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Enterprise Applications, Markets and Services in the Finance Industry

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Revised Papers

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Preface

Advancements in information and communications technology have paved the way for new business models, markets, networks, services, and players in the financial services industry. In the interest of further research advancements in this field of study, we organized FinanceCom 2016 in Frankfurt to help us understand, develop, and utilize the underlying systems, technologies, challenges, and opportunities. We invited leading academics from a broad range of disciplines, including computer science, business studies, media technology, and behavioral science, to discuss recent advances in their respective fields. This workshop also welcomed cross-disciplinary research work stemming from different backgrounds.

FinanceCom is part of an extremely successful workshop series that has taken place in different locations throughout the world, such as Regensburg (2005), Montreal (2007), Paris (2008), Frankfurt (2010), Barcelona (2012), and Sydney (2014). Its recent proceedings have been published as part of Springer's *Lecture Notes in Business Information Processing (LNBIP)* in order to reach a widespread audience. All papers accepted for inclusion have undergone a double-blind peer review process with subsequent mandatory revisions.

The 2016 workshop in Frankfurt was especially devoted to "The Analytics Revolution in Finance." Hence, submissions from the following areas of research were particularly welcomed:

Networks and business models

- Technology-driven transformation of the financial industry: - towards banking value networks
- Business process outsourcing/offshoring and information systems
- New e-finance business models enabled by IT
- New bank business models and challenges in a post-financial crisis
- Approaches to evaluating operational and credit risks as well as banking and market performance

Financial markets

- Electronic markets design and engineering
- Algorithmic and high-frequency trading/post-trading systems and infrastructures
- Analysis of intraday market data and news
- Regulation of electronic financial markets (e.g., MiFiD, EMIR or Dodd-Frank)
- Private equity and venture capital investments

IT and implementations

- Role of new technologies (e.g., Web services, cloud, big data, and grid computing)
- Implementation experiences and case studies
- Enabling decision support systems in banking and financial markets

- Enterprise communication in banking and financial services
- Interoperability of heterogeneous financial systems and evolving international standards

"New" emerging digital and virtual financial markets

- Virtual currencies (Bitcoin, Amazon, etc.)
- Alternative banking, loan, and financial market models
- New customer contact trends
- Crowdfunding, crowdsourcing, and B2B/B2C social media
- Loyalty card and smart card markets
- New banking and payment trends
- Banking, payments, and currencies in emerging countries

Conference theme: "The Analytics Revolution in Finance"

- Algorithms for automated and high-frequency trading
- Novel analytics approaches to risk modeling, e.g., Bayesian learning
- Utilizing big data for applications in finance
- Machine learning to support decision-making in financial markets
- New methodological approaches to deriving empirical results in finance research

Here, we provide a brief overview of the accepted publications.

- In their work "News Sentiment Impact Analysis (NSIA) Framework," Islam Qudah and Fethi A. Rabhi develop a system for news analytics activities. Their underlying goal is to quantify the impact of news sentiment from an arbitrary domain on the stock market. This work presents a combined approach that covers models, processes, and a corresponding software architecture.
- Ali Behnaz, Aarthi Natarajan, Fethi A. Rabhi, and Maurice Peat develop a semantic ontology for statistical learning. Their paper, "A Semantic-Based Analytics Architecture and Its Application to Commodity Pricing," demonstrates the ontology's capabilities in a case study in commodity pricing. The work thereby contributes to the standardization and model-driven work flow in data science.
- Qudamah Quboa, Brahim Saadouni, Azar Shahgholian, and Nikolay Mehandjiev suggest a path toward increasing underwriter profitability as part of their paper "Detecting Underwriters Stabilization Trades: A Clinical Study." In their study, the authors investigate the stabilization of shares in two large stock exchanges with the help of high-frequency tick data. Their empirical results provide an estimate of the profit from those trades.
- Petr Hajek, Vladimir Olej, and Ondrej Prochazka present the manuscript entitled "Predicting Corporate Credit Ratings Using Content Analysis of Annual Reports – A Naïve Bayesian Network Approach," wherein the authors utilize the financial statements of corporations in order to predict their credit ratings. For this purpose, they use naïve Bayesian network and latent semantic analysis in order to signal a low credit rating.

- Dorina Palade, Simon Alfano, and Dirk Neumann investigate the timing of corporate disclosures in their paper "Say It at the Right Time: Publication Time of Financial News." Since companies have the freedom to schedule the release of disclosures, their timing can provide valuable information regarding the content of the message and subsequent stock market returns.
- Liudmila Zavolokina, Mateusz Dolata, and Gerhard Schwabe prepared the manuscript on "FinTech Transformation: How IT-Enabled Innovations Shape the Financial Sector." This publication investigates the FinTech phenomenon from the perspective of information technology based on a collection of Swiss companies. Their results provide insights into the nature of FinTech innovations and outline the need for future research in this field of study.
- Florian Förschler and Simon Alfano examine the predictive relationship between financial news and the stock market as part of their work "Reading Between the Lines: The Effect of Language on Economic Indicators." For this purpose, they create a sentiment index based on ad hoc announcements and measure the directional influence based on Granger causality tests.
- Niklas Arvidsson, Jonas Hedman, and Björn Segendorf elaborate on "Cashless Society: When Will Merchants Stop Accepting Cash in Sweden—A Research Model." They suggest a research approach by which to study why shops accept or reject cash in Sweden, where it is left to the shop owners to choose which forms of payment they will accept. This can help to better understand potential shifts toward cashless payments in the future.
- Erika Matsak's "Credit Scoring and the Creation of a Generic Predictive Model Using Countries' Similarities Based on European Values Study" presents a data science approach to classifying credit scores. Here, the author studies transnational similarities and describes the benefits of using the generic predictive model in practice.

We would like to thank Peter Gomber and Florian Glaser (both of the University of Frankfurt, Germany) as part of the local organization team. In addition, we are grateful for the extraordinary work of all reviewers, authors, as well as the Program Committee.

If you are interested in joining this community centered around the study of financial markets, please feel free to join our mailing list or browse through the workshop website. To post to the e-mail list, please use the following address: finance-com@ambientmediaassociation.org; if you would like to subscribe to the e-mail list, please visit the following website: http://mail.ambientmediaassociation.org/mailman/listinfo/financecom_ambientmediaassociation.org.

November 2016   Stefan Feuerriegel
                                                                         Dirk Neumann

Organization

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