Chapter 13
The Role of Crowdsourcing in the Healthcare Industry

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ABSTRACT

Crowdsourcing has a role to play in solving healthcare-based problems as it can tap into a vast pool of global medical knowledge. This chapter first categorizes the various problems in the healthcare industry. It then describes the differences in various medical traditions in solving medical problems. The chapter also discusses the challenges in identifying the ideal medical solution. It notes the various types of obstacles to adopting effective healthcare solutions and suggests crowdsourcing solutions that could build up an impetus for bringing about positive change. Finally, the chapter emphasizes the potential of crowdsourcing to disrupt old ideas and introduce new ones as well as make a significant improvement in the social quality for different population groups.

INTRODUCTION

The twenty first century has seen the advent of technical advances in storage, transmission and analysis of information. This has had a profound impact on the field of medicine. However, notwithstanding these advances, various obstacles remain in the world regarding the improvement of human lives through the provision of better health care. The obstacles emanate from the demand (i.e., the problem) as well as the supply (i.e., the solution) side. In some cases, the nature of the problems might not have been correctly identified. In others, a solution to a problem could be known only to a small niche of the global population. Thus, from the demand perspective, the variety of health care issues can range from the quest for a cure for a rare illness to the inability to successfully implement verifiable preventive measures for a disease that affects pockets of the global population. Alternatively, from the supply perspective, the approach to a host of health issues might vary because of fundamental differences in both medical philosophies and organizational policies.

In many instances, effective solutions to health care problems are lacking because of inadequate global knowledge about the particular disease. Alternatively, in other cases, a solution might exist but the relevant knowledge about it might only be available to selected pockets of the global medical community. Sometimes, the barriers to the transfer of knowledge might have their root causes in ignorance or prejudice about the initiator of the cure or solution. However, the advent of information technology has now provided an opportunity for individuals located at different geographical locations to collaborate on solutions to various problems. These crowdsourcing projects now have the potential to extract the "wisdom of crowds" for tackling problems which previously could not be solved by a group of experts (Surowiecki, 2014). Anecdotal evidence suggests that crowdsourcing has achieved some success in providing solutions for a rare medical disease (Arnold, 2014). This chapter discusses crowdsourcing's potential to solve medical problems by designing a framework to evaluate its promises and suggest recommended future paths of actions.

The chapter consists of six sections. The first section builds on a phrase used by former US Defense Secretary, Mr. Donald Rumsfeld, in the context of Iraq, to devise a classification scheme for all possible medical issues likely to be faced by health care professionals. This categorization provides a convenient way to evaluate the myriad health care problems affecting the global population. The second section summarizes the relevant dimensions that differentiate the various medical approaches to health care problems. These are rooted in either different medical philosophies, governmental approaches, ingredients used, etc. The next two sections discuss two different types of problems facing the health care industry. The third section discusses the various challenges facing the dissemination of knowledge in the health care industry. This section discusses possible solutions for overcoming problems specific to these knowledge-based deficiencies. The fourth section discusses an entirely different type of problem that also faces the health care industry. This problem emanates from the resistance to adopting more efficient health care solutions because of resistance from different sectors in society. These include various parties, perhaps inadvertently, resisting the adoption of new methods or systems of disseminating medicine within society. The next section summarizes the approach of some popular crowdsourcing sites for dealing with health care issues. This section suggests incorporating some of the existing approaches in crowdsourcing but also expanding the sources of inputs to include individuals from outside the frontiers of traditional Western medicine. The challenge is to aggregate these suggestions from myriad disciplines to a cogent whole using transparent methods. The final section concludes the chapter with a discussion of crowdsourcing's potential to evolve beyond the initial stages and be a force for positive changes for the quality of life around the world as well as an engine for disruptive innovation.

A CLASSIFICATION OF HEALTH CARE INDUSTRY CHALLENGES

In February 2002, the then US Defense Secretary, Donald Rumsfeld (2002) used the terms ----- the "known knowns", the "known unknowns" and the "unknown unknowns" when discussing the situation in Iraq. Later, philosopher Slavoj Zizek (2004) added another term, the "unknown knowns" as a fourth classification. While, both Rumsfeld and Zizek used the terms to discuss the US involvement in Iraq, this classification scheme is used as a springboard in our chapter to classify the myriad problems facing the global health care industry. These four classes allow us to evaluate the different types of challenges facing the health care industry and help evaluate how modern methods of knowledge sharing in crowdsourcing can provide solutions to these problems.

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