Where Are We On Information Infrastructure? – A Systematic Literature Review

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ABSTRACT

The 20th century saw the emergence of computers as the greatest form of information technology that bore with it the seeds of drastic change, such as utilizing digital technologies as infrastructures in complex socio-technical contexts. Through a systematic literature review of peer-reviewed articles in leading IS journal, this paper seek to analyse the different theoretical models, empirical data and conclusions relating to information infrastructure research. The study hope to bring to light relevant themes in information infrastructure literature for the purpose of classification and to gather knowledge on the current state of with each of these themes for future research directions.

Key words: ICTs, Information Infrastructure, Literature Review, Ghana.

1. BACKGROUND TO THE STUDY

The dissemination and accessibility of information is an underlying factor for sustainable economic, political, communal, and social development because without information, individuals certainly cannot function ultimately leading to a non-functioning society (McNutt, 1996). Information infrastructures such as the telephones, televisions, radios, computers and fax machines exists (though becoming rapidly outmoded) to receive, store, process, perform, display and transmit data, text, voice, sound and images in homes and businesses throughout a society everyday (McNutt, 1996). Thus, Tilson, Lyytinen, & Sørensen (2010) defined information infrastructure (II) as the basic physical and organizational structures needed for the operation of a society or enterprise or the services and facilities necessary for an economy to function. Several properties characterize II, hence Hanseth & Bygstad (2015) summarized it as an evolving, heterogeneous socio-technical system based on standards that allow for scaling and interoperability shared by a continuously increasing members of a community, including vendors, users and staff.

2. STATEMENT OF PROBLEM

Digitization has enabled the interconnection and integration of information infrastructures via technologies such as, fibre optics, microwave network, satellites and other communication technologies into an advanced high-speed, interactive, broadband, digital communications system such that users are able to communicate and interact with each other in digital forms. As a result the information infrastructure has received substantial scholarly attention (Akkaladevi & Luo, 2008; Constantinides & Barrett, 2014; Hanseth & Lyytinen, 2010; Mathew & Cheshire, 2017; Nyrhinen, 2006; Pipek & Wulf, 2009; Ribes & Finholt, 2009; Rolland & Aanestad, 2003). However, it is rare to find a study that consolidates all the other existing studies to provide knowledge on what is known so far with regards to information infrastructure literature and directions for future research.

3. OBJECTIVE

This study therefore seek to improve understanding on the current state of knowledge by presenting a meta-analysis of information infrastructure research with the aim of taking stock of literature, their theoretical approaches, research methodology, geographical distribution, level of analysis and trends over the past 2 decades.

4. PROPOSED METHODOLOGY

The study adopts a structured approach to determine the sources materials for the review (Webster & Watson, 2002). Leading journals and conference proceedings databases will be queried using keywords such as digital infrastructure, information infrastructure, IT infrastructure and national information infrastructure to retrieve an initial pool of articles to be considered for the review. Next there will be a backward and forward review of citations for articles relevant for the analysis to ensure that a relative complete census of relevant articles are accumulated. A concept-centric approach to literature review will then be used to synthesize the literature.

5. NEXT LINE OF ACTION & CONCLUDING REMARKS

Download and analysis of relevant articles for this study will be conducted over the next three months. Presentation of findings and discussion is expected to be done in January 2019 with a complete comprehensive review paper on the information infrastructure topic made ready by the end of January 2019. It is my hope that as the study reveals knowledge gaps that exists in this research area, not only will scholars understand them, but it will also enhance general understanding of the trends in information infrastructure research.

6. SIGNIFICANNCE OF THE STUDY

The study will contribute to the body of knowledge on information infrastructure by helping other scholars to make sense of the accumulated knowledge so far thereby providing directions for future research.

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