Catalysts for Change: A Conversation with America's First CTO

Aneesh Chopra¹

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A decade ago, the words “hi-tech” and “government” used in a single sentence may have been the perfect image of an oxymoron. Not anymore. Not since Aneesh Chopra was appointed by President Barack Obama as the first chief technology officer of the United States.

As chronicled in his book, *Innovative State*, Aneesh made it his personal goal upon appointment to leverage the transformative power of technology, crowdsourcing, start-up thinking, and open standards to make government hi-tech, collaborative, innovative, agile, and simply . . . cool.

Healthcare has traversed a timeline very similar to government and could use similar thinking to catapult it into the future. It's about time we too made that transition—about time we bring the “cool” into healthcare. And here's how. In this interview, *Healthcare Transformation's* Editor-in-Chief, **Dr. Stephen K. Klasko**, and Associate Editor **Neil Gomes** find bold, transformative advice from **Aneesh Chopra**, who has his sights focused clearly on healthcare as his next frontier for change.

Dr. Klasko: Aneesh, thank you for joining us to talk about how technology can drive transformation. In your book *Innovative State*, you chronicle the transformative power of technology as it has gradually brought about change in government over the ages. In fact, some people think there are parts of government that are actually cool for the first time.

Mr. Chopra: I would agree.

Dr. Klasko: And I think one of the things that we saw from the outside is how you focused innovative thinkers in industry on collaboratively solving the problems of government. Healthcare is traversing the same timeline, but is a little behind. As you think about our transition and how we bring some of that cool into healthcare, what can be a major catalyst for this change? What is the shock? And do you see outside folks—governments, providers, payers, pick anybody—playing a role in the journey to harmonize healthcare and develop a cure for itself?

“In your book *Innovative State*, you chronicle the transformative power of technology as it has gradually brought about change in government over the ages.”

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Mr. Chopra: Thank you for the question. I would start by saying that the ultimate catalyst for change is the CEO, the executive. In our case, **President Obama** made a pretty bold statement on his first full day in office that he was going to shift the default setting of government from closed to open. He referenced the role that a chief technology officer would play to help execute the vision that he put forward. But make no mistake, it was his vision that he wanted to basically close the innovation gap.

His particular perspective in terms of a catalyst for change was that the country had a lot of problems, and we had to expand the toolkit in order to meet those problems. One of those tools was going to be the role that technology, data, and innovation could play as a complement to the more traditional tools that had been made available by prior presidents around new regulations, new investments, and the like.

The challenge, or the opportunity, when it comes to this catalyst is you need to have the leadership commitment up front, but then you also have to have the management capacity to execute. And so the combination of the two is where we saw the greatest impact.

Clearly, in healthcare, we are facing the same leadership moment. There are those CEOs who are looking to build a future that focuses on value and are looking to their boards and proclaiming that they want to be leaders in a value-based care delivery model. Those are the leaders who are making a call to action built around that new operating model. But there are also leaders who are somewhat contrarian: “I see this potential future. I do not know that it will pan out. Instead I want to take my organization toward continued operational excellence within the current fee-for-service environment, betting that it might continue.”

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Aneesh Chopra and family with President Obama in the Oval Office.

In both cases, the catalyst for change is that as the leader declares the vision that he or she wants, there are roles for technology, data, and innovation to help accelerate that vision on either front. Either can be supported by technology. Obviously I am much more focused on organizations that are diving into value.

Dr. Klasko: You had the CEO taking a leadership stand, in this case, the CEO of the country, saying, “This is what we are about.” I have to believe that even though people worked for him, that there were people rolling their eyes and saying, “You know, hey, I have been in government for 20 years. I am not going to do this.” Did you find that, or . . . ?

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Mr. Chopra: Yes, of course.

Dr. Klasko: Did everybody just say, “Oh, Aneesh, you know, anything you say.”

Mr. Chopra: No. That is an exceptional point, because you are right, declarations are only as good as the voice that presents them. We had an expression called the B Team. You know, “I will be here when you leave. I was here before you got here.” Basically, the B Team was the sort of stereotypical view of an individual that might want to wait out this particular wave of leadership. Every organization has the proverbial B Team.

