

# Information and Knowledge Management for Development

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## Abstract

The confluence of Information Communication Technology (ICT) and Knowledge Management for Development (KM4D) creates a robust partnership in dwelling upon development targets of a nation. While problems of digital uptake brought about by digital divide continue to hound information-poor nations of the Global South widening the gap mostly to the benefit of Global North countries, digitization process creates economic opportunities that alleviate poverty conditions if harnessed properly and propel economies much higher through continued utilization.

While development equates with poverty alleviation as its main target, KM4D must propel regional economies benefiting from integrated knowledge base to a much higher economic growth after hitting poverty alleviation targets. In other words, KM4D can immerse with a robust community of practice through knowledge sharing practices while adopting business strategies in order to achieve economic wealth. In principle, innovators and distributors transcend economies in a given place as a network of creators. Lastly, ICT is a viable component in economic development where its utilization and management should coincide with KM's organizational outcomes as a form of synergy.

Keywords: digitization; ICT4D; information management; knowledge management; KM4D.

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## 1. Information Management and Knowledge Management

Information Management (IM) is the collection and management of information from one or more sources and the distribution of that information to one or more audiences (Kaur, 2004). Knowledge Management (KM), on the other hand, is the discipline that promotes an integrated approach to identify, manage, share and leverage an organization's knowledge and information assets through the policies, measures, strategies, applications and technologies (Kapur, 2020). IM is mainly concerned with the provision of stored and retrieved information using tools such as facts and figures considered as data components. It is generally argued that IM is not human-centric because of its lack of context, however, information is easier to identify, control and transmit. KM, on the other hand, has perceived organizational outcomes using tools that have robust impact to the members of an organization. Between the two, there is a greater challenge in the management of knowledge because it can reside in a person's head (tacit knowledge) whereas information can easily be codified, hence, easier to manage.

From an organizational point of view, KM is more holistic in its approach as it considers many aspects of knowledge utilization and management emanating from the different areas of an organization. For example, a person's past knowledge making its way into organizational process has something to do with how such knowledge evolves in social interaction among peers. When tacit knowledge is converted through socialization, it becomes part of the organizational culture and process which can also serve as an information to seek further knowledge. Thus, it implies that KM considers supporting conversations as a humanistic approach manifested in interaction making it a human-centric process. But, it cannot be undermined that IM is a necessary input to KM as information is a valuable component of knowledge. While it is easy to say that KM entails a more complex and dynamic process of knowledge utilization such as using and sharing as a general process, IT infrastructure, for instance, as an IM tool, with its capacity to store and process information is important in ensuring the success of KM.

Due to the complexity of KM processes, it can be argued that organizational learning, systems thinking, and community of practice are examples of KM strategies that require knowledge for the most part. Leadership is key to

any KM success because in any of the aforementioned strategies and activities, human communication pervades in KM where leaders should possess communicative and interactive skills in order to manage the flow of knowledge.

Finally, the measurement of IM, because of its reliance on data, tends to be traditionally quantitative and objective while KM, as a human-centric process deals with more complex management of individuals within an organization considering knowledge as perception and worldview. Also, KM needs robust managerial expertise in handling such diverse perspective and worldview including motivation and willingness of organizational members.

IM and KM have been around for a long time now with applications flowing from organizational to national levels. Hence, the case of Information Communication for Development (ICT4D) and Knowledge Management for Development (KM4D) are worth pondering.

### 1.1 ICT4D and KM4D

Information Communication for Development (ICT4D) is an initiative in bridging “digital divide” (technological haves and have-nots) in order to facilitate the economic development of a certain place. It is unequivocally argued that information-poor countries in the Global South remain economically struggling due to technological deprivation while Western Global North countries are information-rich so that economic development alongside economic growth continues to flow. Thus, converging both economies requires ICT intervention such that the digitization process among Global South population will eventually catch up with the growing economies of Global North.

