Oral History of David M. Kelley

Interviewed by:
Barry Katz

Edited by:
Dag Spicer

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Katz: It's July 11, 2011. I'm Barry Katz and I am at the Computer History Museum interviewing David Kelley about his, may I say, extraordinary career.

Kelley: Well, thank you, sir.

Katz: In fact, David, I'm not trying to flatter you but I think you have had a really remarkable career, which, as I read it, lies at the intersection of design and engineering, and that's the theme I'd like to probe. Maybe we can just cover some material that I know you have talked about in the past but that has to do with your training and your evolution from electrical engineering into design. Can you tell us just a little bit about how that happened?

Kelley: Sure. When I was a young kid in kind of a blue-collar town in Ohio the notion of design never came up. Most people worked in the factory and the highest thing that they could hope to attain was to become an engineer, because that's who'd come down out of the office and onto the floor of the factory; so that's what you aspired to be. I was also very good at art. I'd won all kinds of art awards when I was in school.

Katz: Really?

Kelley: Yes, but art was not a possible career for a boy coming out of Ohio, so I found engineering, which seemed to be the thing. I was good in science and math—in fact I lettered in math in high school. If you had a little math you got a "B" [for Barberton High School] — the same one the football players got, but they had a little football in the center and mine said "math." They wore theirs on a white letter sweater but you didn't wear the math one, because if you did you'd probably be put upside-down in a trash can.

Katz: Mine was for wrestling.

Kelley: There you go. Anyway, I went off to Carnegie Mellon [University] thinking I was going to be an engineer. I took a lot of art classes and things, but it was a purely analytical program—kind of a computer science-engineering combo. It was interesting enough, but I found it difficult. I was not the top of the class, and I could tell that I wasn't put on Earth to be an analytical engineer. That was clear, because there were other guys in the class who were, and the professors were paying attention to them and not paying attention to me because I was not that interesting. And then one day I was fixing up my Dodge van to drive across the country with my girlfriend upon graduating. I was building this cabinetry inside and I needed to be able to cut a bunch of lumber—I was doing it out behind my apartment and you can't do everything with a handsaw, right? So I decided I needed a table saw. Well, somebody came by—I don't remember who it was—and said, "They got a table saw in the Design Department." I was still in school,

and I thought, “Design? What’s that?” So I went down into the basement, and down there was Industrial Design, and I thought, boy, I’d died and gone to heaven. I mean, you can major in this? You don’t have to take tests in Lagrangian theory every week? You could make something with your hands, which I’d always done my whole life? And so I discovered design. I decided to complete my engineering degree—I didn’t get a design degree at Carnegie Mellon, I got an electrical engineering degree—but, as you described, from that point I enjoyed the balance between the analytical mind and this design mind, this intuitive mind. From there I just have always held those two things together, which is the kind of engineering rigor and interest in technology and the interest in humans and aesthetics.

Katz: It’s always interesting how much these stories have to do with cars and girls.

Kelley: Always.

Katz: How did you make the cross-country trip—not necessarily that particular drive, but how did you find yourself out in California? I know there was an interlude at Boeing.

Kelley: When I graduated from Carnegie Mellon, it wasn’t a particularly good year; it was 1973, and the most interesting job that I could find was with Boeing Commercial Airplane Company in Seattle, Washington; beautiful place. Airplanes were highly exciting things at the time, and so I drove across the country in a van with a fraternity brother and ended up in Seattle. I was in the passenger payloads group, the group that involved people. I wasn’t in the flight control group, I was in the group that designed the stuff that the passengers used, which was a good fit for me. But it just wasn’t my kind of place. I didn’t enjoy the atmosphere. It was very analytical, very “do a drafting drawing and check it and back and forth,” so I knew I wasn’t going to stay there. But one of the seminal moments of my life happened. 1973 was the gas crisis. In the summer of ’73 you couldn’t get gas; you had to go on alternate days, and I lived a long way from the office. So I put up a sign for carpooling and this young guy named Bill Potts answered the ad, and he and I started carpooling. As we got to know each other, we really hit it off—he’s one of my best friends today, 30-some years later—but he kept saying to me every day in the carpool, “You’ve got to go to Stanford. This Product Design program is perfect for you.” He saw me making things and building things onto my van—I still had the same van—and he just kept pushing me. I said, “I can’t get into Stanford,” and he said, “Look, you’re perfect. You’ll get in.” He was the one that really pushed me to go to Stanford. So I applied and, sure enough, the portfolio of all these projects I had done was received by my mentor and hero, Bob McKim. If you talk to McKim, he always tells the story about how he just fell in love with my portfolio. He didn’t notice that I didn’t have good grades or that I really wasn’t that stellar of an engineer and admitted me to Stanford. So I started there in ’75.

Katz: Characterize the Stanford program. What was it like when you arrived? I know that it’s evolved tremendously in the last 35 years. What was its “center” in 1975?

Kelley: Well, I got there in 1975, and it was really about the balance between art and engineering. Design, design thinking—that kind of thing hadn't come up; they were looking for people who had the engineering chops but were interested in art. The program had two professors in engineering and two professors in art: Bob McKim on the engineering side, with Larry Leifer, and Matt Kahn on the art side and Jan Mollenkamp as the graphic designer (they always had a graphic designer on the arts side). You really did kind of walk back and forth between the art department and the engineering school in that way. It's different than today, when it's centered on design. [Back then] you didn't have your own identity. When you went to art class you were thought of by the art people as a nerd, and when you went with the engineering people, they thought you were wildly artistic compared to them, but you didn't fit in any group. There was no center, in my mind, anyway, called "design." But I was so excited. I had found my fit in life. I mean, sitting here today I feel so lucky, and that was the moment that I realized that I had found my fit. And this is what I work on with my students all the time—trying to help them find, "What were you put on Earth to do?" I really knew when I got to Stanford: It was based in the machine shop. The people were doing things with their hands. They cared about intellectual pursuits and ideas were as important as the final product. I just found it to be exactly right for me.

Katz: So, in a way, there were no real "designers" on the faculty. It was the art people plus the engineering people, and the idea was that the product would be people like you, who would be this new race.

Kelley: It was. Bob McKim was a designer, although I'm not sure what he would call himself, because there was a profession at the time called "Industrial Design," which we were not, right? Industrial design was firmly entrenched in the art camp, and the people who went into industrial design, who were really good at it—first, they lived in Europe, not the United States—they started at about Grade 6 drawing things and they skipped the whole part of a liberal-arts education or an engineering education. They were kind of mined from the population for their talent. So we knew we weren't that. They had their own society, the IDSA, and they'd come every few years to reject us. When I started running the program I'd say, "No, you really don't want to come." They'd come to reject us, because we didn't have enough art in our curriculum; we had too much engineering.

Katz: What was your final project? You did a thesis project, right?

