Chapter 12
Cross-Cultural Knowledge Management and Open Innovation Diplomacy: Conclusive Remarks

> *Until philosophers are kings, or the kings and princes of this world have the spirit and power of philosophy, … cities will never have rest from their evils – no, nor the human race as I believe… [emphasis added]*
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> Plato, The Republic, Vol. 5, p. 492
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> *The empires of the future are the empires of the mind*
>
> Winston Churchill, 1945

12.1 Some Conclusive Remarks About Cross-Cultural Knowledge Management and Innovation Diplomacy

The "Mode 3" systems approach for knowledge creation, diffusion, and use emphasizes the following key elements (Carayannis and Campbell 2006):

1. *GloCal multi-level knowledge and innovation systems*: Because of its comprehensive flexibility and explanatory power, systems theory is regarded as suitable for framing knowledge and innovation in the context of multilevel knowledge and innovation systems (Carayannis and Von Zedtwitz 2005; Carayannis and Campbell 2006c; Carayannis and Sipp 2006). GloCal expresses the simultaneous processing of knowledge and innovation at different levels (e.g., global, national, and subnational; see, furthermore, Gerybadze and Reger 1999, and Von Zedtwitz and Gassmann 2002), and also refers to stocks and flows of knowledge with local meaning and global reach. Knowledge and innovation systems (and concepts) express a substantial degree of hybrid overlapping, meaning that often the same empirical information or case could be discussed under the premises of knowledge or innovation.
2. *Elements/clusters and rationales/networks*: In a theoretical understanding, we pointed to the possibility of linking the "elements of a system" with clusters and

the "rationale of a system" with networks. Clusters and networks are common and useful terms for the analysis of knowledge.

3. *Knowledge clusters, innovation networks and "co-opetition"*: More specifically, we emphasize the terms of "knowledge clusters" and "innovation networks" (Carayannis and Sipp 2006). Clusters, from an ultimate perspective, by taking demands of a knowledge-based society and economy seriously for a competitive and effective business performance, should be represented as knowledge configurations. Knowledge clusters, therefore, represent a further evolutionary development of geographical (spatial) and sectoral clusters. Innovation networks, internally driving and operating knowledge clusters or cross-cutting and cross-connecting different knowledge clusters, enhance the dynamics of knowledge and innovation systems (Carayannis and Laget, 2004; Carayannis and Provance, 2008). Networks always express a pattern of "co-opetition," reflecting a specific balance of cooperation and competition. Intranetwork and internetwork relations are based on a mix of cooperation and competition, i.e., co-opetition (Brandenburger and Nalebuff 1997). When we speak of competition, it often will be a contest between different network configurations.

4. *Knowledge fractals*: "Knowledge fractals" emphasize the continuum-like bottom-up and top-down progress of complexity. Each subcomponent (subelement) of a knowledge cluster and innovation network can be displayed as a microlevel subconfiguration of knowledge clusters and innovation networks (see Fig. 12.1). At the same time, one can also move upward. Every knowledge cluster and innovation network can also be understood as a subcomponent (subelement) of a larger macrolevel knowledge cluster or innovation network in other words, innovation metanetworks and knowledge metaclusters (see again Fig. 12.1).[1]

5. *The adaptive integration and co-evolution of different knowledge and innovation modes, the "Quadruple Helix"*: "Mode 3" allows and emphasizes the coexistence and coevolution of different knowledge and innovation paradigms. In fact, a key hypothesis is *The competitiveness and superiority of a knowledge system is highly determined by its adaptive capacity to combine and integrate different knowledge and innovation modes via co-evolution, co-specialization and co-opetition knowledge stock and flow dynamics* (e.g., Mode 1, Mode 2, Triple Helix, linear, and nonlinear innovation). The specific context (circumstances, demands, configurations, cases) determines which knowledge and innovation mode (*multimodal*), at which level (*multilevel*), involving what parties or agents (*multilateral*) and with what knowledge nodes or knowledge clusters (*multinodal*) will be appropriate. What results is an emerging fractal knowledge and innovation ecosystem ("Mode 3 FREIE"), well configured for the knowledge economy and society challenges and opportunities of the twenty-first century by being endowed with mutually complementary and reinforcing as well as dynamically coevolving, cospecializing, and co-opeting, diverse and heterogeneous

