Daily Schedules

MONDAY, AUGUST 5, 2024

	00 Pavilion	01 Pavilion East	02 Pavilion West	03 Broadway-I	04 Broadway-II	05 Broadway-III	06 Broadway-IV	07 Park
MA 08:30-10:00	Plenary I							
MB 10:30-12:00		AI in Technology Management-1	R&D Management-1	Technology Forecasting and Evaluation	Decision Making in Technology Management		Enterprise Management	
MC 12:00-14:00	**LUNCH**							
MD 14:00-15:30		AI in Technology Management-2	R&D Management-2	Educational Issues-1		Emerging Technologies	Systems Approach	Sustainability-1
ME 16:00-17:30			Innovation Management-1	Educational Issues-2		Project & Program Management	Technology Management in the Health Sector	Sustainability-2

TUESDAY, AUGUST 6, 2024

	00 Pavilion	01 Pavilion East	02 Pavilion West	03 Broadway-I	04 Broadway-II	05 Broadway-III	06 Broadway-IV	07 Park
TA 08:30-10:00	Plenary II							
TB 10:30-12:00		AI in Technology Management-3	Innovation Management-2		Technology Management in the Biotechnology Sector-1	Convergence of Technologies-1		Quality Management-1
TC 12:00-14:00	**LUNCH**							
TD 14:00-15:30				Collaboration and Competition in Technology Management-1		Technology Adoption-1	Technology Management in the Energy Sector	Manufacturing Management
TE 16:00-17:30		AI in Technology Management-4	Innovation Management-3	Collaboration and Competition in Technology Management-2	Strategic Management of Technology-1	Technology Adoption-2		Supply Chain Management

industry employ to restructure their business model portfolios for sustainability. Through a longitudinal qualitative analysis of a specific case, we have identified both intra- and inter-complementarities among customers and business models within the portfolio. Furthermore, we have highlighted strategic intents and the rationales behind each business model, offering insights into the complexities of managing business model portfolios in a dynamic industry context.

MB-06.2 [R] • The Strategy and Its Evolution Trajectory of Product Innovation and Servitization: An Empirical Study of Manufacturing SMEs in Taiwan

Bang-Ning Hwang; National Yunlin University of Science & Technology, Taiwan
Ying-Zhen Chen; National Yunlin University of Science & Technology, Taiwan

Product innovation has been a crucial strategy for manufacturing companies. However, drastic changes in the global economy have led to declining profits from products alone. In response, modern manufacturers have embraced the "servitization" strategy, combining product and service innovations to enhance sales opportunities. Previous research primarily focused on the relationship between product innovation and servitization in large manufacturing enterprises, neglecting small and medium enterprises (SMEs), despite certain SMEs excelling in implementing these strategies. To address this research gap, this study conducted a large-scale empirical investigation to explore the strategies of product innovation and servitization, as well as their evolutionary trajectory. The study analyzed 96 manufacturing companies that received the Taiwan SME Innovation Research Award over the past decade. It identified four distinct strategies based on the innovativeness level of product innovation and the extent of value-added services, uncovering two levels of evolutionary trajectory and associated progression patterns among SMEs. Furthermore, the research examined the impact of industry sector differences on the evolutionary trajectory of SMEs. This study offers a dual contribution: academically, addressing the previously understated role of SMEs in the context of product innovation and servitization; practically, providing valuable reference models for SMEs seeking to implement these strategies.

MB-06.3 [R] • How Does the Synergy between Technical Standards and Intellectual Property Rights Affect the Digital Transformation of the Automotive Industry? Empirical Evidence from China

Liying Wang; Zhejiang University of Technology, China
Peiling Yu; Zhejiang University of Technology, China
Ying Wu; Zhejiang University of Technology, China
Lingxiang Cai; University of Illinois Urbana-Champaign, United States
Wenxin Xie; Zhejiang University of Technology, China
Jia Wen; Zhejiang University of Technology, China

