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Introduction

Conceptualising Knowledge Society: Critical Dimensions and Ideal Image

I. Knowledge Society and Its Emergence

Human societies have borne witness to the continuous process of progression from an early stage of hunting–gathering to agrarian, agrarian to industrial and industrial to postindustrial and to contemporary knowledge society. These progressions have been shaped by a variety of factors including those of perceived inability and weakness of given arrangements to cope with the need of existing societies, on the one hand, and new technological discoveries, advancements of thoughts, ideals and values, on the other. These are again accompanied by the resurgence of new actions of the state, market, civil society and people; and articulation of diverse interests and identities and formation of new collectivities in society. Significantly, in the core of such discoveries and advancements, resurgence and articulation and day-to-day functioning of society lies the flame of new knowledge as the key livewire to shape social progression locating itself in the centre of all social dynamics, becoming the pivotal foundation for all transformative thoughts and social actions. This new body of knowledge integrates innovative meaning and world view to these progressions mediating itself with the interplay of conceptual abstraction and empirical realities in society; and fosters new technological, economic and social arrangements therein.

In every stage of its progression, human society has used and developed knowledge and attached emphasis on specific type(s) of knowledge in view of its own need and context. However, the intensity of such use and development of knowledge has been historically

eclectic, and remained socially and technologically circumscribed. Even though at the most basic level of survival, knowledge has remained the integral component of society to observe and process information about changes in the environment, to produce new meaning and articulate its response to the challenge of change, neither all human societies historically have treated knowledge as main societal assets, nor mass-produced knowledge to make optimal use of its resources. Moreover, the capacity of mass production of knowledge has never been recognised or identified as the most important feature of human societies as these have been possible since the end of the last century through the application of Information and Communication Technologies (ICTs) and use of shared spaces for knowledge creation through globalisation. Thus, despite knowledge being the integral part of human progression, it has been seldom used to characterise a society (United Nations, 2005).

As all over the world mind is replacing the muscle, knowledge has become the highest form of power: the 'ultimate substitute' to characterise a new system in human progression. To (Toffler, 1990), 'this new system takes us to a giant step beyond mass production towards increasing customisation, beyond mass marketing and distribution towards niches and micro-marketing, to new forms of organisation, beyond nation state to operation that are both local and global, and beyond proletariat to a new *cognitariat*' (Toffler, 1990). In fact, this is possible only through the engagement of all sections of people in the production and use of knowledge. Thus, the contemporary knowledge society distinguishes itself from the previous societies as the institutions and organisations of this society 'enable people and knowledge/ information to be developed without limits, and open opportunities for all kinds of knowledge to be mass-produced and mass-utilised throughout the whole society'. At its best, it involves all members of the community in knowledge creation and utilisation to improve quality and safety of life, promote business, generate wealth, increase productivity and profit in business through the use of ICTs. Through these processes the present society, unlike the other societies, lays its foundation on two important resources: the people and knowledge that can be developed infinitium. While the former can be developed by cultivating their creativity and enriching their hidden potential, the

latter can also be developed limitlessly by increasing the density of knowledge-rich environments (United Nations, 2005).

In the contemporary world knowledge in its latest avatar, as the key economic resource, has acquired distinctive connotation, usage and significance in an interrelated socioeconomic context that has been experiencing the fast expansion of the philosophy of neoliberalism, economic globalisation and revolution in the ICTs. Most significantly, the emerging socioeconomic context of the contemporary world now is being shaped by the production, distribution and use of knowledge across the globe cutting across the predefined geographical boundaries in juxtaposition with the phenomenal expansion of mass media, and education and innovative mechanisms of mass production of knowledge and its fast dissemination and intensive use in all areas of activities.