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[1] Perhaps, only when the whole world is being defined as *one global knowledge cluster and innovation network*, then, for the moment, we cannot aggregate and escalate further to a mega-cluster or mega-network.
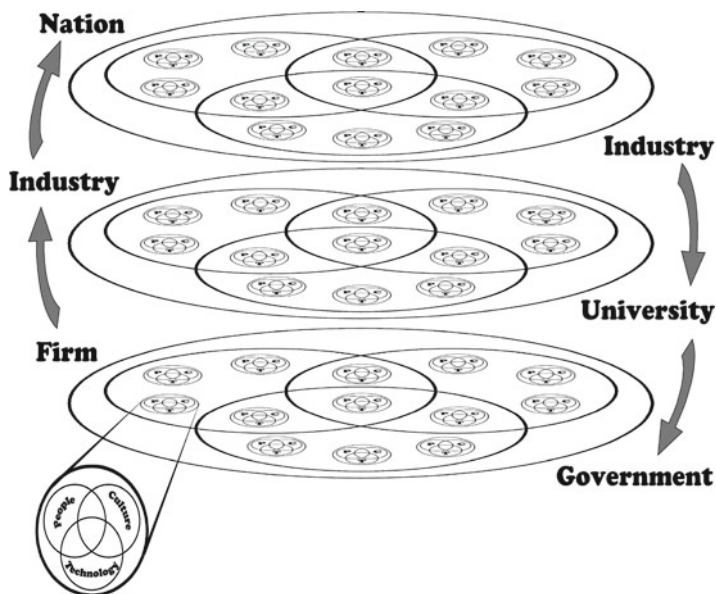
Fig. 12.1 The twenty-first century fractal research, education and innovation ecosystem (FREIE). *Source*: Elias G. Carayannis notes and lectures at GWU, 2000–2011

configurations of knowledge creation, diffusion, and use. The intrinsic litmus test of the capacity of such an ecosystem to survive and prosper in the context of continually glo*C*alizing and intensifying competition represents the ultimate competitiveness benchmark with regards to the robustness and quality of the ecosystem's knowledge and innovation architecture and topology as it manifests itself in the form of a knowledge value-adding chain. The concept of the "Quadruple Helix" even broadens our understanding, because it adds the "media-based and culture-based public" to the picture.

The societal embeddedness of knowledge represents a theme that already Mode 2 and Triple Helix explicitly acknowledge. As a last thought for this contribution we want to underscore *the potentially beneficial cross-references between democracy and knowledge* for a better understanding of knowledge. In an attempt to define democracy, democracy could be shortcut as an interplay of two principles (Campbell 2005): (1) *Democracy can be seen as a method or procedure,* based on the application of the rule of the majority.[2] This acknowledges the "relativity of truth" and "pluralism" in a society, implying that decisions are carried out, not because they

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[2] For example, Joseph A. Schumpeter (1942, Chapters XX–III) emphasized this method-based criterion for democracy.

are "true" (or truer), but because they are backed and legitimized by a majority. Since, over time, these majority preferences normally shift, this creates political swings, driving the government/opposition cycles, which crucially add to the viability of a democratic system. (2) *Democracy can also be understood as a substance* (*substantially*), where substance, for example, is being understood as an evolutionary manifestation of fundamental rights (O'Donnell 2004, pp. 26–27, 47, 54–55). Obviously, the method/procedure and the substance approach overlap. Without fundamental rights, the majority rule could neutralize or even abolish itself. On the other hand, the practical "real political" implementation of rights also demands a political method, an institutionally set-up procedure. For the purpose of bridging democracy with knowledge and innovation, we want to highlight the following aspects (see Fig. 12.2 for a suggested first-attempt graphical visualization; see also Godoe 2007, p. 358; and Carayannis and Ziemnowicz 2007):
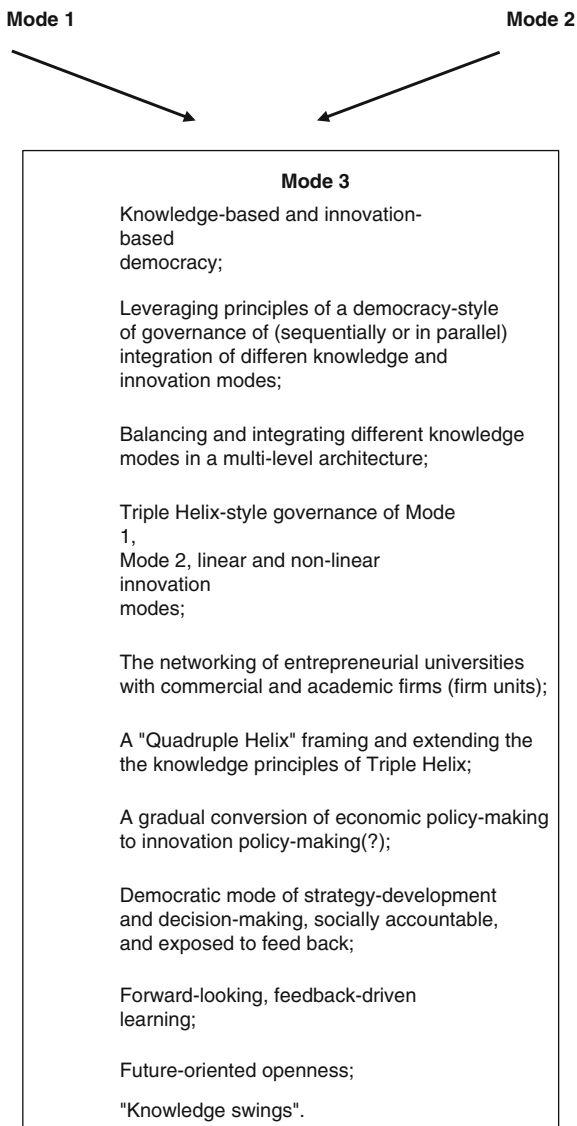
1. *Knowledge-based and innovation-based democracy*: The future of democracy depends on evolving, enhancing, and ideally perfecting the concepts of a knowledge-based and innovation-based democratic polity as the manifestation and operationalization of what one might consider the, paraphrased, "twenty-first century platonic ideal state": "It has been basic United States policy that Government should foster the opening of new frontiers. It opened the seas to clipper ships and furnished land for pioneers. Although these frontiers have more or less disappeared, the frontier of science remains. It is in keeping with the American tradition—one which has made the United States great—that new frontiers shall be made accessible for development by all American citizens" (Bush 1945, p. 10). Knowledge, innovation, and democracy interrelate. Advances in democracy and advances in knowledge and innovation express mutual dependencies.[3] The "quality of democracy" depends on a knowledge base. We see how the Glocal Knowledge Economy and Society and the quality of democracy intertwine. Concepts, such as "democratizing innovation" (Von Hippel 2005), underscore such aspects. Also the media-based and culture-based public of the "Quadruple Helix" emphasizes the overlapping tendencies of democracy and knowledge.[4]