The intensification of technological competition induced by digital technologies has underscored the significance of technical regulations and innovation systems, influencing the process of digital transformation in industries through the synergistic development trend of technical standards and intellectual property rights. This study focuses on the Chinese automotive industry, utilizing data from 155 Chinese listed automotive companies from 2016 to 2021 to analyze the impact and mechanism of action of the synergy between technical standards and intellectual property rights on digital transformation. The findings reveal that the synergy between technical standards and intellectual property rights exerts an impact on digital transformation, displaying an "inverted U-shaped" curve effect. The influence of this synergy on new energy automotive companies and autonomous automotive companies is lower compared to non-new energy and non-autonomous automotive companies. Open innovation plays a partial mediating role in the impact of the synergy between technical standards and intellectual property rights on digital transformation, while environmental uncertainty exhibits a positive moderating effect in the impact of this synergy through open innovation on digital transformation. We finalize our study by deliberating on how our insights might inform and enhance the practical roadmap for advancing the digital transformation of industries, through the synergy between technical standards and intellectual property rights.

MD-01 AI in Technology Management-1
Monday, 8/5/2024, 14:00 - 15:30
Room: Pavilion East
Chair(s) Jihwan Lee; Pukyong National University

MD-01.1 [A] • A Systematic Approach to Enhance Creativity and Exploration of Potential Applications of Artificial Intelligence

Oliver Yu; San Jose State University, United States
Rainer Hasenauer; Vienna University of Economics and Business, Austria
Christopher Yu; The STARS Group, United States

It has been widely observed that people tend to be less creative as they mature. However, in-depth studies have shown that this phenomenon is not caused by aging but by a variety of psychological barriers, including cognitive rigidity and risk aversion. In this paper, we will systematically examine these barriers and how to overcome them and then explore how artificial intelligence (AI) can be applied to enhance creativity.

MD-01.2 [A] • Value Proposition Design with Artificial Intelligence

Arturo Atl A Rodriguez de la Torre; ITESO AC, Mexico
Gabriela Calvario; ITESO AC, Mexico

Businesses and firms rely strongly on their capacity to articulate and innovate their value proposition. Derived from the empowerment of artificial intelligence to leverage data from the environment and its capacity to analyze language, we present an innovation methodology that encompasses machine learning techniques and the canvas value proposition. Our methodological approach focuses specifically on the operation and design of the value proposition model. This allowed us to demonstrate the feasibility of implementing text mining techniques to support business model innovation. Overall, we introduce a novel approach for managers and innovators to employ artificial intelligence to facilitate the conception of new strategic value propositions. Furthermore, we set a path to do further research on the many ways in which computer sciences through artificial intelligence will reset the way to conceive innovation within organizations.

MD-01.3 [R] • Artificial Intelligence Applications in Ionospheric Irregularities: A Bibliometric Analysis

Alisa Kongthon; King Mongkut's University of Technology Thonburi, Thailand
Pornchai Supnithi; King Mongkut's Institute of Technology Ladkrabang, Thailand

Ionospheric irregularities such as equatorial plasma bubbles (EPBs) in low-latitude regions often lead to disruptions in trans-ionospheric radio systems, navigation systems and satellite communications. Understanding and monitoring equatorial plasma bubbles is important for improving the reliability of communication and navigation systems. Recently, artificial intelligence (AI) has been applied to a wide variety of satellite communication aspects including ionospheric irregularities detection. This paper aims to apply bibliometric analysis on research publications related to AI applications in ionospheric irregularities. Such analysis can help researchers understand the evolving trends in AI and its diverse sub-fields, guiding future research directions. In addition, researchers can use the results of bibliometric analysis to benchmark their own work against the broader research landscape, identifying areas where their contributions can have the most impact.

MD-02 R&D Management-2
Monday, 8/5/2024, 14:00 - 15:30
Room: Pavilion West
Chair(s) Carsten Boßmann; RWTH Aachen University

MD-02.1 [R] • Technology Opportunity Analysis for Creating Innovative Solutions: Applying Semi-supervised Topic Modelling on Patent Data

Jinseob Kim; Seoul National University, Korea, South
Sungjoo Lee; Seoul National University, Korea, South