

A note on Knowledge-based Development

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DT + KM = KBD

Knowledge-based Development (KBD) is a theoretical and technical field which itself derived from the convergence of a discipline and a movement. The discipline of origin is that part of Economic Science traditionally known as *Growth Theory* (GT). GT focuses on the understanding of macroeconomic principles determining increases in total production of countries and regions. The movement of origin is, in turn, Knowledge Management (KM), which primarily emerged in business as a response to the need of identifying, valuing and capitalizing all factors of value creation, prominently knowledge-based factors. Later on, the movement extended to individual, organizational and social knowledge-based development.

DT, as a formal branch of Economic Theory, has an evolution parallel to the discipline as a whole and to its main schools of thought. Major theories had derived from their macroeconomic models their respective explanatory principles of the development dynamics and had reached their respective impacts upon national and international policies until the end of the Cold War. The more recent identification of a new value dynamics in economic growth led to the emergence of a “new” or “Endogenous” Growth Theory (NGT). The “endogenous” or “from within” character of NGT derives from a constant awareness of a faster production growth than what could be attributed to external factors. Hence, the novel assumption was entered that growth rate could depend on the preferences –that is, on the value system- of productive agents. This awareness has awakened GT from its relative stagnation of the 70s and early 80s, to its current boom. Contributions such as Paul Romer’s, in whose model economic growth is accelerated by endogenous knowledge processes, contributed to drive GT, specifically NGT, towards Knowledge Management.

KM is an end-of-century movement which initiated after World War II with the preponderance for the first time in history of knowledge-based production factors in an increasing number of industries and regions. In the decade of the 90’s, the KM movement gathers momentum thanks to the confluence of three major economic drivers: a) the constraints of industrial business models to capitalize on Information and Communication Technologies –also known as “productivity paradox”, b) the increasing acceleration of the obsolescence rate of productive competencies, and c)

particularly, the urge to identify, measure, understand and capitalize on “intangible” (or knowledge) assets contributing to wealth generation and to social development at large. Thus, Knowledge-based Development is the response of Economic and Management Sciences to the emergence of Knowledge Societies.

The theoretical and practical convergence of GT and KM, which engendered KBD, is fairly recent. Even if there were hints of such convergence since the late 80’s and even if a mounting number of events during the 90’s heralded such convergence this was not consummated until the turn of the century. The analyses of economists such as Gary Becker y Richard Solow, who provided empirical grounds to the proverbial rol of Human Capital and Technology in economic growth, were each acknowledged with the Nobel Prize. Large international development agencies refocused their efforts, just as the century was closing to an end, moving from financial investment in physical infrastructure towards knowledge-based programs. The KM movement, in turn, had gone in a fulgurant take-off, from being the fastest-growing business consultancy field in the 90’s, to becoming the dominant factor in development policies throughout countries and regions such as Japan, Scandinavia, Australasia, Canada and, more recetly, the European Union as a whole. But the formal consumation of the marriage between GT and KM happened only in 2002. With the publication of a special issue of the *Journal of Knowledge Management* (Vol. 6, No. 4), which aimed at bridging the theoretical and technical contributions of GT and KM and to grant a birth certificate to KBD, the new field became a field of study on its own accord. KBD is a creature of the new millennium.

Three levels of KBD

KBD, just like KM, has evolved substantially in its meteoric existence. The numerous KM approaches as well as major KBD programs can be distinguished on the basis of the focus of their development actions, i.e., on how knowledge is understood. Basically, knowledge tends to be understood either as an object (content) in most cases, or with increasing frequency as a capacity transfer or else, in the edge of KM practice, as a value context. Table I shows, for each of these three levels, which is the knowledge concept assumed, which therefore the development process that is enabled and finally, which is the resulting KBD approach.

Table I Three KBD levels

<i>Generation</i> Attribute	<i>I Generation: Object - centered</i>	<i>II Generation: Agent - centered</i>	<i>III Generation: Context - centered</i>
Knowledge concept	Information record	Capacity flow	Value allignement
Capitalization process	Accumulate and retain stock	Facilitate and increase circulation	Dynamically adjust to a sustainable value

			balance
KBD definition	KBD is an <i>infrastructure</i> to increase the social stock of knowledge	KBD is a <i>policy</i> to propiciate the social flow of knowledge	KBD is a <i>development strategy</i> based on the identification, systematization and development of the social capital universe

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Level I KBD: social knowledge infrastructure

Most KBD programs start focusing on the most immediate area of impact: the instrumental base which leverages the capacities of productive agents, particularly ICTs infrastructure. An example of this approach is the World Bank's Global Knowledge Partnership, which focuses on the multiplication of information, experiences and resources through ICTs. This sort of experiences, which have already accumulated a decade of lessons learnt, are well documented. There is a growing consensus that CTs and social knowledge infrastructure in general (universities, libraries, R&D centers, technoparks, etc.) constitute a necessary but not sufficient condition for generating development. Numerous infrastructural efforts have produced rather poor results with regard to the volume of investments. The upcoming World Summit on Knowledge Societies (2004) will assess the global situation on ICTs and the so called Digital Divide.