Kelley: Yeah. It's a funny story. It was two-year program and you spent the second year doing a project. It's your design, your choosing. Part of the thing about our program is about need finding: finding what problem is worth working on is as important as the problem-solving. That was unique. For my project, I was kind of enamored with the home pregnancy testers that had just come out, and so I waded over to the medical school to try to find out something that was like that—a product you could do that had real human value. I ran into a guy over there, Dr. Sachs, and he tried to talk me out of most of the ideas I had but said, "If you want a really interesting problem," "follow me." So we went down into the basement of the Art Depart…

Katz: Medical school.

Kelley: I went into the basement of the *medical* school, and there was this woman sitting at this desk. I'll never forget it: Behind her were these filing cabinets that looked like [something out of] "Raiders of the Lost Ark"—I mean *really* looked like "Raiders of the Lost Ark," and they were all full of medical records. He said to me—there was a stack of them sitting on her desk—he said, "You know what happens if we misfile this medical record?" I looked at him: "I don't know." He said, "*We never find it*." And so he introduced me to the notion of medical records, and that was my master's project, called "Medical Passport." I worked on a device that [allowed] patients to control their medical history.

Katz: This is huge now!

Kelley: It's huge now. This was before computers, certainly before personal computers, so the technology at the time that I went for was microfiche, microfilm. In the end, I made this big machine. There were optics and electronics (I was an electrical engineer, so I could do the microprocessor that controlled the printer and stuff). When you went to the doctor, he wrote all the things he would normally write. He put it in my device and it attached a little image of that onto this piece of microfiche, and then you carried that with you. You took it home like your passport or something, and you kept it in a safe place and it had your entire medical record on it. Because one of the things I found in talking to the people was that if you didn't control your own medical record, if you moved from Pittsburgh to Seattle …

Katz: What does your hospital in Pittsburgh care?

Kelley: They don't care. Anyway, so the combination of having an updatable medical record and a patient-controlled one was my master's project.

Katz: How interesting. Did that go anywhere beyond the master's project?

Kelley: It didn't go anywhere, because magnetic media came in very quickly after that. We're talking about 1977, '78; after that it was much easier to put it on a disk.

Katz: But the idea would bear fruit.

Kelley: It was a good idea at the time.

Katz: So you rolled out of Stanford in what year?

Kelley: ’78. I started in ’75. I completed my master’s project in ’77. Then I decided that I was going to stay on and do a Ph.D., because I really wanted to teach. One thing I didn’t say is along this path I ended up teaching; because I was McKim’s student, I ended up TAing lots of classes, and I found that TAing a class really was a good fit for me, and that I learned the subject better. I didn’t actually feel like I knew the topic as well before as after I taught it, and I think teaching is a really interesting way of learning.

Katz: I’ve always felt that teaching is the point where you really learn what you don’t know. There’s just no faking it.

Kelley: Exactly. I really think that TAing is an experience not to be missed when you’re a graduate student. Anyway, I really wanted to teach. Well, if you’re going to teach you should have a Ph.D., in a place like Stanford. McKim advised me against it. He thought it would ruin me as a designer. He said, “Just go teach as an adjunct faculty.” But I signed up with Larry Leifer, who now runs the Center for Design Research at Stanford, and I was going to work on a Ph.D. As I started to work on a Ph.D. I realized I was a little bit dyslexic or had enough attention disorder that reading and writing were not going to be my things.

Katz: McKim was right.

Kelley: Exactly—McKim was right. And so I didn’t do a Ph.D. but I spent a year there—a very interesting year—taking courses and working on some research with the VA Hospital that had to do robotics for quadriplegics. It was really rewarding work, but I decided I wasn’t going to do that: I was going to start a company. I went to Bob McKim and I said, “Bob” (who I was closer to by then; he’d lent me money to buy a house, that’s kind of our relationship) and I said, “Who’s graduating that would be good to start a company with?” And he gave me the name Dean Hovey. And so Hovey-Kelley was formed—it’s sort of like Terman and Hewlett and Packard, in a much smaller way: McKim, and Hovey and Kelley.

Katz: Frederick Terman being Stanford’s famous entrepreneurial provost, who put Bill Hewlett and Dave Packard together.

Kelley: Same story.

Katz: And McKim, on a slightly different scale—let’s face it—put Hovey and Kelley together.

Kelley: Didn’t turn out to be as big a deal, but it was the same kind of idea.

Katz: So you got it into your head you were going to start a company. What was the climate in Silicon Valley or Palo Alto at that time? Were you jumping into a fray with dozens of other companies and you were imagining that you were going to be the best, or were you one-of-a-kind?

Kelley: No. In the same way that Product Design at Stanford was kind of unique in the country as far as a point of view, when we started Hovey-Kelley we were the only game in town. Now, a lot of people said that's not a great thing to be: You want to be in an industry where you can be the best. Well, there were other engineering consulting firms, but those firms had a specific technical purpose—like they were great at vibration, so if you had a disk drive that had a vibration problem, you'd hire these technical guys; or you could be really great at adhesives, or something. But we were general-purpose, for-hire kind of engineering talent, design-engineering talent, and that didn't exist anywhere that we knew of. So we were able to kind of help out with all kinds of projects where there was an industrial designer primarily involved and they needed to take that industrial design and realize it into production.

Katz: Were you aware of GVO?

Kelley: I was aware of GVO. They were there, but we saw them—and I think it played out to be true—as all industrial design-trained. They were working on the same problem bit, where the client wanted them to go further than they wanted to go; so we were the kind of back-end of what GVO was doing.

Katz: Got it. This is a screwy kind of a question but I'm going to try it anyway: If you were more or less alone in the field with a new kind of offering that didn't really exist, how did you describe to people what you did and what you could do for them?

Kelley: We always had the problem that we were not experts. As a consultant, it's easier for you to explain you're an expert. We had the problem that we were going in and we were saying—like to a furniture company—"We have this design-engineering firm. We have the methodology where we do need-finding and then we do all these things, empathy, whatever, and then we have these engineers and we'll do the detail work and give you the drawings and you could have it made." And they always had the same question: they would say something like, "Son, have you ever designed a chair before? Like for a furniture company?" and I'd have to say, "No, but we have this method where we'll come up with a new chair. Our method will result in an innovation in the chair world, where the experts in the chair world…" So we were selling ourselves as naïve with a method that would result in a new idea that would be different from the one you would get. It wasn't that we had no competition. We were competing with an in-house engineering group. So we were the additional capacity compared to your in-house group, or we were more creative than your in-house group. We had to react to whatever the internal engineers were in the company.

Katz: What kind of problems were you being given? What kinds of clients did you begin to attract? I've heard you say—I think it's a striking formulation—that in this period, the late '70s, the early '80s, in Silicon Valley you were not simply being asked, as previous generations of designers had been, to improve last year's toaster but to work on entirely new *categories* of problems that never existed.

Kelley: Being in Silicon Valley in the late '70s, early '80s, was a wonderful time, because everything you were given to design was new to the world.

Katz: What's a "mouse?" What's a "modem?"