The argument is highlighted in technological determinism specifying the role of technology in an economic process. Technology per se, however, can be construed as “a medium, not the message” which argues that it is a tool in the entire economic process. Properly utilized, it becomes a potent factor otherwise its dysfunctionality due to obsolescence or underutilization can disrupt development altogether. Nevertheless, society at large benefits from ubiquitous technology for as long as it is spread elsewhere and not only confined to the urban centers.

For instance, beyond 2015, ICT4D and World Summit on Information Society (WSIS) cover a list of future priorities after the retirement of Millennium Development Goals (MDGs). As discussed by Heeks (2014), the following areas need pondering:

1.1.1. Potentially Well-Covered ICT4D Areas. In the internationalization of development agenda with ICT utilization providing infrastructure, the notion of technovation pervades connoting ICT’s continued innovation to address new problems of a digital world. Indeed, constant update of digital tools that serve changing ICT4D agenda from different nations with different development levels and agenda require such technovation in order to pursue. Following this trend is a robust “data revolution” which begins with information’s data structure. For instance, Molony, (2012) identifies big development data from the developing countries looks into mobile phone call records on migration; open development data that citizens can access to; and real-time data that are simultaneous with real-time situation or at least near real-time so that development efforts have currency.

Other areas of concern include ethics, language, learning, e-government and e-agriculture where the latter have been identified as important ICT4D topics. It will also be noted that ICT4D has been critical in agriculture in Southeast Asia with digital tools affecting development despite the issue of digital divide still haunting many societies.

In the implementation of future ICT4D concerns, development strategy that is participative and multi-stakeholder in approach should continue to affect organizations to achieve desired results.

1.1.2. Informatics-Centered ICT4D Priorities. At the core of this discussion is “data” which was already discussed in the foregoing priority area. The mentioning of real-time data that expedites information sharing of developmental concerns is made possible, strategic plans will be discussed as the situation unfolds providing for immediate solutions rather than waiting for so long a time when the solution proposed is no longer relevant. However, one advantage it relates to is the hastiness of conclusions drawn from fragmented, real-time data that may not provide long-term solutions because of the inability to capture a holistic picture of the situation.

1.1.3. New Development-Oriented Priorities for ICT4D and WSIS. Foremost of all concerns is adapting to climate change, the environment that affects not only the Global South but all nations of the globe. ICT plays an important role in adaptation, mitigation among other concerns since basic to this idea is ICT tools are also responsible to Mother Earth's degradation. Hence, the concept of technovation continues to manifest in innovating technology that renews energy without polluting the environment. Next important issue is on sustainability that clearly is at the core of environmental protection.

KM4D, on the other hand, is an organizational strategy that heavily relies on KM practices for development both locally and internationally. One of its applications is SEAMEO-SEARCA's approach to KM on eDevelopment in poverty elimination and sustainable development where KM is not really familiar with (Flor, 1986).

KNet or Knowledge Network is a proposed electronic network of University Consortium members, partner institutions, and knowledge groups which would function as a complete Intranet knowledge management systems (Flor, 1986). Such platform is designed to formulate solutions related to development that afflict members within the Southeast Asian region. Its pivotal role in agriculture has made KM4D a viable process for social amelioration. It cannot be undermined that being a KM initiative, the importance of knowledge sharing among members through community of practice, research and development initiatives among others.

## 1.2. Fifth Generation KM4D

The discussion on KM4D brings into light the notion of the 5<sup>th</sup> generation of KM4D identified as "development knowledge system" or "developing ecology" (Cummings et al, 2013) with the following characteristic features:

1.2.1. Multiple Knowledges and multi-sector processes. Due to complex societal problems besetting individuals and institutions, multiple perspectives are the key to finding holistic solutions. This enshrines multiple knowledges emanating from various sectors as in the case of community of practice, networking, collaborative discussions and many other platforms for knowledge generation. The necessity of such process ascertains complex, variable and differing points of views that make knowledge an emergent process.

1.2.2. Development of knowledge commons. Fifth generation KM4D views knowledge that is shared by all rather than confined to specialized practitioners among others, that impede the flow of knowledge for developmental pursuits.

A new way of looking at knowledge as a shared resource, a complex ecosystem that is a commons – a resource shared by a group of people that is subject to social dilemmas (Hess & Ostrom, 2007).