I would say that you engage the B Team with a management approach to close the gap. On open data, our execution plan called for every federal agency to open up at least three high-value data sets for the American people to access in machine-readable form within 45 days. And that combination of the president declaring, “This is the new approach to problem-solving,” combined with a very practical approach that had people deliver results in near-real time helped to shock the system.

And I will just give you one small, little anecdote. The CIA, when they were told to disclose a data set in machine-readable form, the first high-value data set that they put forward was the menu for the cafeteria in the CIA—which, by the way, turned out to be one of the more popular data sets.

Dr. Klasko: There are a lot of parallels regarding inertia between longstanding federal employees reporting to a president they know is only going to be there for eight years and tenured faculty for life reporting to university presidents that have an average tenure of about three or four years.

Mr. Chopra: Yeah, yeah. Management techniques of carrots, sticks, and transparency all were in play during our tenure. We asked for the carrot, which is,

he will honor you. **President Obama**, you know, in his cabinet meetings would call out cabinet secretaries who oversaw innovative programs, even if they were just getting started and had modest impacts but were in the right direction. They got shout-outs by the president and rewarded.

We held agencies accountable through mandates like the three high-value data sets. And on transparency, we graded each of the agencies on their implementation plans, and we put that on a public website so people could see how well we were internally grading the agencies.

Mr. Gomes: As you have made this transition from government to industry, you must have had several choices for what you could do after that, but you picked healthcare and healthcare systems. Can you explain why you chose the path of bringing about change in healthcare systems via technology, data, intelligent analytics?

Mr. Chopra: Thank you very much. My passion for healthcare predates my role in government. My first job out of college was as a banker at MORGAN STANLEY, where my colleagues took NETSCAPE public, and I was enamored at the possibilities of the Internet and what it might mean for healthcare. My subsequent graduate thesis examined the lessons of Internet-based technologies in academic medical centers, writing about the case studies at BETH ISRAEL DEACONESS and some of the work that had been done to embrace Internet-based technology to virtually connect providers.

I have been very passionate about where and how healthcare could advance by building on the Internet, and I just simply pivoted my role over time. I spent a near-decade at the ADVISORY BOARD COMPANY, wrote our first major study on the Internet for our membership base, as well as serving as Virginia's secretary of technology with then-governor **Tim Kaine**, now senator. During my interview, he specifically focused on my passion for healthcare IT and that the moment was right for the public, private, nonprofit sectors, federal, state, and local to collaborate to modernize the system and the infrastructure.

He would later ask me to co-lead that effort with our then Health Secretary, later CMS Administrator, **Marilyn Tavenner**. This had been a priority. When the President hired me as CTO, he encouraged me to make healthcare one of those areas of focus. And so it was not that high of a leap to suggest that the foundation of what we were doing in Washington might have implications in the private sector.

A big thrust of our efforts in government was to open up data sets held by the government. The holy grail for sure had been the linked Medicare claims data

“Today is the best time to be a healthcare entrepreneur in America.”

sets, which are a window on the performance of the healthcare system for 40-plus million Americans. We can see what patients, what conditions they have, what doctors they have seen, where they have navigated in and out of various networks, and how they were treated; all of that information is essentially locked into this database, with very few entrepreneurs and innovators having access to it for purposes of making the system work better. And so it was a natural transition to think about ways that we could bring government data to life with appropriate privacy and security protections.

Mr. Gomes: Tell us about your startup, NAVHEALTH, and its parent company, HUNCH ANALYTICS. For example, you work at JEFFERSON HEALTH and DVACO, the DELAWARE VALLEY ACO. How might this collaboration serve as an example of how asking the right questions, finding the right data, and applying the right technologies to solve dilemmas can bring about fundamental change?

Mr. Chopra: I cofounded HUNCH ANALYTICS with Dan Ross and Sanju Bansal, a successful entrepreneur who cofounded MICROSTRATEGY, a business intelligence software company. Sanju set aside some research and development money to prototype products built on open data sets held by the government that could be brought to life specifically in health and education markets.

