

technovation

The International Journal of Technological Innovation, Entrepreneurship and Technology Management

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The International Journal of Technological Innovation, Entrepreneurship and Technology Management

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Examines global operations of software development companies from US and India. Indian software companies avoid direct competition with their US counterparts. A comparative analysis provides further insights.	
Innovation diffusion and technology acceptance: the case of PKI technology	847
Elias G. Carayannis and Eric Turner (Washington, DC, USA)	
Proposes a model for security technology adoption and implementation by examining factors affecting adoption and implementation of Public Key Infrastructure technology.	
Consumer acceptance of the internet as a channel of distribution in Taiwan—a channel function perspective	856
Julian Ming-Sung Cheng, Gwo-Ji Sheen and Guan-Cheng Lou (Taiwan, ROC)	
Considers consumer acceptance of the internet as a channel of distribution using a channel function perspective. More specifically consideration is given to information collection, financial payments, and product variety/assortment. Implications of findings are considered.	
Modelling the reasons to establish B2C in the fashion industry	865
Jose L. Salmeron and José M. Hurtado (Seville, Spain)	
Studies the decision of establishing B2C in one of the fashion design business. Cognitive maps are shown to be helpful in the decision making process for identifying the strategic objectives pursued by a firm.	

Double spiral trajectory between, retail, manufacturing and customers leads a way to service oriented manufacturing

Masayo Hobo, Chihiro Watanabe and Chaojung Chen (Tokyo, Japan)

873

Determines the presence of a virtuous cycle between affluence in commodities in sales, productivity and profit with a double spiral trajectory between retailer, manufacturer, and consumer. This leads to the concept of service oriented manufacturing and is supported by a study of Japanese electric/electronic mega retailers (EEMRs).

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Refereed papers

IP and Technology-oriented SMEs

Intellectual property rights business management practices: A survey of the literature

Petr Hanel (Sherbrooke, Quebec, Canada)

895

Considers intellectual property rights in North America, Europe, Japan and Australia.

A method based on patent analysis for the investigation of technological innovation strategies: The European medical prostheses industry

Corrado lo Storto (Napoli, Italy)

932

Presents a methodology based on the analysis of patents for investigating strategies of technological innovation employed by firms. The methodology is used to characterize the strategy pursued by 12 European firms.

In search of gazelles using a research DNA model

Martin A. Sims and Nicholas O'Regan (London, UK)

943

Examines the drivers of rapid growth in manufacturing SMEs. The results indicate: firms are less than 15 years old, CEOs are under 50 years of age, firms are in good financial health and managed by their owners. Interviews with CEO's offer additional insights.

Corporate governance and performance of small high-tech firms in Sweden

Lise Aaboen (Göteborg, Sweden), Peter Lindelöf (Nottingham, UK), Christopher von Koch and Hans Löfsten (Göteborg, Sweden)

955

The study (n=183) identifies core areas of importance in corporate governance. Founder's background has an effect on financing. Banks and family members are most frequently consulted. External consultation is typically with banks and regional development agencies.

Enabling technological learning among light engineering SMEs in Zimbabwe through networking

Stephen Chipika and Gordon Wilson (Milton Keynes, UK)

969

Considers case studies of African SMEs and how networks may assist or inhibit learning. The study has implications for the role of enterprise support organizations that seek to promote the development of SMEs in Sub-Saharan Africa.

The development of ICT advisors for SME businesses: An innovative approach

Arthur Morgan, David Colebourne and Brychan Thomas (Pontypridd, UK)

980

The potential contribution of information and communications technology to improving the competitiveness of SMEs has long been recognized. One related initiative *technology means business* is reviewed and offers a number of insights onto the development and application of similar initiatives.

Potential benefits, current supply, utilization and barriers to adoption: An exploratory study on German SMEs and innovation software

Stefan Kohn (Stuttgart, Germany) and Stefan Hüsig (Regensburg, Germany)

988

Deals with the employment of software in the innovation process in SMEs. It was found that software products are rarely used to support the innovation process and barriers to adoption of these innovations were considered. Initial explanations and implications of these findings are offered.

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Refereed papers

Innovation on the National Level

Co-evolutionary and multi-level dynamics in transitions: The transformation of aviation systems and the shift from propeller to turbojet (1930–1970)

F.W. Geels (Eindhoven, The Netherlands)

999

Deals with system innovation in Freeman and Perez's innovation typology conceptualizing these changes as transitions from one socio-technical system to another. This study provides an evolutionary economic analysis of technological change and the long-run evolution of technology and the socio-economic system.

