

Most Admired Knowledge City – MAKCi – Awards ¹

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The World Capital Institute and Teleos

The MAKCi Framework is based on an assessment of a city's Urban Capital Systems. The city's capital base (both tangible and intangible) and its capacity recombine it in innovative ways. The major capital categories are:

1. Identity capital
2. Intelligence capital
3. Financial capital
4. Relational capital
5. Human Individual capital
6. Human Collective capital
7. Instrumental-material capital
8. Instrumental-knowledge capital

These correspond to a taxonomy of Urban Capital deliberately and systematically mapped upon all the resources –both traditional and knowledge-based- required to leverage the balanced and sustainable development of contemporary urban communities³.

The underlying rationale for this taxonomy is to satisfy the formal requirements of a value-production system, i.e., that it be complete, consistent and homogeneous. This Taxonomy builds upon other efforts to identify and value collective individual capital at either urban, national or regional levels⁴. Known as Capital System, this taxonomy identifies the basic capital elements of productive systems and “meta-capitals”: those other forms of capital not productive themselves but significantly leveraging the system's overall capacity. Figure 3 describes this general structure.

¹ The Most Admired Knowledge City Awards© is a joint initiative between the World Capital Institute –developer of the Capital System© method- and Teleos, -developer of the Most Admired Knowledge Enterprise© Awards. All intellectual property rights reserved: Capital Systems © by The World Capital Institute; Most Admired Knowledge City Enterprise© Awards © by Teleos; and Most Admired Knowledge City Awards © jointly presented by the World Capital Institute and Teleos.

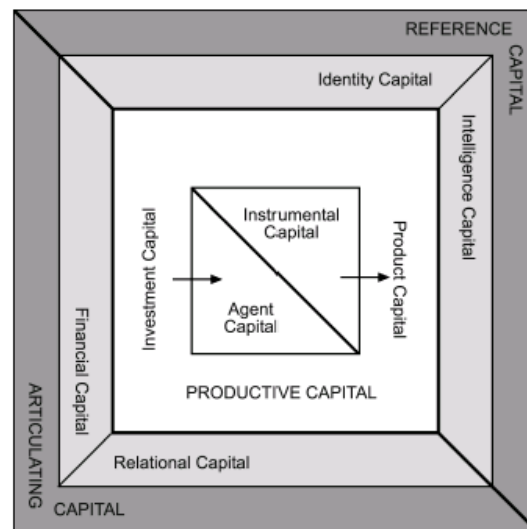
² January 31, 2007

³ This Taxonomy has been developed over the last decade by a group of faculty and students of The Center for Knowledge Systems, the Knowledge Capital Institute, The University of Manchester and MIK-Spain led by Professor F. J. Carrillo. See, e.g.: Carrillo, 1998, 2002, 2004, 2006; Medrano, 2000; Flores, 2000, 2006; Martínez, 2005, 2006; García 2004, 2006; Altamar and Carrillo, 2006. The Capital System Framework is WCI Copyright.

⁴ Bonfour and Edvinsson (2005) provide a recent perspective on alternative frameworks and methods to assess collective intellectual capital.

Figure 3 Generic System of Capitals

Figure 3 A generic system of capitals



Despite the young age of the Knowledge Cities field, a number of comparative frameworks have already been proposed to assess the relative importance of different development factors relative to specific explanatory and technical approaches (Ergazakis et al, 2004, 2006 a, b, c; Bañegil and Sanguino, 2006; Martínez, 2006). Amongst these approaches, the strategic framework provided by the identification, valuation and systematic development of the city's traditional and knowledge capital in an integrated way, seems to be gaining support. The recently founded New Club of Paris –devoted to the valuation and development of collective Intellectual Capital- and its leading role in the Knowledge Capital Accounts of countries and regions, as well as an independent assessment of the Knowledge-based Developments potential of 40 cities around the world carried out by Price Waterhouse Coopers, constitute testimonies of this trend⁵. Thus, the MAKCi Framework adapts the Capital System approach for the purpose of establishing the relative capacity of a city to determine its course and rate of change in a knowledge-based world. The MAKCi Framework is a basic economic model since it involves an assessment of the value base on which the future development of a city is made possible through a recombination or trading of actually existing capitals, both traditional and knowledge-based.

⁵ *Cities for the Future: global competition, local leadership*. Price Waterhouse Coopers, UK, 2005.