2. *Pluralism of knowledge modes*: Democracy's strength lies exactly in its capacity for allowing and balancing different parties, politicians, ideologies, values, and policies, and this ability was discussed by Lindblom (1959) as *disjointed incrementalism*[5]: "… as the partisan mutual adjustment process: Just as entrepreneurs

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[3] For attempts, trying to analyze the quality of a democracy, see, for example, Campbell and Schaller (2002).

[4] On "democratic innovation," see, furthermore, Saward (2006).

[5] The *disjointed incrementalism approach* to decision making (also known as *partisan mutual adjustment*) was developed by Lindblom (1959, 1965) and Linblom and Cohen (1979) and found several fields of application and use: "The Incrementalist approach was one response to the challenge of the 1960s. This is the theory of Charles Lindblom, which he described as 'partisan mutual adjustment' or disjointed incrementalism. Developed as an alternative to RCP, this theory claims that public policy is actually accomplished through decentralized bargaining in a free market and a democratic political economy" (http://www3.sympatico.ca/david.macleod/PTHRY.HTM).

Fig. 12.2 Knowledge, innovation, and democracy. Glocal governance styles of the Glocal Knowledge Economy and Society? *Source*: Authors' own conceptualization based on Godoe (2007, p. 358)

Mode 1   **Mode 2**

Mode 3

Knowledge-based and innovation-based
democracy;

Leveraging principles of a democracy-style
of governance of (sequentially or in parallel)
integration of differen knowledge and
innovation modes;

Balancing and integrating different knowledge
modes in a multi-level architecture;

Triple Helix-style governance of Mode
1,
Mode 2, linear and non-linear innovation
modes;

The networking of entrepreneurial universities
with commercial and academic firms (firm units);

A "Quadruple Helix" framing and extending the
the knowledge principles of Triple Helix;

A gradual conversion of economic policy-making
to innovation policy-making(?);

Democratic mode of strategy-development
and decision-making, socially accountable,
and exposed to feed back;

Forward-looking, feedback-driven
learning;

Future-oriented openness;

"Knowledge swings".

and consumers can conduct their buying and selling without anyone attempting to calculate the overall level of prices or outputs for the economy as a whole, Lindblom argued, so in politics. Under many conditions, in fact, adjustments among competing partisans will yield more sensible policies than are likely to be achieved by centralized decision makers relying on analysis (Lindblom 1959, 1965). This is partly because interaction economizes on precisely the factors on which humans are short, such as time and understanding, while analysis requires their profligate consumption. To put this differently, the lynchpin of Lindblom's

thinking was that analysis could be—and should be—no more than an adjunct to interaction in political life" (http://www.rpi.edu/~woodhe/docs/redner.724.htm). Similarly, democracy enables the integrating, coexistence and coevolution of different knowledge and innovation modes. We can speak of a pluralism of knowledge modes, and can regard this as a competitiveness feature of the whole system. Different knowledge modes can be linked to different knowledge decisions and knowledge policies, reflecting the communication skills of specific knowledge producers and knowledge users to convince other audiences of decision makers.