- Are world-first innovations conditional on economic performance?** 1017
Brian P. Cozzarin (Waterloo, Ontario, Canada)
 The study considers whether past performance has an impact on a firm's ability to innovate. Market share, labor productivity and profit are significant indicators in many industries, but become of much lesser importance when other firm level indicators are considered. Internal information was found to be a very important factor for innovation across all industries considered.
- Slow technologies and government intervention: Energy efficiency in industrial process technologies** 1029
Esther Luiten, Harro van Lente and Kornelis Blok (Utrecht, The Netherlands)
 Four case-studies of innovation are considered. The related networks are studied and how these networks are affected by government intervention is determined.
- Research and development linkages in a national innovation system: Factors affecting success and failure in Korea** 1045
Jeong-dong Lee and Chansoo Park (Seoul, Republic of Korea)
 Explores the contributions of R&D partnerships to innovation. A sample of successful and failed innovation projects are considered. The main findings are the importance of funding in early stage R&D and collaborative R&D to success.
- Institutionalization of university research centers: The case of the National Cooperative Program in Infertility Research** 1055
Jan Youtie, Dirk Libaers and Barry Bozeman (Atlanta, GA, USA)
 Uses an institutional design framework and cross-case analysis to consider the National Cooperative Program in Infertility Research. It was found that the centers are not sufficiently institutionalized to achieve all their long run goals.
- Forms of creation of industrial clusters in biotechnology** 1064
Davide Chiaroni and Vittorio Chiesa (Milano, Italy)
 Proposes a taxonomy identifying (1) spontaneous clusters, and (2) policy driven clusters. In a few cases, clusters appear to be created by a combination of the two.
- An analysis of industrial networks for regional-independent production** 1077
Katsundo Hitomi (Kyoto, Japan)
 Industrial networks for a regional-independent production is defined. Optimization analysis is applied to maximize total profits for regional-independent production.
- The dynamic economic engine at Silicon Valley and US Government programmes in financing innovations** 1081
Jarunee Wonglimpiyarat (Boston, MA, USA)
 Considers the development of Silicon Valley, the government programs in financing innovations and the specific characteristics/factors contributing to the success of the valley. Porter's competitive Diamond Model is used as a basis to examine the activities in Silicon Valley in relationship to VC Management thus filling a gap in knowledge and providing valuable insights for policy makers.
- Modelling socio-technical transformations in wastewater treatment-A methodological proposal** 1090
Silke Panebianco and Claudia Pahl-Wostl (Osnabrück, Germany)
 Introduces agent-based modeling as a methodological approach to improve the understanding of adoption and diffusion of small-scale technologies. A conceptual agent-based model is developed to represent the dynamics of the socio-technical system. The model is suited to support collective learning and the decision making processes required in managing the transformation process.

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Refereed papers

Networks and Operations

Managing large research partnerships: Examples from the Advanced Technology Program's Information Infrastructure for Healthcare program

- Nicholas S. Vonortas and Richard N. Spivack (Washington DC, USA)** 1101
 These case studies investigate the organization and management of large research partnerships that form around risky, early stage complex technologies. Central authority is desirable for a common vision, to establish milestones and for day-to-day negotiations. Too much or little management concentration brings detrimental results.

