UNDERSTANDING THE TRUE ROLE OF DISRUPTION IN FEDERAL HEALTH

This interview with Clement Chen, VP, Health & Human Services, Leidos Health Group, discusses the difference between conventional technology improvement that is sustaining versus disruptive technology, and offers advice to industry and Government on how to differentiate between the two and seek positive disruption.

THE EVOLUTION OF TECHNOLOGY

When we think about the evolution of technology, we need to look at it from the view of how the technology matures, how it is adopted, and whether it becomes meaningful, or not, in the lives of real people in real circumstances. In simplistic terms, technology can be viewed as either sustaining or disruptive.

Let's talk about sustaining technology first. Sustaining technology tends to evolve naturally on a path where performance along a given dimension improves incrementally or even in a leap-ahead fashion over time. A car that starts out able to go from 0 to 60 mph in 10 seconds may at some point, through sustaining innovation and improvement, be able to go from 0 to 60 in under five seconds. That advancement is important when cars are viewed as a mechanical means of transportation where speed is essential. Disruptive innovation arrives when cars become animated with digital technologies that transform them into being something more than just mere cars but rather "computers with wheels." This transformation creates a whole new world of possibilities that was not in view at the outset.

Now let's talk about disruption by looking at how the world of video gaming has changed over time. Gaming companies have engaged in an endless arms race of producing new systems and games with dramatically improved graphics and features. Then along came the Nintendo Wii. Its traditional feature set was inferior to other systems but it came with a disruptive technology—a motion-controlled video wand used in combination with movement-based social games—that drew in a whole new population of consumers who did not consider themselves to be gamers at all. Witness, for example, the birth of nursing home virtual bowling leagues. The Wii technology was disruptive because it tapped into a different dimension of need for a non-traditional class of users, met them where they were, and provided them with a satisfying and meaningful experience.

The birth of the smartphone camera is another example. Its introduction was disruptive, bringing to people what was not a great quality camera at first, but one that satisfied the need to send an image immediately across a network and enabled social interaction that didn't exist before. Over time, phone cameras have improved dramatically thanks to exponential growth in the foundational technologies of bandwidth, storage, and processing power. With widespread fielding and adoption, these disruptive cameras have now become a sustaining technology that follows the conventional improvement curve, thereby completing the circle of life in technology evolution.

THE HEALTHCARE VIEW

Historically, Healthcare delivery was built around the hospital as the center of the universe, covering everything from the sniffles to brain surgery. That model persisted for many decades until disruptive innovation emerged in the form of the retail health clinic. These retail clinics can't handle even a fraction of what hospitals can do, and therein lies their strength. The disruptive insight of these clinics is the recognition that people don't want more Healthcare, they want more health. If they can achieve that improved health without actually having to deal with the traditional Healthcare system, then all the better. Retail clinics succeed because they optimize convenience and cost in concert with health. They maximize the use of lower-skilled clinicians practicing at the top of their licenses and leave the more highly trained physicians, who would be overqualified for clinic work, to handle more complex issues.

Telehealth is another example. While telehealth has been around for a long time, it was generally seen as an inferior mode of care delivery compared to in-person interactions. Healthcare policies and reimbursement mechanisms reinforced this notion. Then COVID-19 struck. The circumstances created by this pandemic have made telehealth the delivery method of choice because it enables the opportunity to provide "good enough" care for many conditions

while eliminating the risk of Coronavirus exposure. Telehealth is a disruptive technology whose value has become obvious during the current pandemic. Once its use has become normalized, it will likely endure as a sustaining innovation even after the COVID-19 crisis eventually subsides.

DISRUPTIVE TECHNOLOGY

There is a lot of discussion about what the next great disruptive technology might be. While cloud, blockchain, and artificial intelligence quickly come to mind, I don't believe that is the lens we want to use. Technology is not an end unto itself but rather the means by which we get a job done in a particular circumstance, be it a pandemic or an isolated rural living situation. Our focus needs to be on providing the right technology for the right circumstance. Furthermore, the "best" technologies don't always "win" in a classical sense. Some would even argue that the most impactful technologies are those that disappear because they end up blending into the background and simply become the ways things are done. Look at how your children humanize technology for a window into this truth—it isn't technology to them.