Though the knowledge society in its contemporary connotation is of recent origin, it has got a historical trajectory. It emerged from within the institutional and the technological arrangements of industrial societies to bring forth a new social, economic and technological framework of society by harnessing the creative potential stored in the human mind. Historically, the industrial revolution in the seventeenth and eighteenth centuries, which brought a severe blow to the dominance of agrarian economy, and ushered an era of advanced technology, new modes of communication, economic and social organisation and new thoughts and ideals of progress and liberation, and new hope for human wellbeing, paved the way for knowledge society in the early twentieth century in North America and Europe both through its advances and inadequacies. However, the western industrial technology-driven industrialisation that had emerged as the most aspired model for development to the whole world and continued its dominance until the late 1960s as a viable answer to underdevelopment, unemployment, poverty, backwardness, authoritarianism, conservatism, imbalanced economic development and social inequality, political centralism and bureaucratisation, economic corruption and mindless consumerism, social distortion and injustice, environmental pollution and moral degradation, crime and disharmony proved itself inadequate to prevent these problems. Again, the technological and institutional base of this society posited to become highly inadequate to manage its own complex, multidimensional and endemic social problems. As against these backdrops, the growing

intricacies and adequacies of industrial society, the revolution in the information and the communication technology created a space for the emergence of an alternative arrangement 'to manage its complexity through improved human intelligence and advanced technology and to create a new economic sector through exploitation of knowledge whereby productive force could be moved away from hard core industry to knowledge sector' (Splichal, 1994). This arrangement has been envisaged not only to address the inadequacies of industrial society, but also to bring in a viable technological and economic alternative to suffice the need of contemporary society, to widen the socio-economic horizon of collective existence and to give a new direction to the pre-existing societal dynamics of society through the interpenetration of knowledge in all areas of the economic, cultural and political engagements.

As communication technology started experiencing revolution in quick succession, with the innovations in telecommunication in the 1940s and 1950s, launching of the communication satellite in the early 1960s, the early forms of Internet (ARPANet) in the late 1960s, and the massive potential of the information/electronic technologies, computer, Internet, mobile, telephone and the like arrived in the horizon in the early 1970s to lay the foundation of a new economy based on production, distribution and exchange of knowledge, a large part of the globe, initially spearheaded by the industrialised nations, got adopted to these technologies. The adoption to these technologies has been accompanied by the innovation in World Wide Waves in the late 1980s and subsequent upgradation and innovation in the computer, Internet, mobile phone and telecommunication, satellite phone, radio and television technologies, arrival of new communication platforms such as 2G and 3G, new social media such as Facebook, Twitter, blogs, email, Skype, etc., on the one hand, and economic globalisation, change in the nature of the state and thereupon the transformation of the pre-existing economic and social arrangements into a new one, on the other. This unprecedented new arrangement has got diversely described by the scholars as Knowledge Economy, Knowledge Society, Information Society, Information Age, Electronic Era, Global Village, Technetronic Age, Post Industrial Society, Third Wave, and Networked Society and many other such vocabularies.To Machlup (1962), historically as the economy developed and society

became more complex the organisation of production, trade and government acquired an increasing degree of division of labour between knowledge production and physical production. This also marked quite a remarkable increase in the division of labour between pure brain work and largely physical performance in all sectors of the economic and social organisations. Since the mid twentieth century, the knowledge economy has emerged as a distinctive phenomenon by separating brain from physical work (Machlup, 1962) and has been privileging the power of the brain over the body for unleashing creative human potential through the use of ICTs rather than to restrict it (Evans, 2004). The emerging arrangements have pushed society to move forward in the path of new modes of development wherein the elements of labour, matter and energy are combined in work to accumulate knowledge. Many prefer to call it the informational mode of development that has emerged out of the material products from species, and because of the endless development of the symbolic, communicative and informational functions of the human brain (Castells, 1983).

II. Key Dimensions of Knowledge Society

Knowledge society has induced a host of transformative dynamics in society by redefining the usage of knowledge, emphasising on its application and interlocking it with the use of ICTs and trading and commoditising it through globalisation, maximising the significance information/knowledge workers by replacing historical categories like those of the agriculturalists and the industrial workers and increasing local global connectivity.

One of the key dimensions of this society is the shift in its emphasis on the application of knowledge. In this society, 'knowledge' has emerged to occupy the centre stage in the same way 'what coal and iron were to the industrial revolution and the plough was to the birth of agriculture 10,000 years ago' (Toffler, 1980). Knowledge society emphasises on the application of knowledge in all domains of society rather than its pure societal cognition. To Machlup (1962), though 'knowledge' has predominantly remained in the domain of philosopher's task and at times of the sociologists … knowledge has always played a part in economic

analysis.' In the context of the growth of technical knowledge and its increasing applicability, he asserts that knowledge has certainly become an important factor in the analysis of economic growth (Machlup, 1962, pp. 3–4). Similarly, to Drucker (1968),

> until nineteenth century, knowledge and action had almost no contact with each other. Knowledge served the inner man. The 'intellectual knowledge' is what is in a book. But as long as it is in the book, it is only 'information', if not mere data. Only when a man applies the information to do something it does become knowledge.

