

**INTERVIEW  
WITH  
ERIC von HIPPEL  
APRIL 2, 2014  
Sloan Oral History Interview**

E: Eric von Hippel

B: Bob McKersie

G: George Roth

G: We are interviewing Eric von Hippel on his experiences in coming to MIT. Although “coming to MIT” might not be the right term, as your father was also a professor at MIT.

B: I have an even earlier question, because I know something about Eric through a distant cousin of his who was my next-door neighbor in Chicago, Sandy Lewis, who told me that this guy, as a young lad, did crazy things in his house, all kinds of MIT-type projects at an early age. Do you want to say a little bit about that?

E: Yes, I invented a lot of things as a child – one would call the kind of person I was a Maker nowadays. I was interested in both electronics, and in mechanical things. In fact, a company called Syntectics hired me when I was a high schooler to invent for commercial clients.

B: What would be an example of an invention in your early days, even before getting to Harvard, when you were just poking around? Just give us an idea.

E: When I was in high school, one of the things people were working on was the idea of cassette tape recorders. I invented a one-reel cassette. It consisted of a reel of magnetic tape with a flexible hub in the center, and one of the flanges from a standard reel removed. You could stick the equivalent of a phonograph arm at any point on the tape reel from the open side

and run it, so you didn't have to rewind. Also, it was smaller than a standard cassette, because it did not need space for a take-up spool.

G: And you could access it, as opposed to sequentially, you could enter the tape as any point - anywhere...

E: Anywhere. It was cool.

B: It's great to have that kind of powerful example.

E: Here is another example from still earlier - I was about age 11 at the time. When I grew up we had a summer cabin in New Hampshire. The task my parents assigned the children was to cut up the wood for the fireplace in the summer for the winter. I built an automatic chainsaw that would cut logs to fireplace lengths by itself - a labor-saving device that would save child labor - very important from my perspective.

B: One of the first questions about your education, with all this connection with MIT, why did you decide to go to Harvard?

E: I got a National Merit Scholarship, so in principle I would have my tuition paid anywhere. I wanted more humanities than MIT offered, so I thought I would go to Harvard. My father thought that was a terrible idea, because I might become a dissolute character that he imagined Harvard undergraduates to be. So he said, "Son, you can go anywhere you want as long as it's MIT." [laughing]. Then my mother intervened and the result was I went to Harvard.

B: Shades of Henry Ford, and "any color as long as it's black."  
And did Harvard do what you hoped it would do for you?

E: Not really. I actually didn't like my Harvard experience. Harvard was just too big, and the lectures were too big for me to feel comfortable. You couldn't follow your own path as I was used to doing. I'd come from a very small progressive high school, Cambridge School of

Weston. In that school, I had great control over what I wanted to study. That didn't work at Harvard – maybe because I simply did not understand the system there well enough. It seemed that there was always some rule that I was running afoul of.

G: But you did stay and graduate there?

E: Yes.

G: What was your degree?

E: Economics.

G: Did it give you a different view of MIT than the one you'd had as the son of a faculty member?

E: I found Harvard to be quite hierarchical. I find MIT to be much more egalitarian in spirit, and much more to my personal taste.

B: On finishing at Harvard, did you then swing right over the MIT?

E: No, no. I went to grad school at Berkeley in psychology as my first step after Harvard College. I quickly found that was not to my liking, and then returned to my inventor roots by coming to MIT to get a Masters Degree in mechanical engineering.

B: What year would that be?

E: I think 1966, something like that. Immediately after I received my Masters, I became an entrepreneur. I hadn't planned to. One day some people came into my Lab over in Building 2 and said "Son, do you want to join us in founding a company?" It turned out that they had asked departmental faculty who was a good inventor, and they had selected me. The next day I was on this private plane going to god knows where, and I had joined a startup – a

more novel experience in those days than it is now. I ran the R&D as a 26-year-old, and it grew from nothing to 400 people in about 1.5 years. It was a wonderful experience for me.

B: The nature of the business?

E: It was making fax machines.

B: What was your thesis in mechanical engineering?

E: It was a reader for the blind, a device that used punched paper tape of the type compositors used to set type as input and read it out as Braille output. In the Engineering Department, you are learning design, and work on whatever projects they have around. In my case, that's what they had funding for.

G: How long were you inventing on the fax machine?

E: I had a deal with the Firm (Graphic Sciences) that my stock would vest after 2.5 years. So I worked there for 2.5 years and then left. Again, I had no plan, but after I left McKinsey, the management consulting firm, offered me a job, and I thought I would find out what innovation management was from the practical side from them. After a couple of years there, it was clear that consulting was not for me, so went back to grad school for a PhD.

B: You didn't choose to get your PhD from MIT. What was your reasoning?

E: By that time my goal was to become a professor of Innovation here at MIT. I went and talked to Ed Roberts, and to others at Sloan, and they said "We don't hire our own." So I decided to get my degree at Carnegie-Mellon so that I could come to MIT directly after graduation.

B: And what was your dissertation at Carnegie?

E: One of the things I'd done at McKinsey was collect data on internal entrepreneurship activities by major firms. When I got to Carnegie, I already had a good data set and did a thesis using that. I actually completed my degree in nine months. I was able to work really quickly. I still remember the dean shaking my hand and saying, "Oh, it's so good that you arrived." And I said, "Actually, I'm leaving!"