Top on that list was the Medicare ACO program. For the first time in history, the federal government is collaborating with organizations like the DELAWARE VALLEY ACO and JEFFERSON within that group, as well as literally 400-plus organizations around the country under contract to release access to the full patient healthcare experience with permission. For the first time, physician leaders who were thinking about their patients, who previously only had a window into their lives based on when they came into the practice, could now more fully understand what happened before the patient came in or after they left. Through the Medicare ACO program, we are able to stitch together these data sets.

Mining these data sets is important because I think we are in the most entrepreneurial period in healthcare. Among the areas of greatest innovation is the new set of questions that doctors, nurses, frontline staff and management can

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start to ask to figure out whether or not segments of patients are currently getting the coordinated care they deserve, or if there are areas in which we might identify better pathways for their care. Then eventually, we can put in place the workflows and applications to make sure that patients and providers navigate these networks to get the right care at the right setting at the right time.

So I am proud to be a partner with JEFFERSON in exploring this information and identifying those patient segments where we can deploy the value-based care delivery system the country so desperately needs.

Dr. Klasko: One of the things that I noticed when you were working with President Obama was that the traditional way of looking at government best practices was very similar to how we once looked at healthcare best practices. But you didn't accept that lower standard of best practice just because it was government. We have that issue with medical errors. I often laugh, when a physician leader compromises on his or her goals by saying, "We should be more like a hospital that has cut their infection rates by 10 percent." That's the wrong standard. Maybe we should go look at another industry that has gotten to zero defects.

And I think as I look at one thing that was unique about the way you handled things, you compared government to and brought in best practices from some other nonobvious services and industries that saw similar problems, and what you might be able to learn from those. And then you leveraged those parallels as you began to transform government services.

Who do you think we can learn from in healthcare? Where would you say, Steve, forget your traditional standards, this is where you could go to learn and pick up some disruptive quality control, customer service, or technology advice that does not exist in healthcare?

Mr. Chopra: It is about context. In the late 1990s, my colleagues at the ADVISORY BOARD wrote a book called *Stall Points*. How do seemingly indestructible companies hit a proverbial brick wall and effectively struggle? And the classic case example is KODAK, which really was the bellwether of the ball, right? They were the most innovative and entrepreneurial company, 90-plus percent market share, and here we are decades later watching their demise.

And it turns out that there are some fundamental lessons that can be learned, but among them was their failure to manage their innovation pipeline. To give you an example, they invented the VCR, but management said, "Who is going to

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spend 500 bucks to buy this device?” and they chose not to commercialize it. They invented digital photography but, again, chose not to commercialize for fear it would compete with their core business on film.

The lessons that I drew for the president were really the lessons about how we close this innovation gap, and what are the capabilities that we would need to better manage the innovation pipeline? And so there were three case studies, if you will indulge for a moment, I will share them.

The first of those case studies was actually PROCTER & GAMBLE, whose CEO, **A.G. Lafley**, had made a bold proclamation that 50% of all new products sold by PROCTER & GAMBLE would come from ideas that originated outside of their famous lab network. I called their CTO and, jokingly, said, “Oh, my goodness, your boss just punched you in the gut. You are only good for half the productivity. Is that embarrassing?” And he said, “Quite the opposite. I mean, he gave me air cover to do what I always naturally wanted to do, which is to reach out.”

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You know, we believe in Joy’s Law. Joy’s Law is attributed to the founder of SUN MICROSYSTEMS, **Bill Joy**, who said, “No matter who you are, the smartest people working on the issues you care about work for someone else.” That idea of open innovation, opening up the doors, the cultural commitment to find those ideas and welcome them, not kill them at the edge, was an important attribute that we learned from PROCTER & GAMBLE.

