

Health Information Systems Interoperability: Towards a Managing as Designing Approach

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Abstract

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Integrated digital healthcare systems promise improved quality public healthcare and patient continued care among others. However, these have been hampered by various challenges including limited data exchanges between health information systems (HIS) and inadequate collaboration among healthcare centers and healthcare professionals. The devastating healthcare interoperability state has been made evident by the COVID-19 global pandemic data sharing challenges. Nonetheless, such challenges can be overcome through collaborative digital healthcare initiatives that aim at integrating digital healthcare systems. Hitherto, a number of HIS are designed with no collective vision of sharing and exchanging information, and again, there is limited knowledge about the HIS interoperability implementation process.

To enhance HIS interoperability implementation, previous scholars have reiterated the salience of context and managerial capabilities in the design process. Against this backdrop, the overall purpose of the thesis is to elucidate how health information systems (HIS) interoperability implementation can be enhanced through contextual understanding and managing as designing (MaD) perspectives. Using an interpretive case study approach, two cases of HIS implementation have been studied, one in Sweden and the other in Uganda. The empirical investigation shows that the combined perspectives contribute to our understanding of HIS interoperability implementation, through the proposed MaD approach to IS interoperability implementation. In addition, the contextual understanding perspective led to the discovery of four critical factors and two guiding principles. The critical factors include having a collective interoperability design goal, managing the interoperability implementation process, analysing the context of interaction and determining an appropriate interoperability principle. The discovered two principles; include the minimum requirements principle and the informatics focus vs technology focus principle, these can guide implementers to delineate a context-appropriate interoperability solution.

The theoretical contribution consists of a new stance on how HIS interoperability implementation can be enhanced through embracing a MaD perspective. Thus, the proposed approach emphasizes a design attitude that supports implementers to take into consideration the context of interaction; which includes information systems as well as actors working together. The approach seeks to motivate healthcare managers to collaborate with HIS designers to improve healthcare interoperability. Again, through the design attitude implementers can analyse the context of interaction and appropriate an interoperability solution during moments of sense-making and decision-making. The proposal of a design attitude is intended to inspire implementers into a more reflective problem-solving attitude as opposed to relying on a rational decision-making model. Taken together, the thesis contributes knowledge on how IS interoperability implementation can be enhanced through contextual understanding and managing as designing perspectives not only in healthcare but also in similar complex contexts.