- The challenges in digitalising business relationships. The construction of an IT infrastructure for a textile-related business network**
Enrico Baraldi (Uppsala, Sweden) and Giancarlo Nadin (Milan, Italy) 1111
 Considers how IT tools are constructed and introduced into business networks to sustain relationships and what type of challenges emerge during attempts to construct and introduce IT in the context of a business network in the textile industry.
- Strategic alliance in a closed-loop supply chain, a case of manufacturer and eco-non-profit**
Sameer Kumar and P. Malegeant (Minneapolis, MN, USA) 1127
 Investigates the factors leading to the development of a close-loop supply chain, describes the close-loop supply chain design, focuses on the collection challenges companies have been facing and shows how manufacturers can create value by implementing a partnership with a non-profit.
- Supplier involvement and manufacturing flexibility**
Shih-Chia Chang (Taipei, Taiwan), Rong-Huei Chen (Hsinchu, Taiwan), Ru-Jen Lin (Taoyuan, Taiwan), Shiaw-Wen Tien (Hsinchu, Taiwan) and Chwen Sheu (Manhattan, KS, USA) 1136
 Investigates the relationship between supplier involvement, manufacturing flexibility, and business performance. Using data (n=105) and a field study it is found that suppliers play a major role in the development and performance of manufacturing flexibility.
- Agile manufacturing: Industrial case studies in Spain**
Daniel Vázquez-Bustelo and Lucía Avella (Oviedo, Spain) 1147
 Based on the conclusions of the case studies a conceptual model for agile manufacturing has been developed. The study offers possible routes for future research in agile manufacturing.
- Organization of the doping control laboratory in the Athens 2004 Olympic Games: A case study**
A.G. Fragkaki, I.-P. Leontiou, N. Kioukia-Fougia, M. Tsivou, M.-H.E. Spyridaki and C.G. Georgakopoulos (Maroussi, Greece) 1162
 Considers the organization of the control of the Doping Control Laboratory of Athens (DCLA). The DCLA performed doping analyses during the Olympic games operating under the new international standards.
- Total quality management as a forerunner of business innovation capability**
Jesús Perdomo-Ortiz, Javier González-Benito and Jesús Galende (Salamanca, Spain) 1170
 This study considers the relationship between quality and innovation by analyzing the links between the concepts of TQM and Business Innovation Capability (BIC). An empirical study (n=102) reveals that the concepts are compatible and identifies dimensions of TQM that help to explain the generation of BIC.
- Studying the operational efficiencies of a multi-product supply chain using excel spreadsheet model**
Sameer Kumar and John Kropp (Minneapolis, MN, USA) 1186
 A spreadsheet model that incorporates the effect of variability in demand, forecast and lead time. The model replicates a four-level supply chain to demonstrate how a multi-product supply chain will react to certain changes.

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New Product Development

- Managerial issues in modularising complex products**
Magnus Persson and Pär Åhlström (Gothenburg, Sweden) 1201
 Identifies managerial issues in modularizing complex products through a four year case study at Volvo. Three major issues that require management attention are identified.
- Analysis of new product mix selection at TFT-LCD technological conglomerate network under uncertainty**
Hsing Hung Chen (Shang Hai, China), Amy H. I. Lee (Hsinchu, Taiwan), and Yunhuan Tong (Beijing, China) 1210
 A fuzzy AHP model is proposed. The use of the model for selecting the most appropriate product mix for development is discussed.
- Innovation process. Make sense using systems thinking**
Kostas Galanakis (Coventry, UK) 1222
 This paper communicates innovation theory to the different actors in the system under a common perspective and to reveal the complexity of innovation systems. The model's main focus is Knowledge Creation from public or industrial research, the New Product Design and development process, and the product success in the market it is codified, under a system dynamics approach creating a model the *Creative Factory*.

- Cognitive maps to analyze new product development processes: A case study** 1233
 Nunzia Carbonara and Barbara Scozzi (Bari, Italy)
 Cognitive maps are used to consider NPD. The analysis of four case studies show that some interpretive and cognitive issues are mainly responsible for problems caused in NPD.
- An evaluation model of new product launch strategy** 1244
 Yi-Chia Chiu, Benson Chen, Joseph Z. Shyu and Gwo-Hshiung Tzeng (Taichung, Taiwan)
 Develops an empirically (n=50) based framework for formulating and selecting a product launch strategy. An hierarchical fuzzy multi-criteria decision making method for evaluating new product launch strategies is proposed. Results suggest that a fast follower strategy is preferred.
- The sources and success of innovations — Determinants of commercialisation and break-even times** 1253
 Christopher Palmberg (Helsinki, Finland)
 A study of sources and success of innovations based on Finnish innovations commercialized during the 1980s and 1990s. Consideration is given to a range of different types of innovations from different industries using duration analysis.
- Driving new product success in the electrical equipment manufacturing industry** 1268
 Murray R. Millson (Adelphi, MD, USA) and David Wilemon (Syracuse, NY, USA)
 Investigates (n=58) three hypotheses related to new product development market success. A number of findings with important implications for both product development managers and scholars are discussed.
- Teaching product design to non-engineers: A review of experience, opportunities and problems** 1287
 Gül E. Okudan and Sarah E. Zappe (University Park, PA, USA)
 Provides a review of the experience cross-training students in the Entrepreneurship Minor and Masters in Manufacturing Program at Penn State and offers insights into potential opportunities and problems.
- Technological innovation processes revisited** 1294
 Antonio Cantisani (Sao Paulo, Brazil)
 This work considers the small occurrence of innovation in Brazilian society based on a retrospective analysis of case studies and industries. By enhancing the understanding of the innovation process, its complexity and inhibiting factors useful insights are offered for R&D managers.

