Virtual Reality Avatars as Health Advocates

United States
Kendra Wyatt

Project Summary

Elevator Pitch

Concise Summary: Help us pitch this solution! Provide an explanation within 3-4 short sentences.

We propose that virtual reality “Avatars” become health advocates controlled by the person/consumer and act on knowledge served up by decision support engines in existing electronic health records, future Health Banks and high quality evidence based medicine found on the internet. We believe that the holy grail of health management is behavior change. Behavior change must come from within and will be positively impacted by the person's ability to own the health advocacy experience. The Avatar will supplement the role of “Health Coach” that disease management companies currently deliver via call centers and meetings. We believe that the person should be able to tailor their Health Advocate to their personal specifications and modify their avatar based on preference and beliefs. Our hypothesis is that current disease management and call center models are not cost effective nor drive the required health improvements. As Medicare and state medicaid programs purchase electronic health records to push information to providers, the foundation is being laid to layer on consumer versus insurance company oriented services. Web access is available via cell phones and therefore the traditional computer digital divide for vulnerable populations is crossed.

The word "avatar" derives from the Sanskrit word Ava?ra, meaning "incarnation" and usually refers to the deliberate descent of an immortal or divine being into the mortal realm for a special purpose. An avatar is an Internet user's representation of himself or herself,


File attachments:
Joshua Young v02.doc

About You

Focus of activity
Technology

Year the initiative began (yyyy)
2007

Positioning of your initiative on the mosaic diagram

Which of these barriers is the primary focus of your work?
Health care not consumer friendly

Which of the principles is the primary focus of your work?
Democratize access
If you believe some other barrier or principle should be included in the mosaic, please describe it and how it would affect the positioning of your initiative in the mosaic:

Innovation, social entrepreneurship

Use the best capitalistic ideas to change the world for the better.

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**Innovation**

**Define the innovation**

We propose that virtual reality “Avatars” become health advocates controlled by the person/consumer and act on knowledge served up by decision support engines in existing electronic health records, future Health Banks and high quality evidence based medicine found on the internet. We believe that the holy grail of health management is behavior change. Behavior change must come from within and will positively impacted by the person’s ability to own the health advocacy experience. The Avatar will supplement the role of “Health Coach” that disease management companies currently deliver via call centers and meetings. We believe that the person should be able to tailor their Health Advocate to their personal specifications and modify their avatar based on preference and beliefs. Our hypothesis is that current disease management and call center models are not cost effective nor drive the required health improvements. As Medicare and state Medicaid programs purchase electronic health records to push information to providers, the foundation is being laid to layer on consumer versus insurance company oriented services. Web access is available via cell phones and therefore the traditional computer digital divide for vulnerable populations is crossed.

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**Context for Disruption:**

Healthcare is inherently not consumer friendly due to the fundamental fact that people are patients verses consumers. Consumers are the actor with power. Patients are acted upon. The purpose of a Health Advocate and Avatar is to have just one purpose- to promote the health status of the person. Currently, access to a personalized health advocate is an expensive luxury for the elite. Access to a health advocate must not be limited to the rich. Similar to the cell phone democratizing access to the internet for even the most desperately poor, the Avatar Advocates make the most difference when acting with cultural competency and empowering vulnerable populations.

Further, we believe an economy will be created on the marketing of Avatars for specific populations. For example, health advocacy stars such as Bob Greene will be selected by the demographic familiar with his Oprah Winfrey work. We believe brand name avatar coaches will be created and subscriptions to their service will be sold. Every country and demographic will have their own Avatar superheroes. And more importantly, the health outcomes that result from the advocacy and interventions of virtual reality “Health Coach” avatars will be statistically measured and published.

Other use cases: Representation of Cultural Competency, Virtual Medical Homes, Exercise Coach, Hospital Guardian, and Helping the Elderly stay at home.

