2021 IEEE 23rd Conference on Business Informatics (CBI 2021)

Virtual Conference 1-3 September 2021

Volume 1 Pages 1-211



IEEE Catalog Number: CFP21231-POD **ISBN:**

978-1-6654-2070-9

Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

IEEE Catalog Number:	
ISBN (Print-On-Demand):	
ISBN (Online):	
ISSN:	

CFP21231-POD 978-1-6654-2070-9 978-1-6654-2069-3 2378-1963

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400 Fax: (845) 758-2633 E-mail: curran@proceedings.com Web: www.proceedings.com



2021 IEEE 23rd Conference on Business Informatics (CBI) CBI 2021

Table of Contents

Message from the General Chairs and Program Chairs	viii
Organizing Committee	x
Program Committee	xi
Steering Committee	xii
Additional Reviewers	
Keynotes	. xiv

Session I: Information Systems Engineering and Business Process Management

Team Resource Management Decisions in Software Development Projects Magne Jørgensen (Simula Metropolitan Center for Digital Engineering, Norway)
Decent: An Ontology for Decentralized Governance in the Renewable Energy Sector
Are Individual Mindfulness and Stewardship Climate Success Factors for Digital Transformation Projects? 21 Maik Dehnert (University of Potsdam) and Bennet Santelmann (University of Potsdam) 21
Business Process Model Plasticity: Measuring the Capacity to Redesign Prior to Implementation
Quantitative Deadlock Analysis in Petri Nets Using Inconsistency Measures
Checklist-Based Support of Knowledge Workers in Robotic Process Automation Projects 52 Judith Wetwerka (Ulm University, Germany) and Manfred Reichert (Ulm University, Germany)

Session II: Enterprise Modeling, Engineering and Architecture

Attributes Relevant to Antifragile Organizations	62
Edzo Botjes (Xebia, The Netherlands), Martin van den Berg (Hogeschool	
Utrecht, The Netherlands), Bas van Ĝils (Strategy Alliance, The	
Netherlands), and Hans Mulder (Antwerp Management School, Belgium)	

2
2
2

Session III: Business Innovations and Digital Transformation

Accelerating the Transformation? The Impact of COVID-19 on the Digital Maturity of Retail Businesses)2
Requirements for Digital IT Consulting Services and Their Provision Through Digital Consulting Platforms - Results from a Focus Group Study	1
A Review of Digital Maturity Models from Adaptive Enterprise Architecture Perspective: Digital by Design	21
Industrial Corporation's Transformation into a Digital Platform Provider: A Case Study on Enablers 13 Lara Riefle (Karlsruhe Institute of Technology, Germany), Marcel 13 Eisold (Karlsruhe Institute of Technology, Germany), and Carina Benz (Karlsruhe Institute of Technology, Germany)	31
 How DevOps Capabilities Leverage firm Competitive Advantage: A Systematic Review of Empirical Evidence	1 1
Governance and Communication of Algorithmic Decision Making: A Case Study on Public Sector 151 Eric Jonk (Open Universiteit, the Netherlands) and Deniz Iren (Open	r.

Universiteit, the Netherlands)

Session IV: Artificial intelligence for Business, and Data-Driven Business Analytics and Applications

A Conceptual Framework for Applying Artificial Intelligence in Project Management
Improving Process Discovery Results by Filtering Out Outliers from Event Logs with Hidden 171 Markov Models 171 Zhenyu Zhang (San Diego State University, USA), Ryan Hildebrant (San 171 Diego State University, USA), Fatemeh Asgarinejad (San Diego State 171 University, USA), Nalini Venkatasubramanian (University of California, USA), and Shangping Ren (San Diego State University, USA) 171
Improving the Data Management Capability at a Dutch Pension fund Service Provider
 "Ideation is Fine, but Execution is Key": How Incumbent Companies Realize Data-Driven Business Models
Conceptualizing Data Ecosystems for Industrial Food Production

Author Index	211
	 ••••••••••••••••••••••••••••••••••

2021 IEEE 23rd Conference on Business Informatics (CBI 2021)

Virtual Conference 1-3 September 2021

Volume 2 Pages 1-207



IEEE Catalog Number: CFP21231-POD **ISBN:**

978-1-6654-2070-9

2021 IEEE 23rd Conference on Business Informatics (CBI) CBI 2021

Table of Contents

Message from the General Chairs and Program Chairs	ix
Organizing Committee	xi
Program Committee	xii
Steering Committee	xiii
Additional Reviewers	
Message from the Workshop Chairs	xv
Message from the ITSS Chairs	xvi
Message from the TEAR Chairs	xvii
Message from the VEnMo Chairs	xviii
ITSS Committee	xix
TEAR Committee	xx
VEnMo Committee	xxii

