

CALL FOR PAPERS
Special Issue of International Journal of Technology Management

*Innovation Networks and Knowledge Clusters
in the Glocal Knowledge Economy and Society :
Insights and Implications for Theory and Practice*

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The focus of this special issue of the IJTM is on profiling, analyzing, benchmarking, and modeling in socio-technical terms, ways and means that creativity, invention and innovation are manifested and flourish in select American, European, and Asian knowledge-based *innovation networks*¹ and *knowledge clusters*² (see definitions below) and may also serve as catalysts and accelerators of new and sustainable technological venture formation and growth. In this context, innovation-triggering *technological entrepreneurship* is viewed as a core element of local, regional and national innovation systems, as well as 'glocal' knowledge production and innovation-triggering networks³.

Moreover, the focus of this special issue is on highlighting *critical success and failure factors*, and *lessons learned* about entrepreneurial *initiatives, outcomes, outputs, and impacts* in America, Europe and Asia and in the context of knowledge creation, diffusion and use in innovation networks and knowledge clusters.

This IJTM special issue aims to attract a number of conceptual and empirical studies from the US, Europe and Asia, that contribute to a better understanding of the role of knowledge in the theory and practice of technological entrepreneurship in *the context of socio-technical networks architecture design, form and function* and from diverse theoretical perspectives, including, regional development economics and sociology of innovation, as well as regional science, and, technology and knowledge management:

- Select industries of focus would be biotechnology, advanced materials and ICT (as well as cross-disciplinary, emerging threads such as nano/bio-technology, MEMS, bio-informatics, etc) and in each region or country, innovation networks and knowledge clusters based on such industries would be identified and studied.
- Public-private partnerships for research and technology development, transfer, deployment and commercialization would also be studied in this context, and, in particular, their relationships and roles in catalyzing and accelerating the formation and growth of networks, clusters and individual new ventures.
- Top-down policies and bottom-up initiatives would be documented and reviewed to identify what works and what does not, how and why in each region, country and industry.

In conclusion, the purpose of this IJTM special issue, is the identification and articulation of insights that could inform *both public sector policies and private sector practices* to render them more effective and efficient. A series of recommendations for policy makers and practitioners would ideally emerge from this comparative, conceptual and empirical research contributing to the growing literature on the role of knowledge on *technology, innovation and entrepreneurship* and in particular with regards to the role of knowledge creation, diffusion and use in *local, national, regional, and global* innovation networks and knowledge clusters that form the underpinnings of the knowledge economy and society.

¹ Carayannis, Elias G. and Jeffrey Alexander, Strategy, Structure and Performance Issues of Pre-competitive R&D Consortia: Insights and Lessons Learned, *IEEE Transactions of Engineering Management*, May 2004, vol. 52, no. 2

² Excerpts from '“Mode 3” Knowledge Creation, Diffusion and Use in Innovation Networks and Knowledge Clusters: A Comparative Systems Approach across the United States, Europe and Asia', *Technology, Innovation and Knowledge Management (TIK-M) Series*, Elias G. Carayannis and David Campbell, Editors, Greenwood Press/Praeger Books, In Press, Due to appear August 2005

³ Carayannis Elias and Max Zedwitz (2005). Elias G. Carayannis and Maximilian von Zedwitz, Architecting GloCal (Global-Local), Real-Virtual Incubator Networks (G-RVINS) as Catalysts and Accelerators of Entrepreneurship in Transitioning and Developing Economies: Lessons Learned and Best Practices from Current Development and Business Incubation Practice, *International Journal of Technovation*, v. 25, no. 2, February.

KEY WORKING CONCEPTS DEFINED⁴: We provide here a set of working definitions developed in the context of this and prior related research projects that are meant to inform the author contributions:

- **“MODE 3”:** “Mode 3” for Knowledge Creation, Diffusion and Use⁵: “Mode 3” is a multi-lateral, multi-nodal, multi-modal, and multi-level systems approach to the conceptualization, design, ent-University-Industry Public-Private Research and Technology Development Co-opetitive Partnerships^{6 7}).
- **KNOWLEDGE CLUSTERS⁸:** Knowledge Clusters are agglomerations of co-specialized, mutually complementary and reinforcing knowledge assets in the form of “knowledge stocks” and “knowledge flows” and management of real and virtual, “knowledge-stock” and “knowledge-flow”, modalities that catalyze, accelerate, and support the creation, diffusion, sharing, absorption, and use of co-specialized knowledge assets. “Mode 3” is based on a system-theoretic perspective of socio-economic, political, technological, and cultural trends and conditions that shape the co-evolution of knowledge with the “knowledge-based and knowledge-driven, gloCal economy and society”⁹.
- **INNOVATION NETWORKS¹⁰:** Innovation Networks¹¹ are real and virtual infra-structures and infra-technologies that serve to nurture creativity, trigger invention and catalyze innovation in a public and/or private domain context (for instance, Governm that exhibit self-organizing, learning-driven, dynamically adaptive competences and trends in the context of an open systems perspective.

Papers submitted to this special issue will be reviewed in accordance with the IJTM’s editorial policy and should be emailed in MS Word format to:

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⁴ Excerpts from “‘Mode 3’ Knowledge Creation, Diffusion and Use in Innovation Networks and Knowledge Clusters: A Comparative Systems Approach across the United States, Europe and Asia’, Technology, Innovation and Knowledge Management (TIK-M) Series, Elias G. Carayannis and David Campbell, Editors, Greenwood Press/Praeger Books, December 2005.

⁵ Carayannis et al (2006), Technological Learning for Entrepreneurial Development, International Journal of Technovation, 26, 419-443.

⁶ Inter alia see: Carayannis, Elias G. and Jeffrey Alexander, Strategy, Structure and Performance Issues of Pre-competitive R&D Consortia: Insights and Lessons Learned, *IEEE Transactions of Engineering Management*, May 2004, vol. 52, no. 2

⁷ Inter alia see: Carayannis, Elias and Jeffrey Alexander, Winning by Co-opeting in Strategic Government-University-Industry (GUI) Partnerships: The Power of Complex, Dynamic Knowledge Networks, *Journal of Technology Transfer*, vol. 24, no. 2/3, pp. 197-210, August 1999. *Note: Awarded 1999 Lang-Rosen Award for Best Paper by the Technology Transfer Society*

⁸ Carayannis et al (2006), Technological Learning for Entrepreneurial Development, International Journal of Technovation, 26, 419-443.

⁹ Carayannis Elias and Max Zedwitz (2005). Elias G. Carayannis and Maximilian von Zedwitz, Architecting GloCal (Global-Local), Real-Virtual Incubator Networks (G-RVINS) as Catalysts and Accelerators of Entrepreneurship in Transitioning and Developing Economies: Lessons Learned and Best Practices from Current Development and Business Incubation Practice, *International Journal of Technovation*, v. 25, no. 2, February.

¹⁰ Carayannis et al (2006), Technological Learning for Entrepreneurial Development, International Journal of Technovation, 26, 419-443.

¹¹ Networking is important for understanding the dynamics of advanced and knowledge-based societies.

Networking links together different modes of knowledge production and knowledge use, and also connects (sub-nationally, nationally, trans-nationally) different sectors or systems of society. Systems theory, as presented here, is flexible enough for integrating and reconciling systems and networks, thus creating conceptual synergies.