Although somewhat controversial today, **Jeff Bezos** at AMAZON actually created a model where frontline workers could be rewarded for new ideas that they experimented with, even if those new ideas were not really reported up through management or approved. He rewarded people with these old NIKE sneakers to say, “Thank you for trying.” You know, the Just Do It awards. And it sent the message that basically there is innovation that can take place from the bottom-up. Imagine 3 million frontline workers actively contributing ideas for the president’s key priorities?

And then lastly, and the one most relevant, I think, for where we are going in healthcare, is actually FACEBOOK, but in the context of their developer platform. At the time, FACEBOOK had something like 3,000 employees. But if you searched how many people had the job title FACEBOOK developer, there were over 30,000 people who were contributing to the FACEBOOK platform. And that meant NIKE would hire a FACEBOOK developer if they wanted to build that experience.

I would look at those three threads, Steve. What is the right cultural statement to surface ideas from the outside in? How do we value frontline workers up and down, bottom-up, not top-down? And then how do we build platforms so that people all across the enterprise, in and out, can contribute to this pace of change? Those were the big lessons and case studies that we adopted, as we worked to advance the president's open innovation agenda.

And then the theme of all this, given your point about the Six Sigma experience, was to adopt a lean startup culture that took all of these ideas and said, "Operationalize them." We would take the best of lean management principles and the spirit of startups and think about hypothesis generation, prototyping, feedback, adjusting on the fly and thinking of cycle times measured in weeks and months, not years, or election cycles.

Dr. Klasko: Now that is like a crash course for CMOs, as far as what they probably need to do moving forward. Aneesh, a good part of my research has been on what makes physicians and healthcare leaders different than other people, as to how we handle change.

And what we found is that we are sort of in a bad positive feedback cycle, that a major contributor to the inertia in healthcare is a sense of powerlessness. You know, I have the opportunity to visit with medical staff around the country, and it is like the Woody Allen quote, you know, "We are at a crossroads. One road leads to total destruction, the other utter despair. Let us hope we choose the right one."

And then the other problem seems to be even for the physicians that don't feel powerless, they are still blaming everybody else. By the time you get to looking in the mirror, often, it is too late. Given that we both come from very different worlds, how do we overcome this sense of powerlessness? Because there are some realities—decreased NIH funding, decreased inpatient reimbursement, some regulation issues. Suppose President Obama got all the stakeholders together and said, "I want to give you one last shot at getting this together." And let us just say everybody had to look in the mirror and not blame the person across from them—what would you suggest that a CEO or CMO of a

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health system or a practicing physician or nurse or senior executive or an executive of a pharmaceutical company or medical device company do immediately?

Mr. Chopra: Well, thank you for the question. This is actually the most exciting question to answer, where we are right now. Let me begin with an observation. My humble opinion is that what you are describing is a wall of disbelief. And my hope is that readers of this article might have the following conclusion: That if we collectively punch a hole in that wall of disbelief, we will collectively find out that it is paper-thin, because it is paper-thin. And I mention this because a lot of the anxiety is misplaced as the facts are the inverse of what people believe.

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Let us take an example. One of the fears of regulation is the sense that basically Washington is dictating how we get paid, they are telling us what we are supposed to be doing, we do not think they are doing it right, but we can only argue it so much. And there is this sense that you are powerless in the face of this onslaught. Let us just take payments.

One of the first myths I would like to myth-bust is in the Affordable Care Act. One of the most powerful provisions of the law is that if you are the CEO of a health system, you have the opportunity to petition and design your own payment bundle. If you believe that you can do something better than anybody else, perhaps for a given patient population with a set of conditions or under definable circumstances, and you want to take risk and responsibility for a specific number of months of their care, you have the opportunity to petition the Medicare Innovation Center to run that as a proverbial payment trial; if that trial works and the independent actuary of the United States asserts that your trial generated value, then that can become a national payment option without having to go back to Congress.

Let us take a second example around designing the insurance marketplace. Again, getting everybody around the room and saying, “Is this how we would like to develop the access programs? Is this how you want everybody to get insurance? Is this what a minimum benefit plan should look like? Is this how we should get employers involved?” We could rewrite the healthcare exchange provisions provided we reach the same coverage, cost, and quality assumptions.