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Information Technology

- 25 Years of Technovation: Characterisation and evolution of the journal** 1303
 M Teresa García Merino, M Liduina Pereira do Carmo and M Valle Santos Álvarez (Valladolid, Spain)
 Characterizes the journals development to show how the journal has evolved: thematic profile, impact publications, and authorship of papers. Comments are offered regarding future opportunities for the journal.
- Challenges to global RFID adoption** 1317
 N.C. Wu, M.A. Nystrom, T.R. Lin and H.C. Yu (Hsinchu, Taiwan)
 Explores the existing challenges and obstacles to RFID's quick adoption, the potential resolutions and approaches to the challenges, and migration strategies to expand the RFID industry.
- Implementation of enterprise resource planning in China** 1324
 Yahya Yusuf (Hull, UK), Angappa Gunasekaran (North Dartmouth, MA, USA) and Canglin Wu (Hull, UK)
 Common difficulties such as management support, costly and time-consuming, cultural differences, technical complexity, lack of professional personnel, and inner resistance are discussed. Suggested solutions to overcome these difficulties are offered.
- The future of mobile phone-based Intranet applications: A view from Japan** 1337
 Jeffrey L. Funk (Tokyo, Japan)
 Consider the future of mobile telephone-based intranet applications. The study is based on an analysis of published materials and interviews with personnel from more than 30 firms regarding the status of current applications and future applications.

3G telecommunication operators' challenges and roles: A perspective of mobile commerce value chain**Ying-Feng Kuo and Ching-Wen Yu (Kaohsiung, Taiwan)**

1347

An investigation into the roles that 3G telecommunication operators play on the mobile commerce value chain is offered. Present and future challenges for 3G telecommunication operators and their advantages and their roles in future development of mobile commerce are given.

Innovativeness and Involvement as Determinants of Website Loyalty: I. A test of the style/involvement model in the context of Internet buying**Hui-Chih Wang (Taiwan, ROC), John G. Pallister and Gordon R. Foxall (Cardiff, UK)**

1357

Tests (n=1,044) how consumers' cognitive style and involvement interact with each other and impact on their decision-making process underlying the tendency to brand loyalty, perceived risk and Website loyalty.

Innovativeness and involvement as determinants of website loyalty: II. Determinants of consumer loyalty in B2C e-commerce**Hui-Chih Wang (Taiwan, ROC), John G. Pallister and Gordon R. Foxall (Cardiff, UK)**

1366

A consumer website loyalty model is proposed to describe how consumer's transfer their existing brand loyalty in the traditional retail market to the same brand's website in the B2C ecommerce market. How consumers' cognitive style and involvement level interact with each other and impact on the predictors of website loyalty are discussed.

Innovativeness and Involvement as Determinants of Website Loyalty: III. Theoretical and managerial contributions**Hui-Chih Wang (Taiwan, ROC), John G. Pallister and Gordon R. Foxall (Cardiff, UK)**

1374

Demonstrates the theoretical and managerial contributions of style/involvement through review of the literature over the last two decades. And considers how the current series of studies build on and add value to the existing literature.

Customer-capturing strategies: The way to replace existing technology characterized by network effects**Ching-I Teng, Fan-Chen Tseng and David M. Chiang (Taiwan, ROC)**

1384

Proposes a new concept to describe the resistive strength of existing networks, identifies three different types of networks, and considers how high resilience networks are difficult to replace.

Knowledge-based view of corporate strategy**Mitsuru Kodama (Tokyo, Japan)**

1390

Presents a new view point on knowledge-based theory of the firm based on data obtained from qualitative research. Corporations successfully introduced new products and services to the market through a spiraling knowledge integrating approach through network knowledge communities as a dynamic view of strategy aimed at deliberately and continually creating new markets.

Book Reviews

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