Level II KBD: human capital development

Once the constraints of the infrastructural approach became evident, there has been an increasing shift towards facilitating self-development in natural agents. KBD policies centred on human capital development are now strongly favoured by NGT. Self-directed learning, incorporation to self-esteem and entrepreneurship virtuous circles, articulation of communities of practice, integration of talent bases, establishment of knowledge clusters, construction of knowledge support networks and of regional innovation systems, are some of its more common manifestations. Examples are the UN's STDev Net (Science and Technology for Development Network) and the WB's GDLN (Global Development Learning Network). Highly oriented towards knowledge flows amongst natural agents, these kind of programs gets replicated within communities and organizations, particularly those having a virtual or distributed nature. Even if learnings at this level are preliminary, a clear lesson is that the mere multiplication of flows does not necessarily produce a social or organizational improvement. The issue of value or significance context emerges hence as fundamental. KBD begins to unfold as a qualitative, not quatitative matter, as an issue of social transformation and not sheer industrial growth.

Level III KBD: Development of the Social Capital System

KBD leading thought goes beyond the multiplication of both, knowledge objects and knowledge flows, thus focusing on *knowledge-based value systems*. These systems are human collectives deliberately pursuing a complete and sustainable development with particular emphasis on intangible or knowledge value. Such

values include in principle all meaningful dimensions of experience and therefore, all potential human fulfilments. Under this perspective, an improvement in the human condition (the value dimension) recovers its purposive nature, while knowledge stock or capital recovers its instrumental character as the most powerful mean for such purpose. Also, Level III KBD reaches a strategic meaning, since the capital system constitutes the quintessential expression of a community's identity and purpose, as well as of the human competencies and tools to accomplish them. The main tasks deriving from this approach are: i) the articulation of the set of social capitals under a complete, consistent and homogeneous system, ii) the operationalization and metrics of such system, iii) the identification of strategic gaps, iv) the undertaking of initiatives to narrow those gaps, v) the feedback and adjustment of such initiatives.

There are enough examples of amongst national governments (Sweden, Denmark, Israel, Singapur), and international agencies (UN, World Bank, OECD), as well as numerous private and public organizations, of efforts moving in this new direction. Most of them involves a strategic logic similar to the one just described and is based in the measurements of "soft" capital elements. Nevertheless, few if any can yet satisfy the consistency, completeness and homogeneity requirements of their social capital systems. They still tend to consist of novel aggregates of knowledge capitals, but lack the formal referential and articulation elements that provide identity and social cohesion. They lack, therefore, strategic focus.

There are already some proposals for articulating social capital which are based precisely on the identification and consolidation of referential and articulation capitals in order to subsequently align all productive capitals. There are even some efforts to develop a global KBD platform, such as the UNDP initiative to build an inventory of "Global Public Goods" and, more widely, the World Capital Institute for determining alternative global capital structures and assessing the impact that major agents such as military and trade superpowers, large transnational corporations and the main international agencies have upon the *Global State of Capitals*.

Knowledge cities, knowledge regions, knowledge world.

The momentum in the field of KBD becomes evident through the wealth of initiatives that at urban (Singapur, Barcelona), regional (Veneto Valley, Basque Country), national (Denmark, New Zeland), and supranational (European Union) levels flourish day by day. Every initiative sets its own limits as long as it corresponds to some of the levels mentioned above and reaches those limits as it develops the required capacities. Meanwhile, the opportunity that each city, region, country engages in this new development dynamics and gets measured with this new global yardstick vanishes every day that it procrastinates the decision. Even trying, the evidence suggests that it takes a lot more than good will to succeed. The odds that any effort of this kind succeeds, seems to be determined by at least the following conditions,

- i. a leadership committed, above all, with the sustainable wellbeing of its community

- ii. a critical mass of change agents having a sufficient understanding of the qualitative differences of KBD
- iii. a conceptual and technical capacity to articulate and develop the social system of capitals
- iv. a rigorous and transparent state of knowledge-based social capital
- v. a series of strategic initiatives to reach an optimal capital balance, feeding on best global practices
- vi. an international network of relationships with leading entities in knowledge-based innovation.

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