Herein, knowledge society is characterised by intensification of the connection between knowledge and action.

However, unlike Drucker (1968), Machlup (1962) makes no distinction between knowledge and information; and in his definition of knowledge he includes both the scientific and ordinary knowledge. To Machlup (1962)

> we may designate as knowledge anything that is known by somebody and as production of knowledge any activity by which some one learns of something that he has not known even if others have; (and) producing knowledge will mean, not only discovering, inventing, designing and planning, but also disseminating and communicating…

His understanding of knowledge is thus extensive and inclusive: 'knowledge need not be knowledge of certified events and tested theories; it may be knowledge of statements and pronouncements, conjectures and hypotheses, no matter what their status of verification may be; all knowledge regardless of the strength of belief in it or warranty for it' is knowledge (Machlup, 1962). This inclusive conceptualisation of knowledge, however, does not undermine the emerging dynamics of application of knowledge in the present era, rather shows an increasing scope in such application.

The United Nations (2005) distinguishes between information and knowledge by highlighting the difference between the explicit and tacit forms of knowledge. It recognises

> 'explicit knowledge' as information that 'refers to justified (true) belief that is codified in formal, systemic language.

> It can be combined, stored, retrieved and transmitted with relative ease and through various means, including modern ICT'. The tacit knowledge on the other hand 'is a fluid mix of framed experience, values, contextual information…. It is highly personal and hard to formalize, making it difficult to communicate or share with others. Subjective insights, intuitions and hunches all fall into the category of tacit knowledge'

The explicit knowledge according to UN is information. It is like the tangible, visible part of an iceberg that can be observed, accessed and shared by others, while the tacit knowledge intangible, invisible, as if hidden 'under the water' and can be accessed on the first-person basis only.

The knowledge society, according to UN, is to recognise both categories of knowledge as one is available 'to do' while the other is available 'to be' (2005).

In essence, the knowledge society blurs differences between ideas, data, information and knowledge. All human societies function to satisfy their social, economic and cultural needs, and respond to the forces of social change and transformation based on their own skill and knowledge, the state of technological development and innovation. The inherited human tendency to know, explore and experiment suggests that each and every segment of population of a society has been endowed with the capacity to generate ideas, segregate data and information and develop skill and knowledge. While some bases of knowledge, skill, information, data and ideas are localised and inherent to the society concerned, there are also others having been acquired through interaction with a wider world or have got penetrated as exogenous agency.

In general, parlance relations between 'ideas', 'data', 'information' and 'knowledge' are diversely understood by many scholars. At times, these are understood interchangeably, while in another context to represent distinctive connotations. These are also understood in a relational and hierarchical order. In fact, for many, hierarchy of knowledge has become a reality in knowledge discourse. In explaining the hierarchical relations between ideas, data, information and knowledge, it is generally accepted that ideas are conjectures, imaginations, hunches and impressions; 'data

are simple facts; information are processed data combined in meaningful structures; and knowledge is meaningfully refined and validated information. This relation generally moves upward that sees ideas to be prerequisite for data', 'data as a prerequisite for information and information are a prerequisite for knowledge' (Tuomi, 1999). Hence,

Table 1.1 *Features of Knowledge, Information, Data and Idea*

Knowledge	Interpreted, structured, verified, meaningful, transformed, and refined information, or higher forms of information
Information	Structured, meaningful, relevant, purposive and organised and processed facts or data with meaning, data endowed with relevance and purpose
Data	Observable and objective facts, statistics, symbols
Idea	Hypothesis, conjecture, nonqualified statement, part factual or nonfactual, imagination, etc.

there is a transition and a continuum. The essential features of idea, data, information and knowledge as shown in Table 1.1 are very often viewed in a hierarchical order.