Kelley: Well, yeah, or, design a portable computer. There wasn't a portable, so you first came up with something that was like a breadbox and then you came up with this thing. We have the patent on [a laptop where] the display covers the keyboard to protect it. I mean, I think most people would've come up with that idea, given the problem, but we were *given* these interesting problems. So I feel really lucky, kind of just dumb luck, I ended up right there at that time. If I was in New York, I would design another wastebasket. Design another toaster. Design another chair. But we were in Silicon Valley and it's, design another disk drive, modem, computer, joystick, mouse—that kind of stuff. So it was a really lovely time, because we were designing stuff that was new to the world, so you get to decide what the iconic view is. I mean, the mouse—we got to decide what the iconic shape would be for Apple's mouse and Microsoft's mouse and all that kind of stuff. Was it going to be cutesy-like and look like a mouse—we had some of those—or is it going to be a bar of soap? Is it going to be a little thing that you hold like this? Are you going to palm it? All those things we got to decide.

Katz: Totally open questions.

Kelley: And not just what they were but how to test them. With mice we got to decide that you were going to test them "miles to failure," and we took an old turntable, an old...

Katz: You mean literally miles?

Kelley: Miles, number of miles. We took a turntable and we took our mouse designs, different ones, and we were testing them for reliability. We'd slap them on the tone arm of a record player. We knew the record was turning at 33 and a third RPMs, so we could calculate how long it ran before it started failing and we knew many miles to failure. It's subtle, but since you were inventing everything you were inventing the methods for testing things along with what they were going to look like or be like.

Katz: Highly innovative testing techniques. You may say it was dumb luck, but I'm thinking of Louis Pasteur: "Chance favors the prepared mind." It takes something more than being in the right place at the right time.

Kelley: Well, the important thing is, again, back to what I had tried to work on with the students, trying to find your fit in life, and I don't think it was happenstance that I kept looking for a place where this kind of "technology meets design," and if you were looking in the world, Silicon Valley was the place. Technology meets design.

Katz: Tell me about some of your early collaborations and how the firm began to grow. It starts out as Hovey-Kelley Design with half a dozen of your buddies from the shop at Stanford, and the company begins to grow but you also begin to develop alliances with people such as Bill Moggridge and his ID Two company, [and] with Jerry Manock, who was by then doing most of his work for Apple. Can you talk a little bit about how the family grew?

Kelley: Sure. So, we were in this design-engineering-for-hire world, but there were many other consultancies in the area, and they were doing related things. As we started to work, we realized pretty early on that we were doing our own in-house industrial design. We had our own engineers, but it became clear that we weren't as good at industrial design as we were at the engineering part, and we kept looking for partners to do that. We found partners as they started to come from Europe. We liked the Royal College-trained artists and designers. The first one that we really got involved with was Bill Moggridge; he had a thing called ID Two (he had a company in England called Moggridge Associates and he moved a piece of it). He was a real pioneer. I got there because I was at Stanford. He was actually smart enough to see that it was worth coming to Silicon Valley and took the challenge to do it. We started working with him, and the combination was really lovely between European design and American engineering, and we started doing projects for people all over the place and it was really good. And then a few years later Hartmut Esslinger and frog came, and we formed the same relationship with them, where together we would go in and pitch clients. We would say, they would do the industrial design and we'd do the engineering, and you, client, would not have to mess with that interface because we'd do it for you. We'd do those hard bits of not compromising, because the problem before for the client was that if they hired just an industrial designer, which existed, then *they'd* have to do the mediation. The problem is that the designer does this lovely thing—you know, you see these beautiful concept cars, and then they're compromised and they end up with a Chevy Caprice. In the end, somebody compromised. I mean, no self-respecting designer did something that ugly, right?

Katz: Same with fashion. There's the runway stuff and then the things that people actually wear.

Kelley: Exactly. So, the good bits are compromised away in the realization part, and we—Hovey-Kelley and, two years later, David Kelley Design—we stood for not compromising those bits. So we were in love

with the industrial designers and we really tried hard to keep those wonderful bits all the way through into production. That's how we made our name.

Katz: That's interesting; industrial designers will often claim that the engineers are their enemies because they're the ones that are always saying, "You can't do that."

Kelley: "You can't do that," right.

Katz: "We can't build that. It'll cost too much money."

Kelley: It's hard. It's too expensive. It's like, why bother?

Katz: So you're the ones who are going to tell them, "We'll show you how you can."

Kelley: We'll show you how you can, right, and that was our offering.

Katz: You made a really interesting point about how this was going to be the combination—you plus Moggridge, you plus frog—of "American engineering" and "European design." Can you say what you mean by European design or what Americans thought European design was?

Kelley: Well, I really think that European design was much more highly evolved in the early '80s than the U.S. was. I'm a big fan of the U.S., but what I attribute it to was, when we were growing up as kids we were taught who invented what, right? Eli Whitney, Alexander Graham Bell, and even stuff that wasn't invented in the U.S. we believed it was invented. We had this thing, if you're in the U.S. you're clever; you have this kind of clever-invention gene. But we were never taught who painted what or who danced what. That wasn't in our education. I think in Europe that always was. The creative arts were always a part of their education and they thought that was something they could do, or they were encouraged as kids to take art classes and whatnot. So, the schools like the Royal College of Art or today Eindhoven or Delft, these schools were highly evolved in teaching industrial design in particular, and I just think they were ahead of us both in mindset and in their training. So it was lovely to see just how good that design was when they started coming to Silicon Valley and kind of buddying up to them. We were really proud of the things we were doing together.

Katz: A lot of it also has to do with history. If you have an orientation that it's about who invented what, as you say, then the history is the history of wrong ideas getting progressively more right; nobody thinks that way about Michelangelo.

Kelley: God gave us this gene that makes us wonderful.

Katz: How about Apple? As we talk about the major turning points in the growth of the company, at some point you developed a relationship with Jobs, with Apple, and with the design group there.

Kelley: Apple's probably the big turning point. Once we started designing everything for Apple, all of the other people that came in the door would say, "We heard you designed the Apple stuff. Would you design our stuff?" That really made the company take the first big leap. The way we got involved with Apple is, there was a guy a few years ahead of us at school, at Stanford, who went through the same program that Dean Hovey and I went through, named Jerry Manock. And Jerry Manock had somehow—I don't know how—gotten involved with doing the very first [mass-produced] Apple computer, the Apple II. At the time HP was the big design behemoth, the one we all wanted to emulate; they knew about structural foam and stuff, and I think Jerry had come from there. Jerry was kind of a one-man show. He liked working on his own, and Bob McKim had mentioned that we should go talk to Jerry. I can remember the day that I walked down to this big garden [office complex] in Palo Alto—it's not there anymore—but it had an internal atrium that was a garden, and there in one little corner up there was Jerry Manock. I didn't know him from school but I introduced myself. I think it was just me the first time; maybe Dean went and [we] introduced ourselves. He was working on this Apple stuff, which was really interesting. We didn't really know much about it—Apple was pretty new. We knew the Apple II computer, but we didn't really know, and Jerry had been working for Apple.

Katz: Does 1982 feel about right for that, or is it a little bit earlier?

Kelley: '81. Had to be before '82. '81 was when we changed to David Kelley Design, so it was before that, so I'd say it's '80, maybe, maybe '81.