Another myth to bust—every single state in the country by the year 2017 has the

legal authority to rewrite all the major marketplace provisions of the law. If you can come up with a better, more effective way of onboarding Americans into the system to lower costs and to improve outcomes, you can petition the government under the state innovation waiver starting in 2017 and actually get the authority to rewrite major provisions of the Affordable Care Act in your state.

And the last, but not least, again, in the spirit of myth-busting, we have this historical perspective about silos. “Well, there is the insurance company, and there is the hospital, and here is the physician, and here is the nursing home, and each of these are separately regulated and governed.” And all of that is true—those are today’s silos.

But at last, because of some of the technology provisions in the law, we are creating the conditions where organizations that are opening up this data can now collaborate even with organizations that are not owned in a vertical sense, but can create virtual companies that effectively operate together as one to share information, to engage patients, to reward or influence providers, and that we can essentially rebuild the underlying operating infrastructure, the operating system of the healthcare industry.

“ I cannot imagine a more exciting time to be in healthcare than right now. ”

I conclude by saying healthcare is not an area for negativity. In fact, this is the most entrepreneurial period in healthcare’s history, with a combination of the amount of data the government is making available about healthcare, the opening up of the health IT systems through these connected applications, and the ability to shift and influence payment models at your pace, which allows people to take the bull by the horns and own this moment. I cannot imagine a more exciting time to be in healthcare than right now.

Dr. Klasko: You just tweaked me about something. One of my complaints is that when you really look at what has been done by the private sector in response to the Affordable Care Act, and you look at some of the people that have taken advantage of some of the opportunities you just mentioned, it is a very exciting story—insurers and providers with creative partnerships, industry and academics working together, and even individual entrepreneurs and physician groups moving from volume to value, much of which was spurred by the changes you mentioned. But for whatever reason, it seems like we have let the—to use a bad word—the naysayers take the communication platform. You know, it does not seem like there are a lot of folks going around saying, “Let me tell you that in Pennsylvania or Ohio or Colorado, the CEO of this 300-bed hospital took advantage of their ability to make their own bundled payment system, and this is what they did. That exciting message never materialized.

Mr. Chopra: I would say to you, there were many factions supporting the president that had different voices. A few of us represented that excitement and enthusiasm. Yes, I personally believe you are in a very important place.

And frankly, your Journal, to be blunt about it, could play an important role in helping to surface stories of people who have leveraged the tools that are in the law that may not be as widely understood to really bring about some incredible changes.

Mr. Gomes: This is a perfect segue into the next question that I have, and that is, you have dedicated a good portion of your career to understanding the role of interoperability and data sharing in healthcare, and even in education. If you could tell us what drives you to that end. We know you are passionate about these kinds of goals, but what are your core beliefs behind that drive?

Mr. Chopra: Yes. Thank you, Neil. If you believe in the value of open innovation, that people will be collaborating to help students succeed or to help building owners reduce their energy consumption, or to help patients achieve greater value for their dollars spent in getting the healthcare outcome they deserve, in each of these stories you will find there are entities collaborating at the edge.

And in today's Internet-based economy, much of this requires us to connect often sensitive data. And so one of the market failures we have tried to overcome in the public policy domain are, how might we allow institutions to connect information, especially regulated data, that has historically eluded us for lots of reasons? And the spirit of this is not new. I took inspiration from, believe it or not, **President Herbert Hoover** when he was secretary of commerce in the late 1920s, just after World War I.

What Secretary Hoover had considered was a new role for government. He called it the associative state. That is to say, there were many who wanted him to have the government invest directly in industries that needed a propping-up. His bias was that government really should not be picking winners and losers, but did not want to sit back and let industries fail. His response was, the government could play a convening role to lower barriers to entry and to foster more collaboration on the

research and development front, as he had done with aircraft manufacturing with the predecessor to NASA, focused on building airfoils and engine cowlings.

To answer your question about interoperability of health and education and energy, we wanted to achieve the spirit of an associative state role, where we can collectively agree that even though each individual organization has access to its own version of a patient's health data, we should standardize the patient summary file format wherever a patient chooses to direct that it be sent.

