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The healthcare system is under immense pressure to deliver more cost effective solutions with improved health outcomes. In developed societies healthcare is managed and operated by highly complex systems assembled by several more or less interconnected stakeholders. By exploring the healthcare system, outlining its stakeholders and investigating its most eminent challenges it is clear, that the biggest healthcare challenges are not select diseases or technologies, nor positioned within the individual stakeholders, but actually associated with the healthcare system itself.

While there has been tremendous progress within the art of medicine and technology during the last century, there has been relatively little progress in optimizing operations or measuring the quality and productivity of healthcare; and engineers has contributed only marginally to improvements in the operations of healthcare delivery. However, by embracing different engineering methods, healthcare engineers can work on healthcare challenges at several levels spanning product engineering to engineering systems. Thus, a focused approach to meet the needs of the whole healthcare system is mandated; one such approach could be a strategic investment Healthcare Engineering.

Healthcare Engineering could contribute to the development of a more cost effective healthcare sector with improved health outcome. This goal can be accomplished by embracing a cross disciplinary corporation between stakeholders in the healthcare system and engineers; the healthcare professionals can bring their needs and challenges to the engineering community, which then in turn can provide valuable solutions to the problems. Interestingly, the center can build on a wide range of different engineering strongholds, and the center can facilitate an active and valuable interaction between the technical sciences, the natural sciences and medicine; between basic and applied research; between researchers and students, and between the university and the society.

The concept of Healthcare Engineering ensures an efficient linking of research and innovation, taking both market aspects as well as technological perspectives into consideration. The key driver for the concept design is the value generating process - bringing solutions to challenges in the healthcare system. What are unique to the value chain described here, are the needs/challenge evaluation and selection steps; supported by the health/cost effect assessment capability, and the business development step; supported by the target product profiling capability. The evaluation process should be a three-step process, first dealing with the potential value creation opportunity, secondly with the technical mission and thirdly evaluating the solution business opportunity. The outlined process will at the same time serve as a ‘portal’ for healthcare professionals to the engineering community, thereby facilitating the interaction between the healthcare system and relevant scientists and infrastructure.

The proposed organizational center design takes advantage of different stakeholder resources, cultural differences, strategic priorities and incentives. Furthermore, the suggested organizational setup aims at strengthening management’s attention to the value creation process. In order to anchor responsibility close to operations and help emphasizing the unique purpose of each group; being needs finding, product development or research, the individual groups are designed to work as autonomously as possible.