Katz: And you were just up the street on University Ave?

Kelley: He was on University Avenue and we were on University Avenue. We were just up the street. He was one-something. We were two-something [Hovey-Kelley Design was at 259 University].

Katz: In this little dump upstairs from a…

Kelley: …from a dress shop—I still have the front door from that building in my office [Kelley actually has the door from 514 Bryant, the next Hovey-Kelley office]. Anyway, Jerry said, "I've got more work than I can deal with—you guys help me." He was very generous, and was to us for a long time. So we got involved as being temporary employees of Apple (I have a badge that says "T1," first temporary employee

of Apple), and we would go down with Jerry—he was, again, generous. He would introduce us to Steve and Rod Holt and all the guys who were doing the work. It wasn't like he kept us as his workers. He was very generous and we then started our relationship with Apple. From there we got the contract to do the Apple III and Apple 4 (which was Lisa) and joysticks—I think we did 50-some projects for Apple in the end. They didn't have internal design at this point. They had Jerry, who was outside, and there was us. From that moment on—after we did Lisa—they started hiring internal designers, and it became all internal, of course, as now. But Jerry Manock and Hovey-Kelley Design and later David Kelley Design was the design house that they preferred. And then if you want to go further than that, eventually they do a worldwide search many years later and they find frog. And then we're working with frog internally and we're doing the engineering backup. We'd worked with frog all the way along now.

Katz: And then Apple will gradually, out of this experience of working with these very innovative designers, just increasingly recognize the value of design.

Kelley: Somewhere they got the message. It wasn't early on. I mean, they were a real computer company, but they wanted to do everything to the hilt. They wanted to do everything in an excellent way, and once they realized design was one of the things that mattered, then they wanted to do that, and specifically Steve really wanted to do everything in an excellent way and he really wanted to do design an excellent way, and he fell in love with it.

Katz: From your perspective—and I know you guys are pretty good friends—do you have any idea where that came from in Steve Jobs?

Kelley: No, other than I think if I had described designers, designers do everything with *intent*: The color of their shoelaces matters, and their glasses, and how they wrapped the present for a friend matters, and how their handwriting looks on the thank-you note—I mean, everything's done with intent, and Steve was that kind of guy. He did everything with intent. And so I think it resonated with him in that way, but it happened [gradually]; I mean, the Apple II was excellent industrial design for the day, but that was as early as you could get.

Katz: It was hugely successful. It was a turning point in desktop computing.

Kelley: For sure. I mean, the case was *considered*. And then they started caring and once it got more sophisticated they got more concerned about the angle of the display and how do you take the boards out and in to the back of the Apple II. And each thing they got more and more human-centered as well as more aesthetically-centered.

Katz: So, it's fair to say that you guys really did play an instrumental role in planting a design aesthetic at Apple?

Kelley: I guess you'd have to say that. I mean, I don't know that it's the one that they continued to employ, but in the early days there was nobody else around, so, yes. The big change came when the Snow White project happened.

Katz: Snow White is their worldwide search for a world-class designer to create a design language as they moved forward.

Kelley: Right, and Steve resonated with Hartmut Esslinger, and then frog came in.

Katz: But you remained involved?

Kelley: Yes. We remained for years, I mean, long after that—not as the industrial-design firm, obviously.

Katz: I see.

Kelley: …because we were doing industrial design. I personally did the industrial design on the Apple III. It's *terrible*, but that's who we had, right?

Katz: What made it terrible?

Kelley: That it was…

Katz: So we flattered you so much, let's insult you now for a few minutes.

Kelley: Well, with all design, it was the constraints, right? The constraint was, no fan, and so it had to be a big casting and it kind of looked like a lump of bread by the time I got done. It wasn't horrible for the time—it evolved from Jerry's Apple II—but it wasn't new, crisp in the way that [it became] as the Europeans came in… It was less sophisticated [which was] not so unusual for American design. American design, since we're into manufacturing… it was kind of like the guy in the manufacturing shop says, "Let's put three stripes on the side of it to give it a little pizzazz." That kind of American design. We were better than that, but…

Katz: And maybe some wood grain or a little leatherette texture to it. How about the place of the mouse in all of this? This is one of the landmark accomplishments in American design.

Kelley: So what happened with the mouse was, the mouse existed. The concept of the mouse existed at SRI and Xerox PARC—Doug Engelbart—as did everything else: Ethernet and pull-down menus and all that kind of stuff. And one day we went up to see Xerox PARC with Steve, we all went up to Xerox PARC and he had the vision: “This is it.” I mean, he knew that this was going to be the future, and that’s how Macintosh happened. But he made some deal—I bet the Computer History Museum knows what happened—but in some way we ended up having access to their technology (we, the designers), and they [Xerox PARC] ended up with some Apple stock. I’m not the right one to ask that, but somehow in trade for some ability to invest in Apple we got access to the technology. And so Steve said to us, “Look, we need a mouse. It needs to cost $17.00 or something and needs to work and needs to be manufacturable and reliable and so forth.” And so we took this on and it was the most exciting project we’d ever had, because we got to determine how you hold it in the hand and what the technology is inside. The Xerox PARC technology, as I remember it, was a wheel and it had commutators, little wires that sort of looked like those machines for earthquakes—and there were wheels going in two directions. So we started out by looking at it and ended up using a ball and similar to how trackballs were done and little photodetectors and stuff. And there were really amazing advances. When we first started out we thought that the mouse had to be very accurate, so we were measuring: If you moved the mouse an inch, how much did it move on the computer screen? It was that kind of thing, and we were doing the software. What IDEO—what would be IDEO—was doing was the software and everything else, and then at some point somebody realized we didn’t have to be accurate at all, because if you do the diagram, the human brain was in the loop. It was going to make up the difference. If you needed to move it an inch on the screen, the brain would stop at whatever the right spot was. It doesn't have to be accurate how it moved. Since it was going through the brain, it was dot-to-dot. And so, all the tests we started doing...

Barry Katz: It's that great portable computer on your shoulders.

David Kelley: Yeah. So, the mouse didn't have to be that smart. We could keep reducing the cost, from what we thought, because you had to draw the block diagram that had the human brain loop. And so, all we had to do was move consistently. That project was really exciting.

Barry Katz: It’s exciting just to hear about it 30 years later, because you can kind of feel how all of the constraints are working in favor of one another. So you want to drive the cost down—I think the Xerox mouse cost 400 dollars...

David Kelley: Something like that, yeah.

Barry Katz: …and I'm told that the engineers had to take it apart at the end of each day to clean the parts and reassemble it so it's ready for the next day.

David Kelley: Yeah. But I mean, the Xerox guys did the big deal. They invented the concept. So, I have to be very careful to say what *we* did was invent the technology that made the thing realizable, not the concept of a mouse.

Barry Katz: But it's also that theme that I raised at the very beginning of today's discussion, which is the evolution from technology into design, from engineering into design. Xerox was an amazing feat of engineering, and what you guys did was an amazing feat of design.