If you are a utility, here is the metering data, and here is how it is shared with your home appliances that want to connect, if the consumer wants it, and so forth. And that has become an incredible role, a bipartisan role of government. The federal government right and left has been asked to carry that spirit along to foster interoperability standards on cybersecurity, on energy, on health and education, and the like.

Mr. Gomes: If you were looking at it from a patient perspective, if you wanted to do one major thing that could change that, what do you think of the National Patient Identifier? Would we solve a lot of the interoperability issues if we started this as a foundation for interoperability and data sharing?

Mr. Chopra: I believe the answer is to empower the patient with full access to their records and their data. The National Patient Identifier would be an option if behind the scenes we wanted to connect all the organizations around the patient's information, which has a lot of security and privacy challenges, and it is a costly proposition to do this behind the scenes.

“How might we allow institutions to connect information, especially regulated data, that has historically eluded us for lots of reasons?”

My general opinion, if I had one sort of magic wand, would be that every node in the healthcare delivery system points the data back to the patient or, more to the point, to the secure endpoint that the patient would designate that would be the custodian of his or her health data. And that would do more to bring about interoperability.

I am pleased to report that is how Meaningful Use Stage 3 is designed—basically, to regulate that every healthcare organization must provide the patient a secure digital endpoint where they can have their data in a form they can control. The result is that it will give rise to organizations, and perhaps an academic medical center such as JEFFERSON might become the custodian of patient data, not just in the Philly market, but wherever and however it wishes to have impact.

And so we are going to see the rise of this movement of basically people earning the trust of their patients to be the repository for the data that they have the right to access. And that is what HIPAA requires. While HIPAA has been perceived as a barrier to information sharing, it actually is quite the opposite. It is a legal requirement that if a patient requests a copy of their data, it should be provided. And all we are doing in the tech community now is agreeing on the technical standards and the ease by which that patient can access and organize their data.

Dr. Klasko: If you came down from Mars and you looked at the Affordable Care Act, you would have said, “All right, well, one of the things that really should not happen, since we have to standardize some of this stuff, is that everybody should have to decide, should I spend \$300 million to get an Epic system or a Cerner system or whatever?” Was there any thought to mandate an open-source coding model?

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Mr. Chopra: This is perhaps the biggest myth I wish, if I could do it all over again, we would clarify, because our thesis was not about whether an electronic health record is a noun, but rather a collection of verbs, computing ability that performed functions, decision support, patient engagement, provider order entry. And so what we did in the regulation is we required that electronic health records be certified at the feature level. We called it modular certification.

Unfortunately, most of the buyers of the industry did not necessarily hear that message, and so they ended up just buying the single integrated package, although it is today possible to acquire multiple compatible, substitutable modules. And I had hoped, and I will take a personal point of blame on this, which is, we got the policy wrong in terms of getting the word out that really being a healthcare delivery system of the future, you need to have the capacity to conduct a lot of these verbs, to conduct decision support, to think about order entry, to think about prescribing in new ways. And each of those features should have a vibrant and competitive marketplace that you can substitute out.

It is not so much an open source. I think there are very important, valuable assets that people are building, but they must be open from a connection standpoint at the edge for their modules.

By the way, that is what we have today in Meaningful Use 3, which means that while you might have the Epic MyChart as the home page that Epic gives to you by default, it is quite likely you might build an entirely substitutable patient-facing experience that is connected, like a module, to the rest of the machine, but you are not constrained by it.

And so you are right, we did not go open source, but we did believe in open APIs, which allow you to connect modules, and really it is a marketplace failure that we did not see more of that activity show up. More organizations did not fit together discrete modules to meet the goals, so that is fine. That was where we ended up.

Dr. Klasko: Let me switch gears for the last couple questions. What amazes me is how the same group of people that might cancel their UBER if it takes more than 6 minutes are willing to literally put up with days of waiting for appointments and hours in the waiting room because they do not want to upset their doctor.