Knowledge hierarchy however is not stagnant. The hierarchy of idea–data–information–knowledge could be turned the other way round in the interactive context as neither ideas, nor data, nor information, nor does knowledge stand in isolation. Rather, idea takes shape and data emerges only after the availability of knowledge and information; and that an idea can emerge only if a meaningful structure or semantics is first fixed and then used to represent information and thereafter knowledge. Following Tuomi (1999), it may be argued that ideas cannot be shaped independent of or devoid of data, information and knowledge. Instead of being raw material for information, data emerges as a result of adding value to information by putting it into a form that can not be automatically processed (Tuomi, 1999). Herein, just below/beyond the data, there are ideas having two-way interactions. While it may be the foundation for data leading to the formation of a body of information and knowledge thereafter, it also results out of formation of information and knowledge.

This discourse depicts that the relations between knowledge,

information, data and ideas are intrinsic though there are hierarchies and this hierarchical order can be reversed. Though knowledge is highly validated, refined and actionable and decides the course of its praxis, it is unalienable from ideas, data and information. In the context of knowledge society their relations are not discrete, rather more of a spiral cyclical that develops a higher spiral cycle continuously than to have a vicious or a linear one. They are a part of continuum and are subject to multiple uses through their commodification. In the knowledge society thus ideas, data, information and knowledge are put in a common basket called knowledge for application and commodification. This basket includes knowledge of all pursuits, such as economic, social, cultural, political, religious/spiritual, and repackaged as marketable commodity for employment, for the generation of wealth and power. Locating itself in the intersectionality with globalisation and ICTs, knowledge society generates a market-driven flow that mixes ideas, data, information and knowledge together and converts them into a tradable commodity for exchange both within and outside the national territory. It invites innovation, experimentation, recycling, reproduction, assimilation and repackaging of knowledge as an economic item for trade and business. A vast segment of this body of knowledge, skill, information, data and ideas especially those of the localised ones remain mostly unrecognised in the wider society due to the lack of proper certification and experimentation, even though they are a part of cultural traditions of society. Knowledge society however has taken shape based on those components of knowledge, skill, information, data and ideas that are available for wider commercial use and exploitation, and have their applicability.

The knowledge society lays its foundation on commodification of knowledge. Knowledge, information, data and ideas as the raw materials of knowledge society are used to generate profits 'for producers, manufacturers and distributors' that reach out, after a series of transformation and commercial transaction. This transformation is described as the transformation of knowledge into information or vice versa. To Hornby and Clarke (2003), knowledge gets transformed into information through several processes of value addition. As value is added to the original materials (metal, plastic, fabrics, etc.) at each stage of their processing, value is added at each stage of processing of

knowledge (the raw material) for getting it transformed into information and making it a marketable commodity (Hornby and Clarke, 2003). In the wake of neoliberal market expansion, such transformation has been furthered at a massive scale. With mass commodification of knowledge/information, knowledge/information economy has emerged to be a reality as the

> primary sector of economy that engaged itself predominantly with the activities of production, distribution, transaction, handling of hardware and software, and supporting facilities of knowledge/information. It is now world widely viewed that advanced economies have shifted further from manufacturing to service provision, and have become increasingly dependent on the generation and the dissemination of knowledge/information for their economic well-being (Porat, 1977, pp. 6–7).

The relatively less-advanced economics of the world are now in the process of following the similar trend of being knowledge driven.

ICTs and globalisation are indispensable for sustenance and expansion of knowledge society. It is now widely recognised that the ICTs are the present-day equivalent of electricity of industrial era (Castells, 2001) and that ICTs and globalisation are crucial constituents of knowledge society and have emerged to be indispensible for its sustenance and expansion. Since the 1960s, the ICTs have been providing the crucial material basis for emergence of information society (Castells, 1996) through the extensive use of computer, Internet, mobile phone, entertainment devices and varieties of digital communication technologies in all the domains of life. These have come into play to redefine the ways of living and working in present society. In fact, the late twentieth century revolution in information technology has posited the humanity to 'face a quantum leap forward, the deepest social upheaval and creative restructuring of all time' (Toffler, 1980; Toffler and Toffler, 1995). Such revolution facilitated people to be part of a large-scale diffused social network through ICTs paving the way to replace the preexisting 'mass society' characterised by large-scale concentration of people with copresence and face-to-face communication (Dijk, 1999).

The ICTs that have driven progress in every field of activities, such