

Introduction to the HICSS-52 Minitrack: Business Intelligence, Business Analytics and Big Data - Innovation, Deployment and Management

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Recent developments in the combined business intelligence (BI), business analytics (BA) and big data space has given rise to new opportunities for individuals, organizations and society. Due to ongoing digitization, digital transformation and datafication, organizations are facing various challenges, covering the whole life cycle of BI/BA/big data applications and projects.

The emerging trends such as the internet of things, machine learning and cognitive analytics encourage, but also urge companies to identify new use cases, applications and business models taking advantage of (big) data and analytics. To close the gap between potential and real benefits of BI/BA/big data more research on their deployment is needed in terms of artifacts such as methods, reference architectures, etc. as well as theoretical and conceptual underpinnings. Operations and continuous enhancement of BI/BA/big data applications also encompass management tasks related to strategic, economic, legal and ethical issues.

Meanwhile, there is an ongoing major shift in the industry of organizations leveraging pervasive, self-service analytics. The push for self-service analytics, which include a portfolio of analysis tools, algorithms and visualizations, has enabled agile decision making through effective business insights. The growth in this space has also led to important societal implications – both positive and negative. Starting from a rich historic advancement in decision support systems, and more recently big data, internet of things, machine learning and cognitive analytics, this research space continues to present a wide variety of research questions and challenges for researchers to explore.

Now in its 29th year, this remains the longest running HICSS minitrack related to business intelligence, business analytics and more recently big data. Its main focus remains on the organizational issues of BI/BA/big data implementations, rather than the data science and IT perspectives. This year's special emphasis on innovation, deployment and

management reflects the maturity of our collective research and practice.

This year's minitrack includes the following six research papers:

- The opening exploratory essay by **Williams, Hardy, and Nitschke** focuses on the relationship between Internet of Things (IoT) and big data analytics. Drawing from multidisciplinary literature, the authors characterize IoT as a complex multi-level phenomenon that encompasses much more than technical features. Such a novel characterization of IoT creates important implication IoT-related governance as well as responsible research and innovation, also discussed in the paper.

- The second paper by **George, Yan, and Leidner** introduces a new research topic to this minitrack that is data philanthropy. The authors unpack this new phenomenon and illustrate it by examples and case studies. Using the theoretical lens of the resource-based view of the firm, the authors explain how data philanthropy differs from more traditional corporate philanthropy. They propose that data can be shared for social good without harming the firm and may even result in unforeseen benefits.

- Focusing on the challenge of interconnectivity of Big Data sources, **Weibl** explores enablers, mechanisms, and potential outcomes of synergistic interactions among data sets. The paper offers an initial synergy framework that was validated through subsequent qualitative interviews.

- **Wache, Dinter, and Kollwitz** recognize important challenges related to applying business analytics to mass customization (MC) in manufacturing. Using design science research, the authors offer a process approach to identifying potential analytics use cases for MC. The resulting artifact provides a comprehensive view of a generic MC process, including information flows. As such it opens future opportunities for manufactures to apply analytics in order to optimize current MC processes as well as design novel business models in the future.

- **Weiler, Matt, and Hess** focus on self-service business intelligence (SSBI), in particular the challenges related to user uncertainty during implementation of this technology. Through thematic analysis of data collected from 15 semi-structured interviews with the current users of SSBI, the authors develop a thematic map visualizing user uncertainties. The map revealed three important areas for future research: work routine change, social dynamics and fear of AI.

- The final paper by **Ul-Ain, Vaia and DeLone** offer a systematic literature review of business intelligence adoption, utilization and success. Although BI is a well-established topic, new literature reviews remain important as BI applications continue to diversify with new types of data and domains. The study confirms the key challenges of user under-utilization and resistance and calls for more research on user-centered issues.

We trust that you will find this year's selection of very diverse papers interesting and relevant. We also hope that you will continue to support this minitrack for many years to come, through submissions of relevant, rigorous and thought-provoking papers, constructive reviews, and a very unique community spirit of HICSS' Ohana.