Now, I think that might be generationally changing. I hope it is. But I would love your thoughts about how do we construct a “Braveheart” moment and inspire patients to demand more patient-focused healthcare and work with us to realize it? Too often patients say, “Yeah, I know it is really bad service, but I guess that is what you have to deal with in healthcare.”

Mr. Chopra: First of all, if I had the answer to this question, I think we would all be in a better place since everybody would solve it. But here is my humble opinion, which is, when this country shifted from pension plans to 401(k)’s, we essentially democratized all of this choice about something critical to people’s lives, their life savings.

And what happened was on the one hand we created democratization, choice. And then on the other hand we created a regulatory framework with the following assumption: There may be an entirely new industry born that would stand up to help those consumers make sense of those choices, and those were regulated at the outset as fiduciaries—VANGUARD, FIDELITY, et cetera. I believe we are on the cusp of a new role in healthcare, which is the role of the digital health advisor, or the information fiduciary, to whom the patient will entrust all of this information in order to make better sense of what they can or they cannot do. And that fiduciary will be an agent of change on a patient’s behalf to really bring about the information choices that are there.

Suppose the average patient today, **Dr. Klasko**, when they take a Medicare Part D plan, they fail to enter all the meds that they are on, so they get a bad estimate on price. They choose premiums, not estimated out-of-pocket costs. They leave \$500 on the table. A digital health advisor would say to that patient, “By the way, I could save you 500 bucks. I know the meds list that you have based on the doctors that you see and what you are on. Let me get you the right plan.”

And so who is going to be the digital health advisor? Will it be the local hospital or health system? The academic medical center? Will it be WALGREENS or CVS? Will it be a Silicon Valley startup that we never heard of? Will it be the insurance company? I think it is an open question, but I personally believe that is the new horizon we are going to see people organizing around, and it is going to be that change agent that will bring about the service features on data and operations that would allow us to bring that UBER-like experience to healthcare.

Mr. Gomes: If you had \$10 million to invest in innovation, where would you invest it, and how would you distribute your investment? Would you put it into consumerization, primary care, into telehealth, into health IT, into inpatient services, primary care? How much in each, and why?

Mr. Chopra: I would defer to accomplished healthcare investors like Bryan Roberts and Bob Kocher. Here are three simple observations.

Number one, tech-enabled services that boost productivity in each of the verticals you described are on the move. For example, a service that ensures a hospitalist rounds on the right patient at the right time to optimize discharges. Every role in the system can be tech-enabled to be smarter about the coordination and the opportunity.

Number two, process. I would generally believe that because we are in maybe the first or the second inning of a nine-inning stretch to redesign the healthcare delivery system. In an era where there is less maturity about what to invest in, and more green-field opportunity, I would set aside low-dollar funding for doctors, nurses, caregivers within the organization that have hypotheses worth testing. I would basically create a sandbox that would fund startups that came from within, because in this transition, great ideas are not exclusively the domain of the few on each coast. Your own staff should have as much of a role in shaping the future as anyone else to say, "Maybe what we want to do is create a new service for patients with back pain, which is a combo of the ROTHMAN INSTITUTE plus some other tech-enabled patient services," and the design of that experience itself might become a startup.

Part of the sandbox is that it opens up all the access in the organization to allow folks to merge, mash up, try, fail fast, and try again. As a matter of process, I would invest within more than I would in these categorical units.

The third element of this, in my humble opinion, is, as a broad statement about population health, we do not really have good mechanisms for feedback loops. Each silo in the system today only covers their specific aspects. Telemedicine gets the patient when they show up and when they leave, but they do not have the feedback loop about where that encounter contributed to that 6-month journey

“ I believe we are on the cusp of a new role in healthcare. ”

of the patient who is suffering from a particular condition. And so I think as a horizontal infrastructure investment, I do think we are going to need to do more to harvest feedback loops.

