Innovation Conversations: Walter Isaacson, Part 1

September 17, 2020

Trey Powers: Welcome to Innovation Conversations, a special series of Sterne Kessler's IP Hot Topics podcast. I'm your series host, Trey Powers, a Director in Sterne Kessler's biotech and litigation practice groups. Joining me as a cohost for this interview is my partner and good friend, Eldora Ellison, who is also in our biotech practice group. Our first guest for the innovation conversations is Walter Isaacson, renowned author, analyst, journalist, historian, and professor at Tulane University.

Professor Isaacson has written extensively about innovators, including Steve Jobs, Ben Franklin, Albert Einstein, Leonardo de Vinci, and many others. He is currently working on a book about innovation in the biotech space. Professor Isaacson sat down with us virtually and shared a variety of insights about the state of innovation today, as well as some lessons from history. In the first of this two-part interview, we explore historical perspectives and lessons from past innovators. In part two, the discussion focuses on the current state of innovation in the U.S. and looks forward to what challenges lie ahead. Welcome to all of you our listeners and to you, Walter and Eldora.

Walter Isaacson: Thank you for having us.

Eldora Ellison: So Walter, we are so glad you could join us today. You've been dealing with COVID just like the rest of us have, of course. Do you have any particular tips that you could offer for how you've managed to stay productive and focused in this era?

Walter Isaacson: Well, I have a few things I do. When I get onto the second or third reply of an email I just pick up the phone and call people, because I think we do need to have at least voice contact and real personal contact in this day and age. Secondly, I set a few goals for myself. One of which was to lose some weight. The other was

to finish a book. And I try to keep myself focused. And the third, is I try to figure out how lucky I am in some ways. And we are, meaning my family, because we're safe and secure. And so how can we help others? How can we make sure that... I'm in New Orleans, the kids in New Orleans can get back to school safely. And if not, what we can do to make sure that they can learn safely. So I think it reminds us of the importance of looking after others, that we're all part of a community. That we're all connected and that a virus doesn't make a whole lot of distinctions. If it's going to hit a community, it's going to hit a community.

Eldora Ellison: Thank you for that.

Trey Powers: Walter, you've written about a lot of fascinating people and a lot of these were great American innovators. Historically, in your mind, what made the U.S. fertile ground for innovation?

Walter Isaacson: I think there was a frontier mentality that started, of course, from the very beginning for some of the people who came over here. Which is that it was an errand and over wilderness people were willing to take risks. And that notion of a frontier meant that you were always trying to figure out the new, rather than clinging to the old. Secondly, there was an ability to fail. Most great entrepreneurs have failed a few times. If you fail a couple of times in Europe you're not going to get the next round of funding. But unless you failed a couple of times in Silicon Valley, nobody's going to take you seriously. Third, is I think that we have a curiosity in America that comes from free range thinking; comes from this freedom to think and worship and speak and to read as we please.

And that ability to be curious about all sorts of disciplines, to be curious about the arts and the sciences. Just pause and think of normal things we see every day, like why the sky is blue or why the water in a pond ripples the way it does. Those types of everyday curiosities, I think we indulge in a lot and that's the very foundation, of creativity.

Trey Powers: Do you think that there were structural features in place in America that made some of the innovators that you write about successful, for example, in the government or from the government?

Walter Isaacson: Yeah, I think especially what you do at Sterne Kessler and what my friend Eldora does. If you look at the very first article of the Constitution of the United States, it has the phrase to promote the useful arts. And it gives patents and copyrights to inventors and creative people who have made good things. You know, this is not a new concept; it comes obviously out of the Republic of Venice in the 1400's and the Statute of Anne in England. But you see it codified in the very first article in the Constitution and in the Patent Act of 1790, which I think is probably the first real substantive law that Congress passes. Because the Constitution says Congress, in order to promote the useful arts, can pass laws in order to protect intellectual property. So when they first convene, that's exactly what they do. And that tug of war between being willing to share, being very open with our ingenuity, but also feeling that the people who create things and people who make ingenious devices or write material that's worth copying, deserve some ability to make a living from doing that I think was important.

