# INTELLIGENT DECISION SUPPORT SYSTEMS AND NEUROSIMULATORS: A PROMISING ALLIANCE FOR FINANCIAL SERVICES PROVIDERS

Michael H. Breitner, Frank Köller, Simon König, Hans-Jörg von Mettenheim
`{breitner|koeller|koenig|mettenheim}@iwi.uni-hannover.de`
Institut für Wirtschaftsinformatik, Königsworther Platz 1, 30167 Hannover
`http://www.iwi.uni-hannover.de`
Leibniz Universität Hannover
Germany

## Abstract

*Today self-organization and automatic usage of Artificial Neural Networks (ANN) are common in various applications for financial services providers. We analyze typical advantages and disadvantages of ANN and discuss the question: For which tasks ANN applications are most promising? We show that Intelligent Decision Support Systems (IDSS) based on ANN and Neurosimulators can support today's complex decision processes, e. g., investments or operation of a customer contact/call center. The focus is on supervised learning, here: ANN are trained with patterns from well-understood decision processes in the past. Then these ANN can benchmark a posteriori, forecast a priori or transfer knowledge to similar or analogous decision processes. Often efficient supervised learning needs advanced optimization algorithms, thin client solutions and low budget high performance computing, i. e. grid computing. Computations are realized with the neurosimulator FAUN (Fast Approximation with Universal Neural Networks), which is developed by the authors since the mid 1990's. We shortly present a long-term ANN interest rate forecasting model first. Then an ANN option/warrant market-pricing model and an ANN human-resource allocation model for contact/call centers are outlined briefly.*

*Keywords: Intelligent Decision Support Systems, Artificial Neural Networks, neurosimulator, forecasting model, option pricing, contact/call centers*