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Research concepts

The following concepts are derived from current discussions in the Emerging Technology Applications group at Humana's Innovation Center and are by no means complete or represent Humana's or the Innovation Center's position on these emerging technologies. These concepts are, therefore, meant as a starting point for discussions rather than directions or suggested roadmaps.

Social Robots

Depression through isolation is a major risk and cost factor for our elderly population. Will connectivity and communication technologies can help friends and family stay connected there are many hours in the day where such connectiveness will not be available. Moreover, it is important for the social community around elderly to be aware of when getting in contact with the elderly is required. However, traditional communication and monitoring technologies often feel intrusive to the elderly's life and are, therefore, avoided, rejected and 'tricked'. Social Robots might be able to overcome this challenge by providing both emotion-based companionship as well as connectivity back to the community. If the elderly is motivated to embrace the Social Robot through emotional bonding – addressing also the issue of isolation, then it is more likely that they will stay close to it as much as possible as well as accept the associated communication capabilities. Sensors embedded in the robot might also be used to ubiquitously measure the elderly's vital signs and activity patterns.

Assistive Robots

A large cost factor associated with in-hospital surgeries is the time spent in the hospital for post-surgery rehabilitation. One main reason for extended in-hospital rehabilitation needs is the lack of pre-op preparation of the patient with respect to the post-op rehabilitation requirements. Education has only limited effect. For instance, a patient scheduling a knee surgery is more often than not physically ill prepared to move their body for a few months on crutches requiring increased upper body and arm strength. Developing such physical prerequisites on a case-by-case basis and applying it in a personalized way calls for a cost-effective, programmable solution that ideally can also demonstrate to and motivate patients. Assistive Robots might be a solution.

Suggestive/Stimulating Robots

In order to move the current healthcare system from a reactive one focusing on death and disease to a proactive one focusing on wellness and prevention, people have to be

constantly reminded and encouraged to act responsibly and health conscious. While many people know about the basics of healthy eating, the value of exercising and the need of sleep and alike, in the heat of the day, much of this awareness becomes low priority and good resolutions are neglected. Suggestive/Stimulating Robots have the potential to remind and encourage people at the right time and with the right tools to help people achieve their health objectives. Based on context-awareness, robots could suggest to lift a couple of milk bottles for 10 min at home, challenge the person for a push-up competition, remind to call a family member to meet for a stroll in the park, etc.

The Mission of the Innovation Center at Humana

The Innovation Center develops new products, services, and business opportunities for Humana. Products and services are designed to lead consumers to a new and better experience, to better health care, and to better health by promoting choice, independence, and transparency.

The focus of our research is on understanding, predicting, and influencing consumer health attitudes, experience, and behaviors. Consumer insight, coupled with successful technologies for engaging consumers to change their health behaviors, is at the heart of the Innovation Center's efforts to drive consumerism through the US health system.

New product and business development is transformative, leveraging the data assets and consumer relationships from the risk insurance business to create knowledge assets about health attitudes and behaviors that yield opportunities in new business related to health improvement. Because the work is strategically intended to help the company develop a new business portfolio, the Innovation Center takes responsibility for strategic planning and strategic business partnerships for the enterprise.

The strategy for new product and business development is to create a cycle leveraging core business platforms to generate new business, providing investment capital for the Innovation Center to develop, prototype, and test new products and services in support of Humana's core business. This is a strategy for growth and augmentation of Humana.

Our ability to predict individual health risk, our insight into consumer health decision making, and our knowledge of how to engage and activate consumers to take control over their health care and their health is leading the Innovation Center to new business alliances – and ultimately to an international business alliance dedicated to the promotion of health and improvement of the world's health systems through targeted consumer behavior change. The goal of the Innovation Center is nothing less than to lead the industry – and the world - in consumerist solutions to the cost dilemma facing health systems around the world. By activating consumers to manage their health, their health care, and their health care finances, we hope to promote more stable health systems and healthier societies.