If you go to AMAZON.COM, they know that you bought something after a few clicks, and so they can calculate, when I show up on the homepage, what is the probability I am going to buy X, and what might I recommend to encourage folks to maybe buy Y? Whereas in healthcare, each silo only has the data about their silo, and as we stitch together silos to design a single feedback loop, we can effectively run an AMAZON-style recommendations engine for patients entering the care delivery system, such as, “You are here for X. Maybe we want to encourage you to access service Y because it will give you a better outcome.”

“Part of the sandbox is that it opens up all the access in the organization to allow folks to merge, mash up, try, fail fast, and try again.”

Dr. Klasko: I think as you look at the AMAZONS and the APPLES of the world, one of the things we do not do as well is turn technology into vision. So I think what we can do a better job of is communicating what we are doing and what we hope to achieve. If as a CEO of a health system, I just say, “Hey, I am doing something on telehealth,” and people say, “Well, that is just a gimmick. You are the head of an academic medical center.” But if I say, “Look, you know, we are going to fundamentally change the model so I can get the great things about JEFFERSON, our care and caring, out to where patients are, get our care out to their homes, as you said the right procedure in the right place at the right time,” then patients say, “Yeah, that makes sense.”

Mr. Chopra: I agree that we have to begin investing in-house. We have to change the DNA of healthcare one doctor at a time. We cannot have a healthcare system run by a bunch of doctors and nurses that have learned the old way and expect them to live in this new world. It is like they just got abducted and put onto another planet. Most of us do not even understand the language of the new consumerism and technology platforms. We have to invest the dollars not only in innovation and technology, but also in communication and leadership.

If I was in government, I would have put more money into places that are willing to really, if you will, retrain their physicians around being more innovative about

healthcare. Yes, this idea of a product can be a confusing word. It is the bundle of services that address the needs of a patient segment, and that line of thinking is not traditionally seen, I think, in the delivery system.

Dr. Klasko: Aneesh, one last question. I told you that we see *Healthcare Transformation* as a cross between *Health Affairs*, *JAMA*, and *People* magazine, so this is a *People* magazine question. I am a little jealous. I was just on CNBC with Jack Welch and they said, “Oh, yeah, you want to be a health-care version of Jack Welch,” but you get to be on Jon Stewart and get compared to George Clooney. How did that change your life? My kids would have been a lot more impressed if I were interviewed on Comedy Central!

Mr. Chopra: Well, let me say, it made my wife look at me in a whole new light.

Dr. Klasko: Aneesh, I cannot tell you how much this means to us. I do think this is going to be a fun opportunity for people from all over the country and beyond to really start to get a say in how we transform healthcare. I think having you, when we look a few years from now, as the face of the inaugural journal will have been a smart move.

Thank you. ■■■

Dr. Klasko Says:

There are many takeaways from Aneesh’s insights, but here are the three that stuck with me:

1. Joy’s Law: “No matter who you are, the smartest people working on the issues you care about work for someone else” is reversed in healthcare. “No matter what is wrong with the system, there is someone else to blame.”

In early 2016, we will be publishing a book about the next step for healthcare, titled, *How I* (insert your name here) *Messed Up Healthcare* that highlights what would happen if all of us looked in the mirror and, rather than saying transforming healthcare is impossible, we instead worked on what we can do in our own organizations and own cities. Aneesh’s examples about the opportunities contained in the Affordable Care Act transcends politics. Like a running back in football, you can blame the offensive line, or you can take advantage of the holes you have been given to run through.

2. We have reached a nexus point in consumerism in healthcare. Like it or not, we are no longer going to be able to justify our nonentrance into the consumer revolution. The only question is whether we as healthcare professionals will be watching it from the inside or the outside. Walmart, Walgreens, CVS, and many smaller companies view the consumer “revolution” in healthcare as a greenfield. Do we play on that field or bury our head in the sand?

3. There is a synergy between Aneesh’s comments and an interview with Jack Welch that you will read later in the Journal. Their background and their experience could not be more different, but part of their message was the same. If you are going to disrupt or transform a culture—whether in government, healthcare, or General Electric—you need consistent and constant messaging and communication about mission, behavior, and consequences. The healthcare organizations that can figure that out are the ones who will be “more optimistic about their future than their past.”