3. *"Knowledge swings"*: Through political cycles or *political swings* (Campbell 1992) a democracy ties together different features: (1) decides, who currently governs; (2) gives the opposition a chance, to come to power in the future; (3) and acknowledges pluralism. Democracy represents a system which always creates and is being driven by an important momentum of dynamics. For example, the statistical probability for governing parties to lose an up-coming election is higher than to win an election (Müller and Strøm 2000, p. 589). Similarly, one could paraphrase the momentum of political swings by referring to "knowledge swings": in certain periods and concrete contexts, a specific set of knowledge modes expresses a "dominant design"[6] position; however, also the pool of nonhegemonic knowledge modes is necessary, for allowing alternative approaches in the long run, adding crucially to the variability of the whole system. "Knowledge swings" can have at least two ramifications: (1) What are dominant and non-dominant knowledge modes in a specific context? (2) There is a pluralism of knowledge modes, which exist in parallel, and thus also codevelop and coevolve. Diversity is necessary to draw a cyclically patterned dominance of knowledge modes.

4. *Forward-looking, feedback-driven learning*: Democracy should be regarded as a future-oriented governance system, fostering and relying upon social, economic, and technological learning. The "Mode 3 FREIE" is at its foundation an open, adaptive, learning-driven knowledge, and innovation ecosystem reflecting the philosophy of *Strategic or Active Incrementalism* (Carayannis 1993, 1994, 1999, 2000, 2001) and the strategic management of technological learning (Carayannis 1999; see, furthermore, De Geus 1988). In addition, one can postulate that the government/opposition cycle in politics represents a feedback-driven learning and mutual adaptation process. In this context, a democratic system can be perceived of as a pendulum with a shifting pivot point reflecting the evolving, adapting dominant worldviews of the polity as they are being shaped by the mutually interacting and influencing citizens and the dominant designs of the underlying cultures and technological paradigms (Carayannis 2001, pp. 26–27).

In conclusion, we have attempted to provide an emerging conceptual framework to serve as the "intellectual sandbox" and "creative whiteboard space" of the mind's

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[6] "Studies have shown that the early period of a new area of technology is often characterized by technological ferment but that the pace of change slows after the emergence of a dominant design" (http://www.findarticles.com/p/articles/mi_m4035/is_1_45/ai_63018122/print).

[7] The term constitutes the brainchild or *conceptual branding* of the authors as part of this journey of discovery and ideation.

eyes of "knowledge weavers" (*Wissensweber*)[7] across disciplines and sectors as they strive to tackle the twenty-first century challenges and opportunities for socioeconomic prosperity and cultural renaissance based on knowledge and innovation: "As a result of the glocalized nature and dynamics of state-of-the-art, specialized knowledge … one needs to cope with and leverage two mutually reinforcing and complementary trends: (1) the symbiosis and coevolution of top-down national and multinational science, technology, and innovation public policies … and bottom-up technology development and knowledge acquisition private initiatives; and (2) the leveling of the competitive field across regions of the world via technology diffusion and adoption accompanied and complemented by the formation and exacerbation of multidimensional, multilateral, multimodal, and multinodal divides (cultural, technological, socioeconomic, …) … In closing, being able to practice these two functions—being able to be a superior manager and policy-maker in the twenty-first century—relies on a team's, firm's, or society's capacity to be superior learners … in terms of both learning new facts as well as adopting new rules for learning-how-to-learn and establishing superior strategies for learning to learn-how-to-learn. Those superior learners will, by necessity, be both courageous and humble as these virtues lie at the heart of successful learning" (Carayannis and Alexander 2006). Already, the early Lundvall (1992, pp. 1, 9) underscored the importance of learning for every national innovation system.

Mode 3, in combination with the broadened perspective of the Quadruple Helix, emphasizes a Cross-Cultural Innovation Ecosystem that encourages the coevolution of different knowledge and innovation modes as well as balances nonlinear innovation modes in the context of multilevel innovation systems. Hybrid innovation networks and knowledge clusters tie together universities, commercial firms and academic firms. Mode 3 may indicate an evolutionary and learning-based escape route for Schumpeter's "creative destruction" (Carayannis and Ziemnowicz 2007). The "knowledge state" (Campbell 2006) has the potential to network "high-quality" democracy with the gloCal knowledge economy and society.

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