David Kelley: Yes. But they were mindful of what—like, pull-down menus and stuff: For the first time the researchers, the Ph.D.s in the ivory tower, were starting to think, “Let's consider making it easy for the person.” Because before that, you know, it was more macho to make it really difficult for the person. Only Ph.D.s can use this device because it's for *us*. It's *our* device. Why should we make it easy for mom and pop to use it?

Barry Katz: And who the hell needs a computer anyway?

David Kelley: Exactly. Exactly. What are you going to do with it? So, they were on that jig. But because of the Stanford design program, we were well down the path of need-finding and empathy for people and that there would be invention coming from empathy for people along with invention coming from a technology that you then tried to convince people was a good idea.

Barry Katz: So, I think you want to soften my distinction between engineering and design a little bit, that a lot of what we now call user friendliness was already part of what they were trying to accomplish. But I think you guys really pulled it off.

David Kelley: That’s part of what they were accomplishing at Xerox PARC, but I don't know many other companies that were doing it... I mean, I'm such a believer in this kind of design thinking stuff where you actually build empathy for users, that I think that the reason that Xerox PARC was successful was that bias towards people.

Barry Katz: That's good to hear. Your erstwhile partner, Dean Hovey, told me that in a discussion with Jobs, Jobs ran his hand along his jeans and said, "I want people to be able to work it on their thigh and not just..."

David Kelley: Yeah, he did. The thing that was interesting is it was such a small community at the time. So, when I was at Stanford, I did other projects besides my master's project. The main project I did, besides my master's project, was with Xerox PARC. A guy named Bill English was running the show. I did a device that did automatic indexing of microfilm. And so I would go back and forth, and we would have badges, and we'd go back and forth to Xerox PARC, between Stanford and Xerox PARC, and you couldn't tell who was from Stanford and who was from Xerox PARC. And so, that openness was a big part of it.

Barry Katz: That doesn't exist today to anything like the same extent.

David Kelley: No. I don't think so.

Barry Katz: There's still a great deal of fluidity in our community, but those were the heroic years, I think.

David Kelley: Yeah. I think Stanford's done better than most at infiltrating into companies, or the other way around. And if you look at IDEO, people go back and forth between Stanford and IDEO pretty easily. But you probably can't walk into IDEO without being recognized.

Barry Katz: And you certainly can't walk into Xerox PARC.

David Kelley: You can't walk into Xerox PARC today.

Barry Katz: I know because I've tried. <laughs> I've sometimes imagined that the Valley in those years, when you guys were just starting David Kelley Design, was sort of like industrial Manchester in the 19th century, where you needed somebody who knew how to do this, and you just went knocked on a door until you found him.

David Kelley: You were just inundated in those days, just inundated. Somebody comes in the door. You don't know who they are. They turn out to be 3Com or Rolm or, I mean, they look just like regular guys coming in and saying, "Could we put a case around their computer boxes?" and they turn into Rolm. I mean, it was huge. Zilog or, you name it. Every one of these things was a project that just seemed kind of natural at the time. But we just couldn't keep up with the frantic pace of how fast things were moving. Silicon Graphics, I mean, Jim Clark comes in; I don't know who he is—*he* doesn't know who he is yet, you know?

Barry Katz: <laughs> Yeah.

David Kelley: And to be there in our position, being the center of design, I mean, we were designing stuff for everybody. I got to meet everybody in Silicon Valley in those days.

Barry Katz: So, these six or eight school friends above a dress shop on University Ave., then it's 16, and then it's 26…

David Kelley: Yeah. Naturally grown.

Barry Katz: When did David Kelley Design turn into IDEO? How and why?

David Kelley: Okay. So, David Kelley Design started about 1981.

Barry Katz: Isn't it nice to refer to yourself in the third person? <laughs>

David Kelley: Yeah. David Kelley Design. That was referring to the company, not me. It started in 1981, about. We were working with all these industrial design firms all these years and it just became clear that we needed to be the same company. Whereas clients liked the notion of us working together in the early '80s, by the '90s, they would prefer that we just handled the whole thing. They didn't want to hire two firms. Why should they do that? IDEO started because I decided that we needed to be more integrated as an offering to our clients, being client-centric. So I asked Bill Moggridge—of all the industrial designs we'd worked with, I by far liked working with Bill the most. He's a wonderful human and really talented and really good at kind of trying to predict the future of what was going to happen in design. He's a big visionary in my opinion. You know, interaction design, which I think he basically invented; human-centered design, he was pushing that. He wasn't right all the time, but most of the time, Bill had a sense of the future of design, and I really liked that about him. So, we came together in 1991. There is a caveat, there that there is a thing called Matrix. Bill and Mike Nuttall were the same company. Mike came over as the first employee with Bill, and then they got sideways because they were working for two companies that became competitive, GRiD and Convergent Systems. GRiD was Bill's client, and Convergent Systems was...

Barry Katz: GRiD created the first usable laptop computer.

David Kelley: Yeah, right. And Convergent was a big workstation that was very successful. And the CEO of Convergent, John Ellenby, said to Bill, "You can't keep working for both of us. We're competing together."

Barry Katz: Other way around: Ellenby was CEO of GRiD.

David Kelley: GRiD. Yes, I'm sorry—Ellenby was CEO of GRiD. And he said, "You can't work for us both," so Bill and Mike split ways to keep the clients. And it just seemed natural, when we formed IDEO, to put them back together. IDEO was formed in 1991 by bringing the three companies together.

Barry Katz: Did that happen pretty seamlessly? Or were there...

David Kelley: Yeah. It happened pretty seamlessly. I mean, I can remember going up to ID Two—they were in San Francisco—and I know that we're going to merge, and I'm, like, playing it on the sly, trying to be nice to the people there because I'm soon going to be CEO and they're going to work for me. So, I'm trying to, like, ask them whether they think it's a good idea or not, knowing it's already done. And I can remember they were pretty rough. You know, it was a pretty rough thing because as lovely as these people were, they're used to their habits. I mean, you don't really want to go to the unknown. You're kind of comfortable with the way the car's pointed straight, the road's straight. Let's keep doing what we're doing. So, to say we're going to throw this big curve ball in the situation... But after it happened, it went surprisingly well. And the work just came. Part of the thing is, if you want designers to be happy, just pile on the work. I mean, the more projects they're doing, the happier they are. They're unhappy when there's kind of not enough work around, and they're trying to figure out how to make the thing they're doing last for a while. That's not them. They want a, like, steady diet of new ideas.

Barry Katz: Well, you say that people are nervous about change and here comes this curve ball, but in a way, I kind of see the history of IDEO as just a history of curve balls. It's an incredibly risk-tolerant culture, which reinvents itself regularly.