**Delivery Model**

University Healthcare Infusion Services (affiliated with the University of Utah) currently provides care oversight for the Utah Medicaid Hemophilia population. There are approximately 20,000 people with blood clotting disorders in the US. 98% of them are male and 50% of hemophiliacs are under the age of 20. Hemophilia is a very expensive condition. Clotting Factor for a severe case of Hemophilia can cost over 1 Million dollars per year. Hemophilia is a very challenging condition for a young person as they are discouraged to participate in sports and any contact activity. Many hemophilic children have a chest tube to enable the constant administration of clotting factor.

The purpose of a Health Advocate and Avatar is to have just one purpose- to promote the health status of the person. Each person will be given a computer if the family does not own one. An electronic health record (also commonly referred to as a personal health record) is a web based service. It is populated with healthcare information from the Medicaid claims created from healthcare encounters. Clinical data can be interfaced directly from health care providers. The person will document the use of clotting factor directly into the record along with other important information. In addition to phone calls and home visits, the care nurse will be able to communicate via secure messaging with the person. Based on funding, two private hemophilia communities will be created in an existing virtual reality web domain, one for adults and one for 11-17 year olds. The community will be private and only open to authenticated users. The person and case manager will create avatars for themselves. The disruptive innovation is that the decision support engine in the electronic health record, the “IT” in the machine will also have an avatar created by the person. The person will be able to create a health advocate to meet their preferences and specifications. We desire to create personality attributes and allow the avatar to speak to the person as well as communicate with them via secure messaging. We believe this use case will drive further advances in the virtual reality domain. Finally we will create feedback loops and incentives such that the person’s actual documented healthcare behavior impacts their avatar world positively.

**Key Operational Partnerships**

University Healthcare Infusion Services is partnering with its health information technology supplier to provide the electronic health record and other services surrounding the avatar innovation. A virtual reality collaboration partner would be chosen if grant funding were received.

Other possible partners for the scope described are Utah Hemophilia Treatment Center, the National Hemophilia Foundation, the Centers for Disease Control, the Center for Healthcare Transformation and the Robert Wood Johnson Foundation.

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**Impact**

**Financial Model**

The business model for electronic health records and health banking is subscription based. Consumers usually have these fees paid by sponsors who are incented to keep them healthy. There is no cost to the Utah Medicaid Hemophilia population for use of the electronic health
The existing business model in virtual reality is free for initial set up and then transaction-based for additional value-added services or assets. Purchasing in virtual reality is presently subscription-based, and transacted using credit cards or debit cards just as other internet e-commerce is transacted. We believe that the future avatar health advocate economy will be subscription-based but could also be transaction-based for individual one-time or pay-per-use services.

What is your annual operating budget?
5,000,000

What are your current sources of revenue? (please list any sources that are foundation grants)
The State of Utah
The University of Utah

Effectiveness

University Healthcare Infusion Services has a nine-year history of providing Hemophilia services in a cost effective manner to hundreds of state Medicaid members. Our health information technology supplier has a proven electronic health record that has been implemented in multiple states and communities such as the State of Kansas and JAXCARE, a coalition for the uninsured in Jacksonville, Florida. It has also made similar electronic health records available to every type 1 diabetic child in the US. Currently, over 8000 type 1 diabetics are using their online record to help manage their condition.

Which element of the program proved itself most effective?
Supporting the connection between the person, the care giver, coaches, and the family is the most important part of this project. The internet has made a big difference, but further value-creation will depend on creating context-sensitive and personalized communications and cultural competency. Web 2.0 and virtual reality capabilities are well suited to accomplishing these.

Number of clients in the last year?
Infusion Services currently delivers services and factor to approximately 20 hemophiliacs. There are approximately 350 others in Utah with a blood clotting condition that would be appropriate to receive this service. In the past year, the IT supplier has signed over ten new contracts for electronic health records to over a thousand clinics and providers.