From next page, the definitions of the major categories follow, with an instantiation of some subcategory, attribute or indicator. These categories can be disaggregated further into detailed sets of value dimensions for a particular city⁶. In this particular disaggregation, we keep the same indexing corresponding to the eight major MAKCi categories:

1. Identity capital
2. Intelligence capital
3. Financial capital
4. Relational capital
5. Human Individual capital
6. Human Collective capital
7. Instrumental-material capital
8. Instrumental-knowledge capital

What is a city?

The concept of “city” is far from being standardised internationally. Different countries, different languages and different cultures provide different contexts for the definition of city⁷. Most are based on a criterion of “relative importance” for granting a particular urban settlement such status, but these criteria are often too arbitrary and context-bound. For the purpose of this study, it seems more convenient to select a definition based on a criterion of more global applicability, such as population size. Therefore, we have chosen the concept of Metropolitan Statistical Area (MSA) as defined by the U. S. Office of Management and Budget. According to that, an MSA (and for the purpose of this study, a city) is

“... [a place] that has at least one urbanized area of 50,000 or more population, plus adjacent territory that has a high degree of social integration with the core as measured by commuting ties”⁸.

By extension, a Knowledge City in the context of the MAKCi framework is one such place...

⁶ e.g.: ‘A capital System for Monterrey’ (Carrillo, 2006, pp. 145-165)

⁷ Just looking at the many ways of distinguishing “town” and “city” in English-speaking countries, one realizes the huge amount of variations of the “city” concept (see: http://en.wikipedia.org/wiki/City#The_difference_between_towns_and_cities). Contemporary uses of the term “city” are also determined by the diversity and evolution of modern urban experiences (cfr. Carrillo, 2006, pp. 274-278).

⁸ In Sperling and Sander (2004), p. 3.

“...that has undertaken a deliberate initiative to identify and develop the city’s capital base in a balanced, sustainable manner”⁹.

TAXONOMY OF URBAN CAPITAL

The generic classification of city categories as a value system

METACAPITALS are those forms of capital not productive in themselves, but significantly increasing the system’s overall productivity by providing it with alignment and cohesion.

Referential Capital. *Value elements that allow the identification and alignment of all other forms of capital.*

1. Identity capital. *Internal value referents: all those elements generated as an attempt to determine the essence and purpose of a city as a collective venture. The quality of identity construction significantly determines the sense of purpose and belongingness of its citizens.*

- *Inherited identity. Formal and informal elements, accumulated through the city’s history, that have contributed to shape its identity, e.g.:*
 - *Name(s), etymology*
 - *Foundation Act*
 - *Heraldry*
 - *Political and administrative adscription and jurisdiction*
 - *Historical records of the city’s demarcation, jurisdiction and evolution*
 - *Endogenous profile as substantiated by historical, archaeological, political, relational, geographic, climatic and economic inheritance: the space of possibilities determined by the past*

- *Current identity. Formal and informal elements, contributing to determine its current identity, e.g.:*
 - *Value proposition: distinctiveness and actualization of the city’s offerings as a residence and destination*
 - *Sense of purpose, belongingness and fulfilment of both residents and visitors/partners*
 - *City Brand: quality of definition, global positioning, presence and mind retention amongst target audiences*
 - *Differentiators: deliberate fostering of distinctive features, uniqueness of these, recognition by target audiences*
 - *Core competencies: areas of outstanding presence or performance*

⁹ Carrillo (2004), p. 34.

- *Attractiveness: capacity to retain its native citizens and attract new ones, particularly talented ones¹⁰*
- *Comparative positioning: rankings, awards, recognitions, benchmarks*
- *KBD Policy: existence and enactment of a formal KBD Strategy*

2. Intelligence capital. *External value referents: all those elements generated as an attempt to visualize and understand its context, to check against its identity and to develop into a strategy*

- *City Intelligence System. Quality of the city's systems to sense, make sense of and respond to agents and events which are significant to the city's welfare*
 - *Sensing capabilities: systems, procedures and competencies to focus upon and obtain strategic information*
 - *Sense making capabilities: capacity to interpret and communicate intelligence findings and to generate citizen's participation and commitment*
 - *Response capabilities: capacity to enact effectively and efficiently collective realizations, policy making and execution*
- *City Future Management. Quality of the city's system to foresee and foster its future*
 - *Prospected identity. Formal and informal elements composing its future vision. Clarity, viability and compelling power of such vision*
 - *Existence of the City's Future Centre or formal enablement of its functions¹¹ through another kind of social innovation initiative*

Articulation Capital. *Value elements providing cohesion and making possible the recombination or exchange of value elements*

3. Relational Capital. *The quality of the interaction between the city's internal significant agents, as well as between the city and its external significant ones*

- *Internal Relational Capital. State of the interaction between significant internal agents, e.g.,*
 - *Cultural, legal, and economic environment*
 - *Institutional and political stability*

¹⁰ This factor has been extensively explored by Professor Richard Florida (2002, 2005) and others. See <http://www.creativeclass.org/author.shtml>

¹¹ Cfr. Dvir and Pasher (2004), Dvir et al (2006) and Edvinsson (2006).