David Kelley: Yeah, I know. I think designers by nature, and all the people who work at IDEO—I think we must recruit for that—are kind of variety junkies. They much prefer to be thrown a curve ball. They much prefer to do something they've never done before, meet a bunch of people they've never met before, use a different method than they've ever used before. That's much more exciting than having the comfort which other people like, of doing it in a way that they've done it before so that they can be comfortable with it. And that's one of the things people are always asking about is: Why do you publish your methods? Why are you giving away your trade secrets? And the answer is really that they're old to us. If we can publish them, we're on to something new. Tomorrow's going to be a better idea. We won't tell you the one we're using tomorrow, but we'll tell you the one we're using today because we're going to be tired of it by tomorrow. Getting people to actually work for the same client, two projects in a row—that's tough at IDEO, not giving them a new one.

Barry Katz: Around how big were you when David Kelley, Matrix and ID Two merged? Do you have any recollection what that is?

David Kelley: I don't remember. I think we were about a hundred. I think something like that. I think David Kelley Design was about half of the size of the whole thing. So, I think we were about fifty-something. My friends at Google and other places like that say, you know, "That's not growth. You grew from two to 600 in 30 years? That's not growing very fast. We do that in a week." But for us, for a design firm, that was. Remember you and I had this big argument one time about how big other design firms were?

Barry Katz: Painfully remember, yeah.

David Kelley: Now it's a question of what's a design firm.

Barry Katz: It's a matter of definition more than a matter of numbers.

David Kelley: Right. But in those days it wasn't. We were talking about industrial design firms, right? I think 90 percent of industrial design firms in those days were less than ten people. We were growing not because we wanted to grow. We were growing because the jobs were so interesting. How could we turn down this next project for Apple, or the next, you know, project for reading machines for blind people? I mean, all those things that were just so exciting to do? And so, we would grow to meet the demand, not because we wanted to grow.

Barry Katz: This might be a tough one to do off the top of your head, but if I were to ask you to cite the half dozen defining projects that either you personally or DKD or IDEO worked on, what would some of the all-stars be?

David Kelley: It's much harder to pick influential or important projects now because there are so many. I think there's 400 projects right now going on at IDEO, something like that.

Barry Katz: You mean simultaneously?

David Kelley: Simultaneously. I can't keep them in my head. So, I think if I was asked the question of, you know, name the ten or twelve most important ones, they would be biased towards the beginning when I could hold them. Certainly the very first project we got, because we were a bunch of kids charging 25 dollars an hour and didn't know what we could do—the first one was a company called Telesensory

Systems, Inc., which was a professor at Stanford—that's how we got the job—named Linville. He had a blind daughter and he was doing a reading machine for blind people. You put your hand in this thing, and you took a camera, and you hold it across the book, and it would raise with little needles whatever was under the camera—a picture or a word or whatever. And that was fabulous to work for. We learned more about human-centered design stuff. The woman who was in charge of user experience there, whose name was Helen Golden, she took us to each of our houses, blindfolded us, and said, "Make a peanut butter and jelly sandwich." And like, at the kind of two-hour mark, some people hadn't found the peanut butter in the refrigerator yet, which just gave us incredible empathy for what blind people go through.

Barry Katz: Linville's daughter went on to get a Ph.D. in psychology, reading with her fingertips.

David Kelley: Fantastic. So, it worked for her, but there weren't enough blind people in the world to make that a big commercial success. And then, of course, the mouse is probably the most influential project; we've already talked about that. After that, it all kind of blurs together. The first laptop for GRiD and all that kind of stuff. But the big change happened when we moved to design thinking from design. We called it design thinking because companies were actually bringing us to the table around their strategic intent. You know, normally it was, "Do this beautiful thing for us," or "Design this new toaster that has four slices instead of two slices." And not that many years ago—ten maybe— companies started saying, "We notice that you guys come up with different ideas, and we need some new ideas. Can we use your way of thinking to work on this problem that I really care about?" Like Kaiser Hospital, where we have helped them with their culture of innovation and given the nurses higher status and made the nurses the innovation engine. And you can see how different that is—me being proud of changing the culture at Kaiser Hospital and the nurses—from designing the mouse or a reading machine. There were a lot of steps in between that. Or Bank of America and "Keep the Change," or any of those things that we're proud of because they have impact. So, if I was to look at all the projects in the past, I'd go back and say, "Which ones of these have had impact in the world?" As we moved to design thinking, the impact is greater. I mean, the U.S. government has hired us to help figure out how to do payment in the social security system. Or the Center for Disease Control has hired us to look at teenage pregnancy or eating habits in teenagers. These are high-impact projects.

Barry Katz: They're high impact, but it's also a long road from sitting around in the engineering shop and putting together an innovative widget.

David Kelley: Right. And so, if I just skip from designing objects to redesigning the social security system, it was actually a gradual change. It wasn't like we leaped one moment to this. Looking back it looks linear, but it wasn't linear. Looking back it looks like there must have been some big cathartic leaps. Not the case. We're talking about 30-some years.

Barry Katz: There's one stage that you didn't speak to directly that is a piece of that continuum. Somewhere—I think it's probably in the early '90s—you began to build a rigorous human factors element into it, hiring people like Jane Fulton Suri.

David Kelley: Yeah. So, we realized—thanks to Bill Moggridge and people like him inside of the company—we started to realize that if we made raving fans of the people that we were designing for, even if they weren't the client, that was it. So we could design a chair and maybe Steelcase would like it or not, but if the people using it loved it, we could see that's where we were going get our reward—with students rather than just the teachers or the institution. We started to see that the end user was the place we were going to make hay. So, we started hiring people who were by training psychologists and anthropologists who knew that. But they didn't know how to do the design stuff. They were mostly in, like, airplane cockpits measuring the distance that the switch was away for the fighter pilot. That's who was funding their kind of research. Those were the applied ones. The more theoretical ones weren't [even] doing that.

Barry Katz: That's where ergonomics started, in the cockpits.

David Kelley: That's where ergonomics started, in the cockpits, yeah. And so, we started employing those people to try to understand how we were going to innovate through understanding other people. You know, software was one of the first places where it became clear. It was glaringly hard to use, so we did a lot of testing of software. All you would do is you'd watch them, and you'd see where people grimace, and you just tie that to where it was in the screen and then we'd work on changing the screen in that way. But the funny part of it was, we were getting all these big ideas from human factors, people, and our bias was towards doing that, but when we would write the proposal to the client, that'd be the first thing they'd want to cut. Our proposals in those days looked like Phase One, research; Phase Two: human factors; Phase Three, ideas; Phase Four, prototypes—you know, that kind of stuff. And more often than not, the client would come back and say, "Can't we just start with the work?" "Can't we just start with the making?" "Why are we doing this kind of research and stuff like that?" In order to get the job, a lot times we would say okay, because we wanted the job. But in our heart of hearts we knew we shouldn't be cutting that out, because we were going to get our big ideas there.

Barry Katz: So you just smuggle it back in under the radar?

David Kelley: You smuggle it back in, so we had to do it anyway. But we eventually got to the point where that was the most important part. And if you look at today, there's companies [where] that's what they mostly do—Jump and people like that. It is our bias to come in from that way. And so, it went from nothing to being something that clients didn't want to the kind of mainstay of the whole industry today.

Barry Katz: And I think in addressing the increasingly complex technical artifacts, the systems that people use, you had to develop increasingly sophisticated techniques for it. So, you said you watched somebody grimace.

