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Introduction to the Minitrack on towards the future of enterprise systems

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HICSS-55: Minitrack Introduction "Towards the Future of Enterprise Systems"

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Abstract

Enterprise systems have long played an important role in businesses of various sizes. With the increasing complexity of today's business relationships, specialized application systems are being used more and more. Moreover, emerging technologies such as artificial intelligence are becoming accessible for enterprise systems. This raises the question of the future role of enterprise systems. This minitrack covers novel ideas that contribute to and shape the future role of enterprise systems with five contributions.

1. Introduction

Enterprise systems have long played an important role in businesses of various sizes. With the increasing complexity of today's business relationships, specialized application systems are being used more and more. Moreover, the digital transformation, as well as the further development of existing products and services, set new requirements to the dominating class of enterprise systems. Moreover, emerging technologies such as artificial intelligence are becoming accessible for enterprise systems and entail new requirements. This raises the question of the future role of enterprise systems. In particular, the integrative, all-encompassing approach of early system versions is in question.

For ERP systems to continue to fulfill their essential role, the systems must adapt to the new needs of organizations and respond to the technological advancements in the market. So far, research on ERP systems to a great extent focuses on the implementation and post-implementation phase and corresponding critical success factors. While this lifecycle-oriented perspective is of great importance for practice, problems related to the architectural design of current-generation ERP systems are of minor importance in previous considerations. From an architectural perspective, this requires adaptations at all major architectural levels of ERP systems layers. From an organizational perspective, new solutions for technical integration and interoperability are needed. With regards to the selection and implementation process, new topics such as cloud-based operation models increase the complexity of decision-making.

2. Contributions

The minitrack contributes to the future role of enterprise systems by addressing different challenges as well as future potentials related to the broader domain of enterprise systems. With 7 submissions, the minitrack has received widespread attention. The overall high quality of all submissions resulted in five final papers being accepted for presentation.

The paper *Trends in Academic and Industrial Research on Business Process Management - A Computational Literature Analysis* uses a computational analysis to provide insights in recent trends and topics in Business Process Management (BPM). Over 1200 papers were used from the International Conference on Business Process Management as an outlet that focus on novel ideas in the domain of BPM with a focus on the academic and industrial domain. Results in the paper are provided for each domain. The results provide insights from metadata and content aspects regarding the analysis. The evaluation of topics over time as well as emerging topics.

The paper *Design Principles for Machine Learning Marketplaces in Enterprise Systems* develops a taxonomy for machine learning implementations in the context of enterprise systems. In contrast to typical functional-related extensions in enterprise systems, decision models and machine learning applications are of different nature and must be considered accordingly. Through the integration of ML marketplaces related specialties could be addressed accordingly. Through interviews with 11 experts, insights into the successful design of ML marketplaces are gathered. Based on that, meta requirements are derived. The authors propose an ML marketplace using a federated learning approach.

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With the contributions, the authors provide the basis for standardized integration of ML marketplaces in the enterprise system landscape.

The paper *A Taxonomy of Challenges for Cloud ERP Systems Implementation* provides a holistic view of the challenges for implementing cloud-based enterprise systems. While the implementation of enterprise systems is a complex task for companies from a technical and organizational perspective, the challenges in implementing cloud enterprise systems are of specific nature. The contribution identified over 30 challenges which are classified in technical, operational, and strategical challenges. With the dedicated focus on challenges in implementing cloud ERP, the paper contributes to the their successful implementation.

The paper *Designing Informal EAM Interventions – A Complementary Approach for Managing Enterprise Architecture Complexity* classifies the group of informal Enterprise Architecture Management Interventions. In contrast to formal EAM interventions, the group of informal interventions is not widely covered in the literature. Informal interventions serve as a counterpart to the formal EAM governance. Informal interventions usually involve the deviation from existing company-wide standards. The identified interventions are exemplarily illustrated using two projects with large enterprises.

The paper *Nested Configurations of Interorganizational Information Systems: Observations in the German Furniture Industry* provides insights into the configuration of inter-company processes. The process integration across companies is still not fully realized yet digital infrastructures and enterprise systems exist. The paper illustrates this using the German furniture industry with the segments of kitchen and upholstery examples. Focusing on the industry level different configurations and characteristics are compared and explained.

3. Outlook

The papers of the minitrack illustrate the different facets of challenges enterprise systems have to face to maintain their importance. The combination of papers provides a contribution to shaping the future role of enterprise systems. We would like to thank the authors for their valuable contributions. We appreciate the interest in the minitrack and the discussion on the future role of enterprise systems. We are looking forward to designing the future role of enterprise systems.