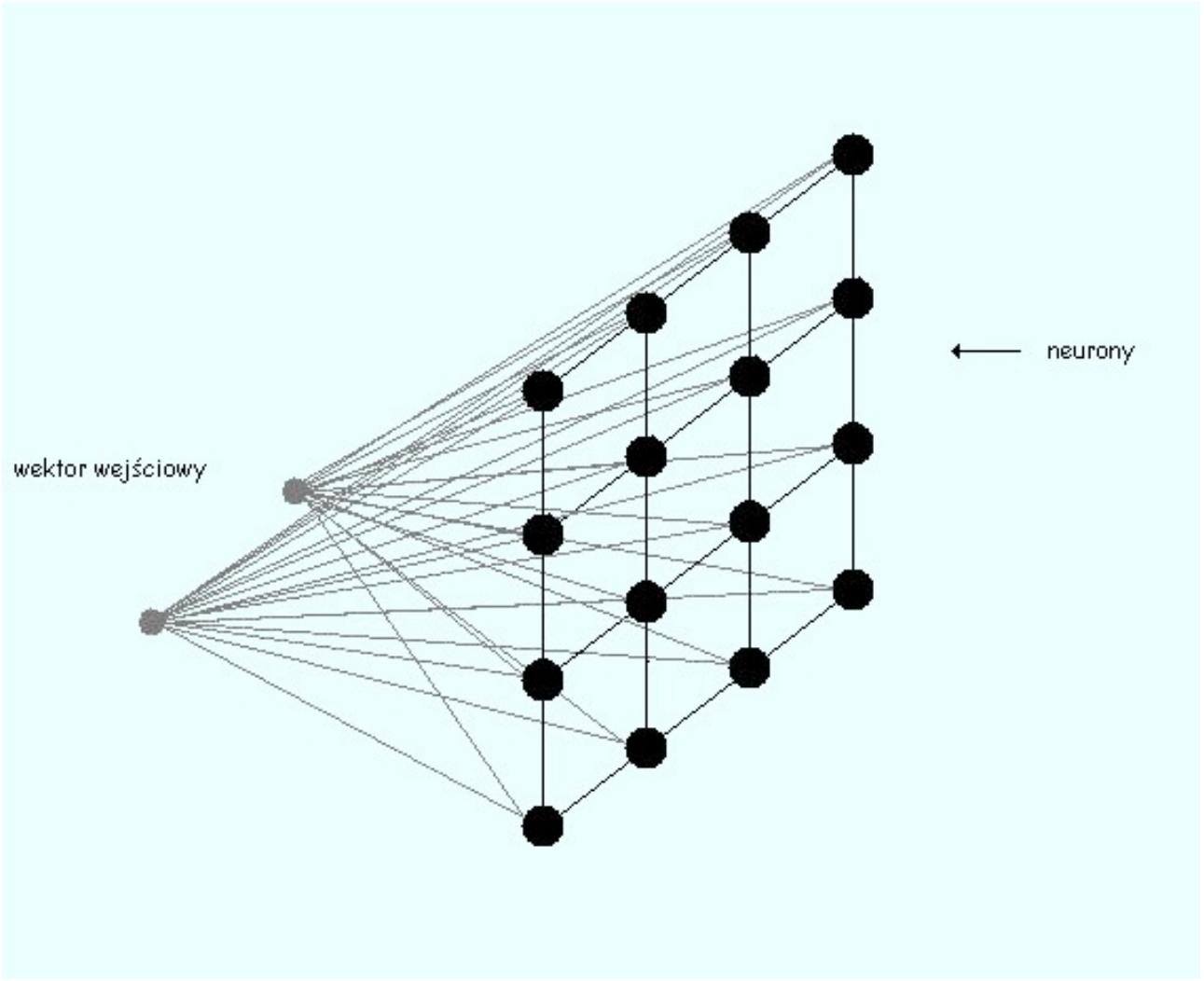
NN Prediction

Use of NN

Kohonen Self-Organizing Maps



2-D map of neurons

Kohonen Self-Organizing Maps

- Kohonen's networks are one of basic types of self-organizing neural networks.
- The ability to self-organize provides new possibilities - adaptation to formerly unknown input data. It seems to be the most natural way of learning, which is used in our brains, where no patterns are defined.
- Those patterns take shape during the learning process, which is combined with normal work.
- Kohonen's networks are a synonym of whole group of nets which make use of self-organizing, competitive type learning method.
- We set up signals on net's inputs and then choose winning neuron, the one which corresponds with input vector in the best way.
- Precise scheme of rivalry and later modifications of synapthic wages may have various forms. There are many sub-types based on rivalry, which differ themselves by precise self-organizing algorithm.

Bancomer

Results

- 2 out of each peso withdrawn remained idle
- 1.5% of ATMs ran out of money
- Benefit: Many million pesos saved between 1995 to date

Conclusions

Results were quite satisfactory for Bancomer

The Cash supply Prediction system was deployed and put into operation in about 1600 ATMs

This project opened the door to other Applied Research AI projects between Bancomer and Tec de Monterrey

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