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Literature reports endemic failures of health information systems, and other software systems in the context of developing countries as a result of design-reality gaps, problems of sustainability and scalability. This is often related issues to insensitivity of designers to local realities and lack of flexibility of design products which are fixed in time and space. Pointing to the limitations of traditional system design practices and mechanisms of generification by a single supplier in overcoming these issues, the thesis articulates a new concept called “open generification” for an improved theoretical understandings and practical guidances.

With generification referring to processes of designing globally generic and locally flexible software systems, the notion of openness relates to actors and contents of generification. With actors of generification, the emphasis is to open up the process of generification for external stakeholders. This implies establishing mechanisms of coordination for effective collaboration towards a common goal. Openness in content relates to the importance of delegating some level of control for situated actors in the course of defining what goes in the generic software.

A key aspect of open generification is the argument that innovation is increasingly becoming a distributed activity that takes place in ecosystems. It is important move away from a closed form of innovation controlled by a single supplier to an open innovation collaborated by a network of actors – including both suppliers and consumers. It is increasingly becoming difficult for a single supplier to run things top-down and be the master and creator of all. With the current advancement of computing resources, local actors are better suited to decide on realities on the ground than a remote supplier. Complementing to the existing top-down approach, the concept of open generification brings a bottom-up approach where local level innovations are fed back to suppliers at global level for formalizations and inclusions to the generic software. To facilitate this, the thesis suggests for mechanisms of embedding (for implementing the global solution in local contexts) and dis-embedding (for taking local innovations back into global solutions). The thesis demonstrates these mechanisms using a software system that has worked in the public health context of many developing countries.