Technology Innovations Could Upend Today's Healthcare Delivery Model

By David Devine and K.R. Prabha

Technology companies are making strategic investments that have the potential to revolutionize the healthcare industry. By developing tools that will create a care delivery model that is data driven and consumer focused, and takes care out of traditional healthcare settings, technology innovators like Amazon, Apple, Google, IBM and Microsoft are making bold moves to own the future of healthcare.

Innovation Will Transform the Patient Experience

Technology companies think differently. They explore concepts beyond their core offerings today. They take risks. They fail and move on. They succeed. Their success disrupts industries. At Amazon's 1492 lab, Apple's secret fitness and exercise lab, Google X, IBM's Accelerated Discovery Lab, and the Microsoft Innovation Centers the focus is on changing existing healthcare services. By removing challenges today's patients' face while receiving care they aim to create a consumer-centric healthcare experience.

Most healthcare organizations do not innovate in the same way. Instead they make incremental improvements to existing care delivery models. For example, health care organizations are increasing the number of weekend and evening primary care appointment slots and offering extended hours for lab services. Meanwhile Google is transforming preventive care by developing a pill that uses nanoparticles to identify cancer, potential heart attacks and other health conditions. Based on the information provided by the pill, a physician could determine if an in-person visit is necessary or order follow-up labs without ever seeing the patient. Google says the pill could also provide continuous monitoring, detecting changes in health sooner. For many conditions, this could lead to improved outcomes and less invasive medical treatments.

Apple is also innovating the way we test health conditions. In partnership with Stanford Medicine, Apple is studying whether the Apple Watch can detect atrial fibrillation. If this proves successful, individuals could be tested while going about their daily activities rather than taking time out of their busy schedules to go to an outpatient center for a costly electrocardiogram.

As technologies move care out of traditional healthcare settings, healthcare organizations must plan for a future where many of the services they provide today become expendable.

Data Informs Medical Interventions

Google takes enormous quantities of data and translates it into valuable insights. Its latest endeavor, Searching For Health, aggregates health-related Google searches and the occurrence rate for health conditions in a location to understand how searches reflect actual health problems.

Amazon, Apple, IBM and Microsoft also manage large amounts of data to detect trends and predict the occurrence of an event. By applying their data management and analytics capabilities to health, they could decrease the need for medical care by anticipating patients' health conditions before they even know they're sick. For example, Amazon could leverage its data from its 80 million Prime members with their medical record information to discover trends between purchases and illness. Based on these trends, Amazon could recommend a medical intervention based on buying habits, which could proactively address the health problem and prevent it from getting more serious.

A decade ago, Apple transformed the music industry by centralizing music into one place, iTunes. Today, it's following a similar model as it develops technology to centralize fitness and wellness data, lab tests, physician notes, prescription lists and medical records in one place. This platform could give consumers the autonomy to own their health information rather than having it housed across many health systems, physician offices and medical record systems. A centralized repository will also make it more seamless for patients to move from one physician to another and provide clinicians with a complete picture of their medical history.

As technology companies use data to transform care delivery, healthcare organizations can do the same. While significant investments have been made in Electronic Health Records, their value has not been realized. By unlocking the power of these investments organizations can use data to make insightful decisions, streamline care delivery and create more personalized care plans. Investments in data-driven technologies such as IBM Watson for Oncology can provide physicians with insights to better identify the right treatment for each patient. This tool aggregates a patient's medical records with relevant research studies and treatment options specific to a condition, giving the provider a ranking of treatments based on how well the patient would respond to them. This creates a personalized medical experience that uses data from millions of patients to create a care plan for one individual.

Patients Pick Their Care Options

Technology will put patients in control of when, where and how they want to receive care. Amazon's Alexa provides consumers with first-aid advice from Mayo Clinic. This free resource eliminates trips to urgent care centers if patients can treat themselves wherever they are. As Alexa's footprint in healthcare expands, it is possible that the device's existing capabilities could be used for telemedicine services, medication reminders and appointment scheduling all from a patient's home. Google Home and Apple's Siri could also offer these services in the future.

Senosis, an app developer purchased by Google, has developed apps (currently under Food and Drug Administration review) that use smartphone sensors to measure lung function and hemoglobin counts, and detect jaundice. With these apps, patients can monitor their health while performing daily activities, eliminating the need for in-person appointments and diagnostic lab visits. The apps will change the patient/physician relationship by giving physicians information on a patient's health in real-time rather than waiting for days for lab results to come back.

These technologies will make healthcare more convenient for patients, allowing them to receive service on their terms. Healthcare organizations must think like technology companies and consider similar ways to transform the patient experience.

Healthcare Systems Transformed

Technology is moving care out of the traditional healthcare settings of hospitals, medical offices, outpatient centers, imaging centers and lab testing centers. For healthcare organizations, transforming the way care is currently delivered is vital for success in the future.

As technology companies develop tools that will transform healthcare by creating a consumer-centric delivery model, incumbent organizations must also disrupt themselves by thinking about patient care in that same way. Those who adopt this mindset today will position themselves for success in the future.

Key Takeaways

To be successful in the evolving healthcare market, organizations must:

Think differently.

Consider the future needs of the community, how technology will impact treatment for various conditions and where care will be delivered.

Plan differently.

Create a strategic plan that will fuel future growth and identify technology partners that will help you enhance the patient experience.

Act differently.

Turn patient data it into actionable insights that eliminate inefficiencies in care delivery and improve outcomes, use artificial intelligence to create treatment plans customized to the patient, and adopt cloud technology to enhance data security and make data management easier.

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