And I think throughout the subsequent 200 and whatever it is 30 years since then, we've tried to get the balance right. My old friend Benjamin Franklin, who I wrote about, was the most ingenious, inventive, innovative, and entrepreneurial person of his day and generation. And he does everything from the Franklin stove to the lightning rod, the lightning rod being the most important invention of his era. Now he does not patent it. He does not patent it because he thinks it should be of use and out there for everybody. But of course he was somebody who could afford not to patent it. He had become successful by that point. And he was somebody who was both a printer and an inventor, somebody who understood quite fully the importance of creating intellectual property and being able to make a living from creating intellectual property.

Trey Powers: Do you think that tug of war, as you called it, is in the proper balance today in the U.S.?

Walter Isaacson: I think one of the silver linings of this very huge cloud that we're in with COVID-19, and once again it gets to something that Eldora and your firm are doing, is that it will remind us that a lot of what we're doing in terms of inventiveness or creating new treatments of vaccines or whatever. That scientists are doing it, yes, because they want to make a living, but mainly they're doing it because they care about the beauties of nature and they care about serving their fellow humans. And what you've seen, even in the narrow field that I'm writing about now, which is genetic engineering and biotechnology, that a lot of things that 15, 20 years ago, or 10 years ago were subject to a whole lot of intellectual property restraints. And the minute somebody would find something out they wouldn't share it, exactly. They would try to make sure that it was protected.

And as a lot of people in the university said it became a problem that you couldn't collaborate or share quite as easily as you wanted to, because you were trying to protect your intellectual property. Well, now, with COVID-19 people aren't protecting the intellectual property. They're going to be able to benefit from the discoveries they make in the longer term, but they're sharing it quite openly and quickly so that the material gets out. And if it is used, some of this intellectual property, in the pursuit of fighting this particular novel coronavirus that's causing COVID-19 many people including Berkeley, and for that matter, the Broad Institute of MIT and Harvard are saying, you can use this intellectual property license free in order to fight this Coronavirus. So I think nature has its own sweet ways of saying, remember why you're doing things and remember the importance of keeping things in balance. It doesn't mean throwing out the notion of protecting what you discover, but it also means remembering that, especially in times like this, you want to share it as widely as possible.

Trey Powers: Walter, you studied innovators from da Vinci, to Franklin, to Steve Jobs. In your mind what makes an innovator? Is it something innate or is it environmental, or is it both?

Walter Isaacson: The first thing I learned about innovators was something I'd learned by being at Time Magazine, and then CNN, and the Aspen Institute, which is, I'd run across a lot of really, really, really smart people. And after a while, it dawned on me that

smart people are a dime a dozen. They don't usually amount to much. What matters is people who can, as Steve jobs would say, think different. They think out of the box, they're imaginative, they're creative. That's what sets Steve Jobs apart from somebody, who I think probably is intellectually smarter than Steve jobs, and that's Bill Gates. That's what set Leonardo da Vinci apart, somebody who never went to high school, much less college, somebody barely knew Latin and yet could still teach himself and think differently. Think out of the box, be very creative. Ben Franklin, likewise, wasn't well-educated; nor Mark Zuckerberg, Bill Gates. One reason, I guess I keep writing about people who have dropped out of college, which may be why I don't get asked to give a whole lot of graduation speeches, but they were people who were willing to push the bounds, think different, take risks, and be imaginative.

Now what causes somebody to be imaginative? That gets to step two in the recipe. And I think the second part of the recipe is being comfortable in both the arts and the sciences. Being able to put your foot in the humanities on one side and technology on the other. If you've ever seen a Steve Jobs product launch, or looked at them on YouTube, they end with him on stage introducing the iPod, the iPad, the iPhone, whatever it may be with a slide of two street signs. It's an intersection of two streets, the liberal arts and technology. And he said, if you stand at that intersection, you'll be more imaginative. You'll be more creative. You'll connect with humans better. And to me, that ability of a Leonardo, or Ben Franklin, or Steve Jobs, or even an Einstein who, when he got stymied with his equations with general relativity pulled out his violin to play Mozart, that ability to love the arts and the sciences helps you see the patterns across nature. And by seeing those patterns across nature, you can think different. You can think out of the box.