It is an unequivocal statement, indeed, to assert that knowledge that flows infinitely among users is a testament of today's practice of connectivism, with the proliferation of digital technology making individuals more connected globally at a faster speed and that knowledge lifespan is essentially reduced than its previous level. Nevertheless, the assumption of digital commons assures knowledge utilization as a public resource for public consumption deemed at ameliorating social conditions in the attainment of development.

1.2.3. Role of knowledge in endogenous development. The core of this principle states that knowledge resides endogenously (internally in communities) that facilitates endogenous development. Indeed, indigenous and local knowledge as a cultural emblem is a sacrosanct expression of authentic experience that is relevant in finding solutions to problems that reside locally. Despite all the global efforts many individuals consider as a result of global thinking, the need for localized thinking that develops contextualized knowledge should not be undermined even so. This argument is related to the concept of tacit knowledge that resides in the head. Endogenous knowledge is an example of a community of tacit knowledge that community people often use in their poverty alleviation efforts that many of us fail to listen.

1.2.4. Emergence and complexity. Systems thinking emphasizes the interrelationship among the different parts of a system all functioning in an integrated and holistic manner where such relationship is non-linear, meaning the sum of all the parts of a system does not make it a system but a higher property emerges from simple aggregation.

In relation to knowledge, it presupposes that knowledge within a system is dynamic, emergent and highly adaptive rather than static. This emergent property makes knowledge imbued with capabilities for generation and transformation in finding solutions to various development issues. In effect, the quagmire of poverty becomes a quagmire of knowledge if the latter is not emerging and solution-focused.

### 1.3. Implications

With all the narratives of 5<sup>th</sup> generation KM4D sweeping societies, it cannot be undermined that it sprang from ICTs important contribution especially in the 1<sup>st</sup> generation which characterized knowledge as a commodity until KM evolved in organizations as an asset where knowledge was shared and even utilized by social media for later development. Following this, the attainment of 5<sup>th</sup> generation is more meaningful when combined with transdisciplinary research that looks deep into relevant societal issues such as poverty alleviation, health improvement, socio-infrastructure development discussed and acted upon by various perspectives from different specialists including the community people. Real-world issues as empirical data ground such research initiatives rather than placing KM4D research as theoretically rich but divorced from everyday reality.

After discussing 5<sup>th</sup> generation KM4D, a holistic understanding of KM4D integrating all generations will have to deliver what it is supposed to deliver – development. Knowing that KM's fundamental element is knowledge and that knowledge must be generated and shared, communication plays a crucial role in making sure knowledge distribution is optimal. Thus, it ascertains that KM should integrate with Development Communication (DevCom), after all both fields have one thing in common, the goal of achieving development through communication which becomes fulfilling when knowledge base is robust and functional through the efforts of KM. For instance, Southeast Asian Sustainable Agriculture Knowledge Network (SEASAKnet) implemented in October 2000 by SEARCA primarily designed to develop electronic dissemination of agriculture-related information has faster realization of its goal when DevCom intervenes with communication tools and strategies for policy considerations discussed among members within KNet comprising various stakeholders engaged in community of practice. The proliferation of digital technology, indeed, makes KNet a suitable platform for communicative assertions forming knowledge.

### Conclusion

While development equates with poverty alleviation as its main target, KM4D must extend beyond the predicament such that regional economies that will benefit from integrated knowledge base can propel economies to a much higher economic growth beyond poverty amelioration. In other words, KM4D can also indulge in upgrading business strategies as a continuous flow because that is how economies achieve wealth. It cannot be overemphasized that it is a network of knowledge creators, innovators and distributors that should transcend economies in a given place. In the international arena, KM in its effort to effect sustainable development requires KM systems that analyze the context (external) and the organization (internal), evaluating the present and future needs (Bosch, 2019). Alongside KM4D is optimal application of ICT4D so that the staggering digital divide will not be a hindrance anymore. ICT is a viable component in development and its utilization and management should coincide with KM's organizational outcomes as a form of synergy.

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