David Kelley: Right.

Barry Katz: But sometimes you watch somebody grimace and then you ask, "Well, how was that?" And he says, "Oh, it was great. It was really easy."

David Kelley: Yeah. This was where we started poo-pooing focus groups. Because, in some ways, that was the most obvious thing that we did. Our research was not quantitative, it was qualitative. We worked for Procter & Gamble, and the guy would say to me, "Well, how many people are you going to talk to?" And I would say twelve. And he was thinking a hundred thousand. It was the difference between [research that was] statistically significant [and our method], and we were going to get insights, [it] was clearly, you know, a completely different point of view.

Barry Katz: Let's shift closer to where we are now. You suddenly find yourself—or not so suddenly, I guess—as the head of a rather large company.

David Kelley: Well, large in the design world, not large in the world world.

Barry Katz: Yeah. But I think this is not exactly what you imagined for yourself.

David Kelley: No. When I started the company I was thinking, maybe ten of my best friends and I would be going around doing really interesting projects. And if we could get projects like the Apple mouse, what was the next one? We'd just get one. We needed one good project and that's as far as I thought it out. We'd go from one big-time interesting project to another, and because we were good (in our minds), we would get a good project—not that we'd get 400 projects. And then we'd get another good one. Right? I just had the idea that I'd work with my friends. Rather than be put in corporate America where they decided who I'd work with, I'd work with my friends. We had a kind of an arrogance, confidence, that said we could do really interesting projects. So we would get them. That would be our dream. I remember thinking, if anything we designed would ever be on the cover of, like, ID Magazine or something, I'd died and gone to heaven. I eventually got to the point where I was irritated if there wasn't something about us in every issue.

Barry Katz: Well, you're still here, and ID's gone, so that says something. <laughs> At some point, and I'm guessing that it was maybe about ten years ago, you decided to let go of the reins of the company and move back across the street full time to Stanford.

David Kelley: No—this is not public, right? I mean, [inaudible] camera. I tell both of them I'm full time in both places, just so you know. So, you can't say I moved across the street, because I'm a hundred percent at IDEO and I'm a hundred percent at Stanford, just so you know. That's the story and I'm sticking to it. I do go to both places every day, about. What happened was, there was something [some new technology]—I wish I knew what it was; it wasn't, you know, blogs or Twitter or something—but I realized at some point that I didn't know what that was. It was something that was important in the world, and because of my age, 50 at the time, [I suddenly felt] it was a young person's game. If you look at the people doing design, it's the young person.

Barry Katz: Oh, I see.

David Kelley: I mean, IDEO's probably centered on 28- or 32-year-olds, something like that. And being 50, I just decided I was too old and cold to be their leader. I could be their grandfather; I could be the chairman. And so, I decided I needed to have a younger person take control. I looked around, and I interviewed people on the outside of the company, and they all said, “Whoa, IDEO, you're like a hundred million dollar company, and you have a billion dollar brand. A guy like me could move them up to that. You could be a billion dollar company, not a hundred million dollar company.” And I thought, boy, that sounds good (I was calculating my cut of that). Anyway, then I looked internally, and I really realized, it's a *design* firm. I want a *design* person to be in charge. I want it to be a *design* company. Even if it's not so much money, even if it's not so much fame, I wanted to continue to have the best damn *design* company, not a company that was doing what it should do to go public or whatever. So, there's a guy, Tim Brown, who was running our London office. He'd run San Francisco from very early on. I remember when I went up and told him he was head of the San Francisco office—he was 26, I think, and there were a lot of 40-year-olds around—and he turned green. He wasn't sure he wanted to run San Francisco. But then we moved him to London later in his career, and then had him come back and be the CEO. And it was the right decision. He's done a fabulous job, especially on the content side of IDEO. He's done a fabulous job and wrote a marginal book with Barry Katz.

Barry Katz: We'll get to that later. <laughs> I think you've given us a wonderful insight into what IDEO has been about. What's the core of your work now at Stanford?

David Kelley: Remember that I started David Kelley Design, Hovey-Kelley Design, out of Stanford, so all I knew was Stanford. All the methodology that was used in the early days was from Stanford. So, I kind of owed Stanford for the start of the company. But also it goes back the other way, that over all these years, there have been many, many people who are in both fields in both places, you being one of them,

and they kind of share best practices. And because IDEO is at the cutting edge of design, because clients are paying us for magic to happen all the time, we have to keep inventing new methodology, and that's the driver. That's not so much of a driver at the university. Also, we're trying to help organizations mostly be innovative at IDEO. At Stanford, we're concerned more about the individual, and trying to make individuals confident in their creative ability. So, my goal there has always been the same thing. Whether it's my graduate students directly or other students that take classes, whatever, it's that somewhere along the line, a lot of people opted out of thinking of themselves as a creative person. Grade school, somewhere, they just opted out. And I don't believe that's true. I think everybody's creative, and if we can just unlock that… It's just like learning to play the piano or anything: If you commit to it and learn methodology and do it a few times, you'll get better and better. You'll be more creative as a person. I don't care if that's to cure cancer or to throw a better dinner party, doesn't matter to me. It's my change-the-world strategy: getting people to make better decisions through having this confidence that they can come up with new ideas. They can come up with breakthrough ideas. They don't have to wait around for somebody else to do it. That'll make the world a better place. So, that's what Stanford's about. Stanford's about, for me, helping people with their creative confidence and showing them how to go about that. We started this thing called the design school—actually the Hasso Plattner Institute of Design, called the "d-School," which was just to make fun of the b-School [Stanford's business school], and it stuck. It's called the d-School. And that's basically students from all over the university, all departments and faculties from all different departments...

Barry Katz: Graduate students.

David Kelley: Graduate students come and they basically have the experience. If we're lucky, they flip from thinking themselves as purely analytical to thinking of themselves as a creative person. And the way they do that is, we take them to a project, and we help them with the methodology. We give them the right fertilizer and the right water and the right sunshine. And then they have the life experience of surprising themselves just how creative the solutions are to the problem that they're working on. And they did it. There's hours of videotapes of students crying, saying, "I used to think of myself as only analytical, and now I'm…" "I always wanted to be a creative person." "My mother was a dancer; my father was an architect, and now I'm one." <dramatically sobs>

Barry Katz: They flipped.

David Kelley: They've flipped. So, that's the game there. And, you know, I'm very encouraged, surprised and humbled by the fact at how quickly it's taken off and how many other schools are emulating it so quickly.

Barry Katz: It's gotten enormous global visibility.

David Kelley: Yeah.

Barry Katz: Even I receive inquiries all the time: How do I apply to the d-School? What do I do with a d-School degree? Things like that. What do you say to such people who are imagining it's going to go to the next level of institutionalization?

David Kelley: <laughs> Yeah, I know. I'm really impatient with this. I really want to help that school in Paris that wants to put design thinking into their curriculum, or that grade school in Harlem that needs it there, so it's a little difficult to be patient and see it happen. We're trying the best we can. And I get calls all the time from people in other institutions, other universities that say, "Thank you, because it's happening at Stanford my dean will pay attention to it," because Stanford is this big PR kind of point of view, which is good.