Trey Powers: Walter, what should America be doing to provide for the fertile grounds for future innovation? Are there policies that you advocate?

Walter Isaacson: Yeah. I think I would, first of all, say that innovation and entrepreneurship has got to be more inclusive. Most venture capital now goes to a certain demographic segment of the population. Ethnic racial segment is likewise true of patents and everything else. I don't think that's because creativity and innovation are unequally distributed in our population. I just think that the systems we have tend to advantage, as I say, big institutions, also big research universities like Harvard and Stanford and Berkeley and MIT, but also places where there're venture capitalists. And I think we should try to create ecosystems and cities around the country, and towns around the country, and rural areas around the country where we can invest in people with creative and innovative ideas. You're starting to see that happen. Steve Case, with his Rise of the Rest, has been going around America on a bus trying to encourage the entrepreneurship that's happening in various cities.

If you want to see innovation in American now, you also probably should visit some of the small cities. If I go to Columbus, Ohio, or even Chattanooga, Tennessee, or Austin, Texas, of course, and New Orleans, I'll see new, innovative and entrepreneurial economies that are springing up where people are coming up with great ideas. And they need the water and sunlight to grow. And that water and sunlight includes venture capital. It includes expertise and legal help, and it

also includes mentorship. And I think we need to be doing that in smaller and other areas around the country, smaller towns, but also in African American communities, among young women. And that's got to start at the high school and the college level. And finally, since this is a lot of people in the legal profession, I think we have to look at antitrust and keep in balance the two prongs of the Sherman Antitrust Act, or the Edward D. White decision, and U.S. Steel versus the United States, which is you both want to make sure there's no harm to consumers, but you also want to make sure there's no harm to competition.

Just as in the case of *U.S. v. Microsoft*, Apple wasn't necessarily harming consumers by bundling in a browser with its operating system; or even if they did try to bundling in a search engine because it was all kind of free. It was all easy, it was seamlessly integrated. They weren't harming consumers, but they were harming competition. It was keeping Netscape from creating something that might be a rival browser. It probably would have harmed Google from creating a rival search engine, had Microsoft been able to bundle everything into Microsoft Office and the operating system. So I am not saying we have to revise antitrust law. I think the law is actually quite good. But I think we have to say when my entrepreneurial students are coming out of Tulane and they're going into the idea village here in New Orleans, and then they're pitching ideas and we're bringing in venture capitalists to hear them.

And they'll pitch an idea. Sometimes what I think are dumb little ideas, like a dating app for people with dogs. So the dogs can meet each other and then decide whether they want a date. You know, my first question is, do we really need that? But the first question of a venture capitalist says, well, that sounds like a good idea, but how are you going to prevent Facebook from embodying it in their system and destroying you. And in the end, they don't get an investment because the big companies so dominate the market that I think we tamp down entrepreneurial competition.

Eldora Ellison: Do you have any favorite examples of a situation where you think our system has worked well to promote innovation and perhaps our patents have supplemented that in promoting innovation for the betterment of society? Give me favorites.

Walter Isaacson: Well, of course, Eldora, you would know one of those fields, which I'm writing a book about. And I thank you for your help. It involves Jennifer Doudna, and Berkeley, and Emmanuelle Charpentier, who I talked to this morning, who are clients of your firm. But I think in the biotech industry in general, it has been very good. It goes back to the founding of Genentech. And forgive me if I get my dates wrong, but I think it's like 30 or 40 years ago where Herbert Boyer and others had figured out a way to not only engineer new genes, but mass produce them. And some young venture capitalist comes along and says, "Hey, I'd like to invest." And some intellectual property lawyer who isn't somebody they knew. So I said, you should take out a patent on recombinant DNA. And the person who had first done recombinant DNA, Paul Berg, never thought of it. But Boyer ends up creating Genentech, which is the largest, greatest IPO of that day and generation.
And it's done because an entire biotech industry is able to combine the innovation of great academic researchers with protection, for intellectual property and venture capitalists who say we can make Genentech. So I watch what's

happening now with CRISPR and other genetic engineering technology. Yes, there's a big battle over the various pieces of intellectual property. But as I spoke to Emmanuelle Charpentier this morning, we were talking about how Victoria Gray, an African American woman living in rural Mississippi, was up in Nashville a month ago on the third round of testing after she had had CRISPR edit her genes and the genes in her bone marrow so that she would no longer produce sickle cell blood cells.