- *Employment and proportion of economically active population*
 - *Social cohesion and urban integration*
 - *Human rights enforcement*
 - *Wealth and knowledge distribution*
 - *Race, religion and culture diversity and tolerance*
 - *Social integration of women and gender equality*
 - *Social awareness and democratic participation*
 - *Neighbourhood integration and urban sprawl¹²*
 - *Intensity and quality of social transactions*
 - *Public safety*
 - *Private (family and other social cells) bonding*
 - *Legality and egalitarianism. Social inclusion and law enforcement*
 - *Transparency. Advances in legislation and practices of access to information and social accountability*
 - *Corruption control. International transparency benchmarks*
 - *Governability. Strength of social institutions' international benchmarks*
- *External Relational Capital. State of the interaction with significant external agents, e.g.,*
 - *International and national image*
 - *Public and private networking*
 - *Regional, national and foreign affairs offices*
 - *Consulates and other diplomatic representations*
 - *Local, national and international alliances*
 - *Twin cities*
 - *Connectivity: intensity and quality of local, national and global exchanges*
 - *Representation and lobbying taskforce in regional, national and international fora*
 - *Membership of regional, national and international organizations*

4. Financial Capital. *Monetary denomination of a set of value dimensions*

- *Macro-indicators. Set of economic indicators conventionally used for basic international comparisons, e.g.,*
 - *GDP, GDP per cápita, growth forecasts*
 - *Budget balance*
 - *Industrial production*
 - *Consumer price index*
 - *Trade balance*

¹² See Carrillo, 2006, p. 280: "sprawl" epitomizes the alienation of urban experience, often expressed by a growing inability to recognize and respond to others (see also Robert Putnam's work on social degradation in US society).

- *Current account*
 - *Foreign currency reserves*
 - *Bonds*
 - *Stock exchange index*
 - *Interest rates*
 - *Inflation*
 - *Unemployment*
 - *Income salary*
 - *Sovereign debt*
 - *Investment risk qualification*
- *Public accounts. The official city accounts as established by regional, national and international accounting norms¹³*
 - *Gross domestic product (GDP) at market prices*
 - *Gross national income (GNI) at market prices*
 - *Net national income (NNI) at market prices*
 - *Net national disposable income*
 - *Gross capital formation*
 - *Saving net*

PRODUCTIVE CAPITALS. Those forms of capital that directly intervene in a value generation process, as inputs, agents, instruments or products.

Human Capital. *Value generating capacity of individual and collective social agents*

5. Human Individual Capital. Value generating capacity of individuals

- *Individual endowment. Aspects of the individual's physical constitution, its developments and health condition, depending on environmental and social factors and determining her/his organic integrity and overall potential*
 - *Ethnic diversity*
 - *Quantitative and qualitative demographic variations*
 - *Immigration rate*
 - *Resident population by migratory status, origin and time of residence*

¹³ Based on the OECD Main Aggregates of National Accounts of OECD countries. (Volume I, 1992-2003). Available online at <http://www.SourceOECD.org>

- *Health and nutrition*
 - *Physical and mental welfare of individuals as well as nutrition habits*
 - *Life expectancy at birth*
 - *Life expectancy index*
 - *Infant mortality rate*
 - *Children with deficit in weight/age/height rates*
 - *Nutrition. Quantity and quality of food and drink intake with reference to the needs of human organism and its balance*
- *Socio Economic: Economic base from which the city inhabitants have access to opportunities to develop their productive potential*
 - *Economically active population*
 - *Economic participation rate*
 - *Week workload average*
 - *Income distribution*
 - *Poverty indicators*
- *Intellectual. Aspects of intellectual and emotional development of individuals which are determined by the environmental and social conditions and determine its organic integrity and overall potential*
 - *Normal capacities. Individual competencies and performance in the family, education and production environments*
 - *Family integration competencies. "Knowledge, capacities and skills aggregated to the effectiveness of attitudes and practice of families which facilitate and promote children's survival, development, protection and participation" (UNICEF)*
 - *Formative competencies. Amount of individuals and quality of their performance in formal education institutions*
 - *School education system. Amount of individuals and quality of their performance in formal education institutions of the school system*
 - *Productive competencies. Amount of individuals and quality of their performance in formal production activities*
 - *Knowledge intensive competencies. Amount of individuals and quality of their performance in formal production activities*
 - *Lifelong and career development. Amount of individuals and quality of their performance in continued training and education after regular graduation and before retirement*
 - *Special capacities. Individuals with special capacities with access to required learning process and infrastructure*
 - *Knowledge citizens competencies¹⁴*