Barry Katz: Talk about a billion-dollar brand.

David Kelley: Exactly, big-time brand, which allows us to attract students and faculty. We don't have to do much. We have the right brand. So, you could take the point of view, which is we're just going to make a shining exemplar and have other people copy it. That's one thing which we're hopefully trying to do. But there's other things. We will have outreach. I want to build an organization that when you call from Budapest and you say you want your university wants a d-School, what do you have that you can help? I will have a team that goes there and does that. That's next. We don't have it now, but we're talking about it, and I think we'll have that. There's measuring success. There's writing publications. There's, you know, all the things. So, we're trying to do to get it out there. But I'm impatient about it. It's not happening fast enough to meet the demand. You never know how long the excitement about this stuff will last. I think it's so tied to innovation. I don't think innovation, which is the latest business fad, is going to last forever, but as long as design thinking and the d-School is tied to making people more innovative, I think it's got a long cycle. But I also question how long it is. So we want to make as much impact as we can. We're like four years into it, right? And the first two were in a trailer. So, I've got to remind myself all the time that we'll get there.

Barry Katz: I think the innovation fad will pass on the day that Moore's Law is repealed. <laughs>

David Kelley: <laughs>

Barry Katz: I mean, it's a fact of life. Let me wrap up with this: You've described a pretty extraordinary trajectory. You start out by building a device that will translate electrical signals into raised dots so that blind people can read; the mouse; things for Apple... And you're way out at a very abstract level now of designing thinking.

David Kelley: Yes. Exactly.

Barry Katz: I sometimes think about it as the evolution from thinking about design to design thinking.

David Kelley: Right.

Barry Katz: I would like to know two things in conclusion. One is how you assess the current state of design from the perspective of a design thinker. And the second question, just to anticipate and maybe help you shape your answer, is: What do you see as the most pressing current and near future challenges that designers or design thinkers will have to deal with?

David Kelley: What's really not clear to me right now is the definition of design thinking versus designers. When I was working at Boeing designing aircraft, if I went into a dinner party and somebody said, "What do you do?" and I said "Designer," she might say, "Well, what do you think of my drapes?" Well, I'm not that kind of designer. So, we've gone from a fashion designer—you don't think of a fashion designer designing financial services. I mean, we're in that point now. We made up the term design thinking to kind of give our kind of designers—the kind of kids that were graduating from Stanford—a depth. They didn't have a depth, where other designers do have depths. I mean, they're good at aesthetics or they're good at designing fashion or another thing. So I'm still thinking in the terms of a designer who has a depth, has a focus; that's a designer. A design *thinker* is one who doesn't [have a single focus], whose expertise is in the process of how you design. They're related because they think in the same way, but one, the designer, has a focus, and the design thinker focuses on the methodology, not any one particular thing.

Barry Katz: In a lot of ways that seems to follow from just this fact, as you've described it, of having new and emerging and innovative technologies continually thrown at you and being told, “Respond to this.” You can't say, "Well, what did last year's mouse look like?" if there was no last year's mouse.

David Kelley: Right. And so, it's a kind of Silicon Valley phenomenon as well.

Barry Katz: I guess that's what I was trying to get at.

David Kelley: Yeah. If I was in New York, I think I'd be more of a designer. But I'm in Silicon Valley, so I'm more of a design thinker. I think that it just comes naturally with the turf.

Barry Katz: So, what is or what should be on the agenda of serious design thinkers now? What are the issues that most urgently matter?

David Kelley: Well, the snappy answer to that, what should be on their mind, is impact. I mean measuring it, being sure, the realization part. As we get to be design thinkers, you can get in the trap of, thinking it's the end or, because I'm advancing the state of knowledge in an area, that's enough. There are people who should be doing that, those Nobel prize-winning professor types. That's not us. We're more applied than that. And so, how we continue to measure and drive for impact through the realization of the designs that we come up with—that seems to be the thing. We're guilty of this kind of continuous divergent thinking and a good criticism of a lot of design thinkers is that we come up with a bunch of really interesting, appropriate ideas. And then the next time you come back, we want to come up with more, you know, keep coming up with more ideas, rather than taking the best ideas we have and driving towards impact. We can't lose that, because I think that's what separates design and design thinkers' contribution to the world, as opposed to others, is that we care about choosing an idea and driving it into the hands of people. If we really have empathy for the people that we're designing for, we've got to actually deliver. They've got to actually be walking down the row in the grocery store and reach up and grab that thing, rather than, "We had a really good idea but, you know, we just went on to something else and we didn't really develop that."

Barry Katz: Well, it's way beyond just spotting something that made it onto the shelves. I think that you've also characterized what's really a sea change from product design to, call it what you want, social innovation—addressing the needs of larger and larger portions of our population.

David Kelley: Well, if you can have impact through coming up with new breakthrough ideas, that's kind of your destiny, how can you not do that? How can you say, "Oh, I don't know, I think I'm going to take a rest here," when there's things to be done? I mean, there's cancer to cure, and there's the next car that doesn't emit anything bad and still gets you where you want to go. Those are all there to do. And one of the things I like the most about designers and design thinkers is that they're, by definition, positive. If you're in the business of coming up with new things for the future, you must believe there is a future. You must believe that that future is within our control to change. I mean, it's like inherent in our business that we're futurists, you know, we believe strongly in the future.

Barry Katz: So, you've got two one hundred percent time jobs. What do you do in your time off?

David Kelley: <laughs>

Barry Katz: Do you ever stop being a designer?

David Kelley: Well, you know, I have a young 14-year-old who's a budding young designer, and so her projects are pretty interesting, too. As a dad, you have to learn how to hang back and let her do the project, because sometimes I want to jump in there and do that project. But yeah, it's all about projects for me. Everything looks like a project to me. Some of them are more fun to do. Fixing the garage door is a project, too, but you know, I don't always get to that one.

Barry Katz: <laughs> Well, I wish you many decades of projects in your future that are as exciting as the ones in your past.

David Kelley: Thanks, Barry. This is fun.

Barry Katz: Thank you very much, David Kelley.

END OF INTERVIEW

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ADDENDUM

STATEMENT FROM DAVID KELLEY TO SCOTT UNDERWOOD, JAN 10, 2013, DURING FINAL REVIEW OF THIS DOCUMENT:

Scott Underwood: You wanted to add something about the founding of Onset Venture Partners?

David Kelley: In 1984, I realized that a lot of our work for startup companies was in preparing to try to get venture capital. We would do a prototype of a manufacturing plan or something. I had the idea to become a farm team for the venture firms. We would show them the venture firms they would ordinarily not see. Venture firms were scary, but we were not. That was the genesis of the incubator we called Onset.

Mike Leventhal was a part of the beginning, and he had come from the venture firm New Enterprise Associates, which is still going. We got our first funding from New Enterprise, Mayfield, and KPMG. Onset went on to raise hundreds of millions of dollars and launch several successful companies.