Leidos supported a Food and Drug Administration (FDA) project called the System for Entry Review and Import Operations that was recognized with a 2020 Disruptive Tech Award by G2Xchange. This effort put consumer safety officers at the center of innovation. These officers are the frontline defense against counterfeit and illicit drugs and often find themselves in locations where there is no internet access or unreliable connections. In fielding the solution, the goal was not just to apply technology X or Y, but rather to ensure that these personnel could accomplish their mission even in the most disadvantaged situation. The user's circumstance was the primary focus, not the technology per se.

If the starting point of a discussion is technology, you invariably find that you are focused on a hammer that is forever in search of nails. Worse still, when you are a hammer, everything looks like a nail. Instead, we want to look at problems from the view of what the customer or end user is trying to accomplish. We start by looking at the circumstance the user is in, the job the user is trying to do, and the interplay between these two factors. Only after this dynamic is well understood should a discussion of technologies even begin. You may find that the disruptive technology best suited to the circumstance may not be a technology at all; it could very well be a process.

"New technology plus old process equals expensive old process." This situation happens so frequently that it is almost axiomatic and even has its own equation: NT + OP = EOP. Without a careful eye trained on process adaptation, you will miss a critical part of the solution.

IDENTIFYING INNOVATION

Too often, technology evolves in a way that requires the human to act more like a machine to reap its value. True innovation puts tools and information in the hands of end users within the normal rhythm and flow of how these users go about their business in their natural habitat. Whenever users have to perform unnatural acts or adopt compensating behaviors in order to do their jobs, you can be sure that a disruptive opportunity lies in wait. The DOD recognized this situation more than two decades ago when it realized that the lack of networked information flow to soldiers at the pointy edge of the spear led to

continual battlefield improvization to get their jobs done. This realization led to the disruptive concept of network-centric warfare and the empowerment of the nodes at the edges of the network (i.e., the soldiers), which gave rise to the emergence of unmanned systems as an integral part of military operations. This disruptive concept enabled humans to do what they do best and robots to do what they do best and, in the process, made the machine more like an extension of the human (and not the other way around).

A similar disruption is coming to Healthcare, fueled by data as a key disruptor. Instead of focusing on getting more data into a central hub for limited consumption, more attention will be applied toward getting that data to the people at the edge of the network—the patients—and providing them with the power to understand their health and make critical decisions. Given that most decisions that affect a person's health are made by the individual and not the Healthcare system, empowering individuals with actionable information will likely be an enduring disruptive trend.

THE ALLURE OF TECHNOLOGY

We have to resist being seduced by bright, shiny objects when it comes to determining the value of technology. We should think of technology as a stable of tools at our disposal and train our attention on the customer need first. If you can truly understand the customer's need first and above all, the tools will always be available to then apply. When we focus on the technology first, it narrows our view of how to frame and address the real problem. Theodore Levitt, the late Harvard Business School marketing professor once said, "People don't want to buy a quarter-inch drill. They want a quarter-inch hole." Disruptive innovation is about focusing on the quarter-inch hole.

ABOUT
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Clement Chen is the Vice President for the Health & Human Services line of business at Leidos. He manages a portfolio that includes work at the Food and Drug Administration (FDA), National Institutes of Health (NIH), Centers for Disease Control and Prevention (CDC), Indian Health Service (IHS), Health Resources and Services Administration (HRSA), and various life sciences activities. He previously served as the Chief Strategy Officer for the Leidos Health Group, where he led strategic planning, mergers and acquisitions (M&A), and business development operations, and guided the creation and pursuit of new strategic growth initiatives. Prior to these roles, Chen led the Leidos Commercial Cybersecurity business unit. His work has addressed a range of markets, including Healthcare, energy, logistics, national security, and telecommunications, with a special focus on systems integration, data analytics, business process management, and cybersecurity. Chen is a former naval officer, specializing in surface warfare and operations analysis, and was an operational test director for naval engineering and combat systems.