¹⁴ *see Martínez, 2006*

- *Socio-cultural competencies. General level of cultural and civic performance*
 - *Social. Habits, civic culture, urbanism, including driving and waste-disposal habits*
 - *Domestic. Individual social behaviour and neighbour relationships*
 - *Cultural. Cultural competencies of individuals, including artistic capacities and cultural patterns and attitudes such as reading habits, diversity tolerance and safe-sex practices*

6. Human Collective Capital. Collective and team-based value generating capacities

- *Organic. Structural human dispositions having an impact on the constitution of organizations or on their functions*
 - *Demographic structure. Statistical composition of the population by demographic factor*
 - *Public health. State of collective physical and mental welfare and conditions determining it*
 - *Social welfare. Coverage and quality of social welfare institutions*
 - *Births managed by health professionals*
 - *Urban population with access to adequate sanitation*
 - *Epidemiology. Public management of endemic diseases and health risks*
 - *Public response capacity to epidemic hazards*
 - *High impact diseases. Deadly or severe avoidable diseases which depend on habits and affect large sections of the population, such as cardiovascular diseases, diabetes and AIDS*
 - *Main causes of death*
 - *Percentage of deaths attributed to avoidable causes*
 - *Addictions. Narcotics, alcohol and tobacco consumption*
 - *Volume of consumption and annual variation*
 - *Number of deaths caused by addictions*
- *Intellectual. Knowledge-based, including emotional and cultural collective capacities*
 - *Cultural heritage. Social transmission of knowledge and values from generation to generation through uses and customs*
 - *Languages. Conservation and general level of proficiency*
 - *Native language proficiency level*
 - *Mastery of a second language*
 - *Religions. Consistency with own religious beliefs and tolerance of other religious or non-religious perspectives*

- Arts. General aesthetic development and artistic expression capacity of the population
- Handcrafts, customs, regional cuisine and dressings, celebrations and rituals.
- o Socio-economic environment. Collective dispositions to effectively engage in productive action
 - Competitiveness. Capacity to create and sustain a favourable environment to generate more economic value and social prosperity
 - City ranking in national and international competitiveness benchmarks
- o Evolutionary capacities. Collective dispositions towards social learning and effective change
 - Cultural diversity. Richness of the city's cultural makeup
 - Tolerance. Capacity to relate empathically and assertively with people of a different racial, social, cultural or economic background
 - Civic culture and citizen participation. General level of self-governance and initiative
- o Entrepreneurship. Collective capacity to create new high-value businesses
- o Innovation. Collective capacity to conceive and effectively develop new ways to add value in any relevant human activity

Instrumental Capital. The means of production through which other capitals leverage their value generation capacity

7. **Instrumental-material Capital.** Physical-based means of production through which other capitals leverage their value generation capacity

- Geographic
 - o Longitude and latitude
 - o Orography, hydrography, geology, seismology and soil composition. Geographic elements determining the physical setting of the city and its possibilities, such as accessibility, water resources, type of constructions, etc.
 - o Climate. Is the average state of meteorological elements in a region, considering a long period of time
 - o Landscape. Aspect of natural surroundings
 - o Flora, fauna and other natural assets and liabilities
- Environmental
 - o Physical environment: air, soil and water quality and pollution
 - o Urban environment: urban landscape, architectural harmony
 - o Visual, auditive and olfative pollution