In other words, it cured her of sickle cell anemia. That is totally amazing. And it happens largely because we're able to allow people to be rewarded for inventions. Like how do you use gene editing to cure sickle cell. And by doing that you create companies, in this case it was CRISPR Therapeutics, that are then able to market their inventions. As long as we can keep this in balance, as long as we're not having people exploit intellectual property to the detriment of humankind, it has for 40 years worked enormously to the benefit of humankind and will do so in this COVID-19 crisis.

Trey Powers: Walter, what's your perspective about how innovation has affected the way the world is handling this COVID-19 pandemic compared to, for example, the pandemic that we confronted about a hundred years ago?

Walter Isaacson: When you're looking at the 1918 flu epidemic, unfortunately, one of the things you think is, gee, it sounds pretty familiar. Meaning it took them a while to figure out what was causing it. They said, wash your hands. They said, wear a mask. They said, don't gather in big groups, but in some places people did gather in big groups and the flu spread. I'm a little disappointed that after 102 years, I feel we should have progressed more specifically in the ability to fight virus attacks. What we have seen throughout human history, and we've seen in the past 20 years of our history, wave after wave of new viruses. Whether it's SARS or MERS or HIV/AIDS or Ebola, or now SARS-CoV-2 and COVID-19. And it almost feels like if we're not in the middle ages, we're still in 1918 where these waves hit us and we don't have the right defenses.

So I'm hoping, having talked about CRISPR and written about CRISPR and having talked about biotechnology, that in the next five to ten years, we are going to be able once and for all to defeat viruses. In other words, we're going to be able to know the genetic code pretty quickly of any virus that poses a threat. And we're going to be able to create tools instantly by knowing the genetic sequences that are dangerous to us, that will go and cut up those genetic sequences or vaccinate against them. And it will be not only vaccine that works against the virus, but a reprogrammable vaccine that over and over again, as each new virus mutates, all you have to do is spend maybe four or five hours typing in the new genetic code and you can reprogram your treatments and your vaccines to take on each new virus.

Now, this seems very futuristic, but let's remember bacteria have been doing this in their fight against viruses for 3 billion years. That's what CRISPR is. So I'm hoping we can learn from nature to say, we don't want to just wash our hands and have face coverings like we did in 1918. We don't want to go back to the Ben

Franklin days and try to figure out smallpox and each new vaccine as smallpox changes. We want to defeat viruses once and for all.

Eldora Ellison: Is there anything that you think our legislators or policymakers should be doing differently to speed that up?

Walter Isaacson: In some ways, I don't want to sound crass, but I think they need to get out of the way. If they were starting to do too much to regulate genetic engineering, that would be a bit of a problem. Starting with the Asilomar Conference in the 1970s, which happens right after recombinant DNA gets invented, David Baltimore, who's been at the forefront of what should government be doing in terms of regulating biology.

David Baltimore did a process called asilomar, where they did a lot of self-regulation on genetic engineering and recombinant DNA. But that helped fend off the Congress from deciding to pass a whole lot of laws. We're seeing that also with CRISPR, whether the very unfortunate thing where the Chinese doctor, Jiankui He, created the twin CRISPR babies in an unauthorized way. I thought that would lead to a backlash and a whole lot of legislation, which I thought would probably be counterproductive. Fortunately, it led to scientists and doctors all saying, "Let's try to regulate ourselves rather than have government regulation."

Trey Powers: Thank you again for joining us in the Innovation Conversations. Be sure to tune in for part two of our discussion, focusing on the current state of innovation in the U.S. and looking forward to what challenges lie ahead.