CBI Forum Session I: Industry 4.0, and Business Process Management

Towards a Reference Architecture for Future Industrial Internet of Things Networks
Towards a Comprehensive Methodology for Modelling Submodels in the Industry 4.0 Asset
Administration Shell
Cornelis Bouter (TNO, The Netherlands), Monireh Pourjafarian (DFKI, Germany), Leon Simar (VDL Industrial Modules, The Netherlands), and Robert Wilterdink (TNO, The Netherlands)
A Training Concept Based on a Digital Twin for a Wafer Transportation System
A Mass Customization Approach to Business Process Modularization

Modelling Production Workflows in Automotive Manufacturing39Simone König (Technical University of Munich, Mercedes-Benz AG,39Germany), Birgit Vogel-Heuser (Technical University of Munich,39Germany), Etienne Fieg (Technical University of Munich, Germany),39Michael Hahn (Mercedes-Benz AG, Germany), and Oliver Kopp39(Mercedes-Benz AG, Germany)39
Challenges and Potentials of Order-Specific Individual Manufacturing: A Case Study from Tool Making
Lea Mayer (German Research Center for Artificial Intelligence and Saarland University, Germany) and Peter Fettke (German Research Center for Artificial Intelligence and Saarland University, Germany)
CBI Forum Session II: Artificial Intelligence, and Data-Driven Business Analytics and Applications
Inside the Black box: Using Explainable AI to Improve Evidence-Based Policies
Share of Toxic Comments Among Different Topics: The Case of Russian Social Networks 65 Sergey Smetanin (National Research University Higher School of Economics, Russia) and Mikhail Komarov (National Research University Higher School of Economics, Russia)
Predicting the Distress of Financial Intermediaries Using Convolutional Neural Networks71 Stacey Taylor (Dalhousie University, Canada) and Vlado Keselj (Dalhousie University, Canada)
Data-Driven Business Analytics for the Tourism Industry in the UK: A Machine Learning
Experiment Post-COVID 78 Johnson Uke Obogo (Bournemouth University, United Kingdom) and Festus 78 Fatai Adedoyin (Bournemouth University, United Kingdom) 78
 Recommender Systems for Capability Matchmaking
Exploring the Effects of Internet Memes in Social Media Marketing Through A/B Testing

CBI Forum Session III: Enterprise Architecture and Information Systems Engineering (incl. TEAR and VEnMo workshop papers)

Automation of Enterprise Architecture Discovery Based on Event Mining from API Gateway Logs: State of the Art Carlos Roberto Pinheiro (Universidade de Trás-os-Montes e Alto Douro, Portugal), Sérgio Guerreiro (Universidade de Lisboa, Portugal), and Henrique São Mamede (Universidade Aberta, Portugal)	. 117
An ArchiMate-Based Approach to ISO 9001:2015 Quality Management: Shifting to IT-Enabled Documented Information Ana Pereira (University of Coimbra, Portugal), Rui Henriques (Instituto Pedro Nunes, Portugal), and João Barata (University of Coimbra, Portugal)	125
Determining Enterprise Architecture Smells from Software Architecture Smells Benny Tieu (KTH Royal Institute of Technology, Sweden) and Simon Hacks (University of Southern Denmark, Denmark)	134
Towards a Systematic Socio-Intentional Framework for Agile Methods Tailoring Soreangsey Kiv (UCLouvain, Belgium), Samedi Heng (Université de Liège, Belgium), Yves Wautelet (KULeuven, Belgium), and Manuel Kolp (UCLouvain, Belgium)	143
From Service-Orientation to Agile Development by Conceptually Linking Business IT Services and User Stories: A Meta-Model and a Process Fragment	

International Workshop on the Internet of Things and Smart Services - ITSS 2021

Development Biometric IoT Access Control System for Employees at the Example of KazPost	
Branch	2
R. K. Uskenbayeva (International IT university Almaty, Kazakhstan), A.	
A. Kuandykov (International IT university Almaty, Kazakhstan), A. A.	
Kuatbayeva (International IT university Almaty, Kazakhstan), A. B.	
Kassymova (International IT university Almaty, Kazakhstan), G. K.	
Kuatbayeva (ISDR, Almaty, Kazakhstan), B. K. Zhussipbek (Akhmet	
Yassawi International Kazakh-Turkish university Turkestan,	
Kazakhstan), and Zh. Khamzina (International IT university Almaty,	
Kazakhstan)	

Author Index		
--------------	--	--