- Urban infrastructure
 - *Material cultural heritage (Historical sites and archaeological records, historic buildings and monuments, museums and retrospective collections, objects and samples inventories)*
 - *Underground infrastructure (pipelines, drinking water, coverage and quality of the drinking water distribution network, quality of drinking water, sewage, natural gas, wire networks, civil infrastructure*
 - *Urban configuration (Zonification, district configuration, neighbourhoods, housing, green and recreational areas, parks, natural reserves and protected areas, squares, sports centres, streets, avenues and transit infrastructure, highways and fast roads, bridges and tunnels, natural hazards protection infrastructure*
 - *Urban sprawl, massive popular housing, enclosed residential areas, urban gap, architectural eclecticism, visual pollution density, disruption of natural landscape, automobile precedence, automobile infrastructure, vehicle census, traffic fluency*
 - *Public transportation network, metro, buses, taxis, suburban connectivity*
 - *Airports, national flights, international flights*
 - *Maritime ports, train and bus terminals and stations, railroad network, road network*
 - *Communications, surface mail and telegraph, telecommunications, intra-connectivity*
 - *Local radio, TV and data networks*
 - *External Connectivity: telephone, national and international radio, TV and data networks, Internet access*
 - *Crime prevention, ranking in regional and international crime prevention index; inhabitants: policemen ratio; coverage, quality of public and private crime prevention*
 - *Productive Infrastructure*
 - *Industrial infrastructure. Installed capacity in investment and productivity*
 - *Commercial infrastructure.*
 - *Service Infrastructure*
 - *Health and social welfare: land, buildings, installations, equipment, furniture and tools for medical and sanitary services.*
 - *Hotel capacity. Rankings in international benchmarks*
 - *Leisure and entertainment facilities: total area of family recreation space, restaurants, theatres, cinemas, arenas, stadiums and other spectacle seats*
 - *Bohemian index¹⁵, number of places offering live music*

¹⁵ Cfr. Florida, op. cit.

- Conferences, fairs and business events infrastructure. Ranking in international benchmarks for business events.

8. Instrumental-intangible Capital. Knowledge-based means of production through which other capitals leverage their value generation capacity

- Social organization structure. Structural capacities of social subsystems
 - Social innovation system. Structural innovation capacity of social subsystems
 - Productive innovation. Innovation capacity of the private sector, new businesses incubation and creation, proportion of high-value new business creation, survival rate of new businesses after 5 years, initial public offerings
 - Educational, scientific and technological innovation. Innovation capacity of the education, scientific and technological establishment, university curricula life cycle, scientific citations and networking, patents and licenses as percentage of population
 - Government innovation. Innovation capacity of the public sector; legal reforms; rankings in international government efficiency benchmarks, political organization and participation
 - Civil organization system. Structural capacities of NGOs, total registered NGOs, annual NGOs growth, citizen participation in NGOs
 - Productive System. Structural capacities of the private sector, total ISO certified companies, ISO certifications by sector
 - Educational, scientific and technological system. Structural capacities for education, science and technology: education indicators; science and technology indicators
 - Government system. Structural capacities of government bodies: Legislative, Executive, Judiciary; government efficiency; accountability and performance of government bodies
- Information and telecommunications functional capacities. Structural capacities, traditional and ITC-based for information and communications
 - Information platforms. Printed and electronic media containing information about civil society, private industry, education and government.
 - Physical systems for recording, storing, retrieving, processing, and distribution; printed and electronic periodical publications.
 - Electronic information systems. Electronic systems for recording, storing, retrieving, processing, and distribution
 - E-government: coverage, transparency, accessibility and usability, content, services, participation

- *Knowledge bases and systems. Records, archives and collections sustaining the city memory*
 - *Physical-base records. Records in non conventional documentary units, e.g.: stone encryptions, codices, etc. where the content is the most valuable aspect*
 - *Records and archives. All records in formal document units*
 - *Digital memory. All records and document units containing information about the civil society, private industry, education and government*
 - *Electronic databases. Data repository about the civil society, private industry, education and government*
 - *Public information services. Information resources offered to the public by agents of the civil society, private industry, education and government*

MAKCi Criteria (Macro-performance dimensions or capital base). As mentioned earlier, the MAKCi Framework is based on an assessment of a city's capital base (both tangible and intangible) and its capacity to recombine it in innovative ways. Based on the above concepts, the following eight criteria will be used to assess each of the cities nominated to the MAKCi Awards:

[Rate on a scale of 1 (poor) to 10 (excellent) each city's capabilities against the eight capital categories listed below:]

1. **Identity** –capability to create and evolve a distinctive and well-positioned urban personality
2. **Intelligence** –capability to identify/foresee and adequately respond to significant agents and events
3. **Financial** –capability to generate and sustain a healthy monetary base
4. **Relational** –capability to develop quality interactions with all significant internal and external agents
5. **Human Individual** –capability to create conditions for the full biological and psychological development of residents
6. **Human Collective** –capability to enhance the goal achievement potential of its constituent communities
7. **Instrumental-material** –capability to take advantage of location and to build and renew a world-class physical infrastructure
8. **Instrumental-intangible** –capability to transfer knowledge and foster innovation in all major areas of city life

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