What is the potential demand?
Our premises include the following: (a) that eventually everyone will have web connectivity; (b) that eventually everyone will have a personal electronic health record; (c) that the popularity of Web 2.0 and social networking continue to increase rapidly; (d) that Web 2.0 and virtual reality technology and an EHR web-based technology today rely on some of the same software components and systems infrastructure and therefore a convergence of the two will foster the creation of new value addressing unmet needs; and (e) that consumers will continue to demand more choice and control over their health services and health-related spending. The implication of these premises is that eventually many people—perhaps as many as 20% of the total population—will have one or more personal avatars and virtual reality ‘advocate’ agents, including health-related avatars. The disruptive force of Web 2.0 and virtual reality and social networking applications will impinge on the health care industry and on public health services over the next five to ten years. This represents the creation of a new health economy or health services market, not just one or a few business ventures.

Scaling up Strategy

We will implement a proof-of-concept project for hemophilia, followed by multiple pilot projects involving different “Health Coach” avatar use-cases. Validation-testing and volume/stress-testing of the virtual reality system will be performed as part of each of these projects, to enable technical performance to be evaluated and appropriate system architecture and configuration design to be performed for adequate response-time and guaranteed system-availability for scaled-up configurations. If these are successful, we anticipate growing consumer demand for avatar/advocate capabilities as part of electronic health record systems. State and/or federal legislation will likely be required to address certain new EHR finance, service coverages and claims adjudication, and secondary-use datamining and data-rights issues prior to scale-up and broad deployment. The business model for the new health services market must also be established before large-scale deployment will be practical.

Independent Health Record Trust Act of 2007 - Giving consumers more control over their healthcare: A market-driven approach
Diverse groups such as the Progressive Policy Institute and The Heritage Foundation are backing legislation that allows the creation of new HRTs. The disruptive force of Web 2.0 and virtual reality and social networking applications will impinge on the health care industry and on public health services over the next five to ten years. This represents the creation of a new health economy or health services market, not just one or a few business ventures.

Stage of the initiative:
1

Expansion plan:
Electronic Health Records are routinely available and configurable to state-wide and nation-wide scale as contemplated in the present submission. Use of virtual reality “Health Coach” avatars in connection with EHRs has never previously been done and therefore requires a proof-of-concept project to demonstrate its feasibility.

Expansion plan: Expansion of this plan requires funding for software interface development and testing, plus services and health content to span the world of virtual reality and healthcare information technology.

Risks of the Avatar framework
It is not our intention to drive people into virtual worlds and away from personal relationships, only to supplement existing systems of care. The virtual reality space is relatively new and not clearly defined from a health care services or health law perspective. The business model is not
Origin of the Initiative

We answered the question "What do people want?" They want a partner in health to care for them, to help them navigate the complex health care system, and to help them actualize their potential—become the people they are capable of becoming, and avoid what suffering or expense it is possible to avoid.

Joshua, 13 is coming of age. He's not a little boy, but he is a "patient". He and his mom move frequently so Joshua has few friends. He's always having to teach the kids and the teacher that his condition isn't catching. Joshua starts acting out and takes control. He stops taking his daily clotting factor. Two days later he's in the ER with a painful joint bleed. What if there was a world where hemophiliacs were powerful? What if he gets points or power for taking care of himself? What if he could fly? There are places like that that exist. We will connect Joshua.

Sustainability

What are your two main challenges to finance the growth of your initiative

The futuristic nature of our vision and spanning two different industries creates barriers to funding from conventional government- and university-based programs. Since the commercial business model for this pioneering work is not yet clear, additional funding is needed to enable our HIT supplier (Cerner Corp.) to pursue the integration with the virtual reality provider such as Linden Labs.

We request $500K to fund the integration between the partners in context of our Hemophilia program.

How did you hear about this contest and what is your main incentive to participate?

Myra Christopher, CEO Center for Practical Bioethics

Incentive is to make something extraordinary happen.

The Story

Do you have an annual financial statement?

Financial statements are available for University Healthcare Infusion Services.

Do you currently have an annual financial statement that tracks profit/loss?

Yes.

Please describe the amount (and/or type) of funding you need to implement your initiative, at year 1 and at year 5.

This is a front loaded initiative so funding would be more effective in a block grant vs a term.

Source URL: https://www.changemakers.com/disruptive/entries/virtual-reality-avatars-health-advocates#comment-0