

The Center for Integration of Medicine and Innovative Technologies (CIMIT): A Proven Model to Speed the Cycle of Healthcare Innovation

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Abstract—CIMIT is a Boston-wide consortium of premier clinical, research and academic institutions dedicated to improving patient care through application of innovative enabling technology.

I. INTRODUCTION

Innovation relates to the transformation of inventions or discoveries into products, processes or organizations that change how the world works, how people organize themselves, how they conduct their lives or alters their perception of society and is recognized as essential for sustainable economic growth and development [1, 2]. Traditionally, innovation has been a process essentially internal to an organization with reliance on internal resources and few outside interactions. The limitations of this approach, particularly in technology-driven industries, has become apparent in the face of the rapid increase, diffusion and accessibility of knowledge; the global interconnectivity of information and people; and the increasing cross-fertilization and inter-dependence of technological disciplines. These changes have stimulated an alternative framework for innovation, termed Open Innovation [3]: the purposeful inflow and outflow of knowledge to accelerate internal innovation, and expand the markets for external use of innovation by seeking to harness the combined intellectual creativity and knowledge of individuals within and outside of an organization based on teams and individuals collaborating across internal and external boundaries.

II. CIMIT: A CENTER FOR HEALTHCARE INNOVATION

The many challenges faced by healthcare systems in providing safe, effective, accessible and affordable high quality healthcare for patients present multiple opportunities for innovation [4]. The Center for Integration of Medicine and Innovative Technologies (CIMIT) has been a laboratory for Open Innovation in healthcare innovation since its inception in 1998. CIMIT, a “center-without-walls”, was born to address the siloed nature of research, the need to rapidly translate research into clinical practice and the belief in the power of multi-disciplinary collaboration. It has grown from its original core membership (Massachusetts General Hospital, the Brigham and Women’s Hospital, MIT

and the Charles Stark Draper Laboratory) to encompass thirteen of the premier clinical, research and academic institutions in the greater Boston area. Critical collaboration and support has been provided by the DoD’s Telemedicine and Advanced Technology Research Center, which recognized the value CIMIT could bring to warfighters and their families. The CIMIT model is not specific to the unique nature of Boston; rather it is a model that has been successfully replicated with some adaptation elsewhere (University of Manchester, UK (www.mimit.org.uk) and Singapore’s A*-STAR) where there is a need and desire to create a community of innovators to achieve excellence in healthcare and serve as a catalyst for economic growth.

III. THE CIMIT METHODOLOGY: FIND, FUND, FACILITATE

CIMIT has created a community of innovators by (i) promoting and facilitating interconnectivity, communication and interactions between communities of scientists, engineers and clinicians across the consortium’s different institutions; (ii) attracting and supporting “rising stars” in engineering and medicine to pursue careers in translational medicine; and, (iii) identifying and supporting ideas from the CIMIT community with high impact potential in clinical care that would be too early for commercialization or to be supported by traditional funding sources. To address the challenges of transitioning early-stage clinical innovations to industry, CIMIT created the Accelerator program to facilitate this hand-off within 12 to 18 months by investing expert facilitation, money and other resources needed to achieve a complete commercialization strategy. CIMIT has populated the Accelerator team with successful serial MedTech entrepreneurs and business leaders that bring the essential guidance to create an integrated and comprehensive launch plan including working prototypes, identified customers who are “ready to buy,” and an “investable” team with a business plan that is fundable by outside parties (investors, established businesses or licensees). The program has multiple successes to-date.

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