Ed was quite astonished when I showed up so quickly after our discussions. I had him on my committee as an outsider, so he could keep an eye on what was going on. Again, my goal was to be at MIT Sloan, and if some MIT Faculty knew what I was doing, I felt that would be helpful.

G: When did you arrive here as a new faculty member?

E: 1973.

B: Who do you remember who stands out in terms of colleagues when you arrived here in 1973?

E: I remember Mason Hair. Did you know him? Mason was such a nice man.

B: No. By reputation, obviously. But he was not here in 1980.

E: Our Innovation group in 1973 consisted of Don Marquis as head, Tom Allen, myself, Ed Roberts, and a little later, Jim Utterback. We were really the first program in the country on innovation. Ed Roberts probably told you that. Nobody knew what innovation was. The journals didn't know how to evaluate our work. It was all a big adventure.

G: So you were inventing a field?

E: We were. And most of us in the group were people who knew from practice how innovation is done. That was an enormous advantage in designing fruitful research questions.

B: There were some big grants – Marquis had some, what was it, Navy funds? Or NASA?

E: Funds from the Polaris missile program, something like that.

B: Did you put yourself into those big projects or not?

E: No. But that was funny. As I remember, it was something like – Don was asked how much money he needed from the Defense Department, and he came up with a number, and they said “Too small, we’re going to lose it in the rounding. Come up with something at least we can notice.” He came up with something they could notice.

In my case, I went for NSF grants. I was very used to the grant application process from my MIT Engineering School experience and my Carnegie Mellon experience, and used the money to hire Masters’ students as well as PhD students.

G: At that time, the Masters program still required a thesis. That’s the other piece that aligns with how Engineering works, because all the Masters students were doing their theses on the funded project, and that’s something that’s quite different nowadays in the business school.

E: Exactly. There were all these studies I did about where innovations come from and they involve a lot of fieldwork. So in the summer I would hire half a dozen or ten Masters students, and we would go off and collect data.

B: That concept of the structured thesis seminar, where you had a group of people?

E: Yes.

G: What about teaching when you came here?

E: I didn't know how to teach, at all. My teaching for the first year or so was terrible. I still remember, two students saying, "Yours is the worst course I've ever taken at Sloan." I was really sorry and embarrassed that they felt that way, and worked hard at becoming better. It took me a while to learn to be a good teacher.

G: What course were you teaching?

E: It was the basic innovation course. I was also teaching the basic entrepreneurship course.

B: They were elective courses, weren't they?

E: I think they must have been, yes. But we had, whatever it was, only 30-40 people per class. The School wasn't very large then.

G: What department was your innovation group a part of?

E: Innovation was an interdisciplinary subject matter and group – we were probably linked to some departments, but I am not sure which ones.

B: Shall we shift to research?

Tell us about what you really feel good about in terms of your research?

E: Well, I feel that I have help found a very interesting new field that it has really taken off in recent years - one might call the subject matter user innovation, and the theoretical structure that we are working on the user innovation paradigm.

The history of my focus on that phenomenon, and my own early appreciation of its importance, was my familiarity with the innovation process in scientific instruments. Because I had been hanging around MIT labs during my childhood, I knew that scientists and engineers invented and built their own equipment. It wasn't the manufacturing firms inventing it for them. My first study on the topic of user innovation empirically documented this. The importance of

this was that the findings flew in the face of the assumption by innovation researchers and policymakers that producers, and not users, were the fount of innovations. That was the first evidence to the contrary.

Nobody else was studying user innovation at that point because everybody assumed it did not exist or was not important. It's only fairly recently, after my colleagues and I started to do representative surveys of user innovations in entire nations, that the importance of the phenomenon is really being appreciated. User innovation may well be as important as producer innovation, as it turns out, and user innovation operates via very different principles.

You cannot change a reigning producer-centered innovation paradigm until you have something else in place to replace it. What I've been systematically doing with colleagues is building up an alternate user innovation paradigm. Lots of data, lots of theory, and explaining why this kind of phenomenon of user innovation – whether by firms or individuals – is actually prominent, important, and growing.

In pursuit of doing that, my colleagues and I have also set up a new academic society, the OUI – the Open User Innovation Society. Today it has hundreds of people in it, who meet annually. The advantage of this is we all coordinate our terminology, and share our growing understanding of the new user innovation paradigm we are jointly building.

Today, many academics come to MIT to work with me on user innovation-related research topics, it's a very exciting time for me and for the field.

B:           What countries do they come from?

E:           A lot from Europe: Germany, Austria, Portugal, through that Portugal program. It's more people from Europe than from the US today. I have friends over there, it's the second generation of these people. The people who came over here first are now sending their people over, etc. It's a cycle.

E:           My colleagues and I are well along the track of making the user innovation paradigm mainstream. I think it's like pushing a piano up a mountain. It is difficult to get it to the



top of the mountain, but eventually you get it there. Then things tend to move more quickly. It's hard to stop a piano as it picks up speed going down the other side.

G: I've read about this, how there's a lot of elements of what happens in our economy which aren't captured by GDP but GDP is the overarching measure that we use. A lot of this is exactly as you say: it's innovation that occurs. The same thing is true for developing countries as well. We just want to measure it all by the same stick.

E: Unfortunately, economists and policymakers only think about what IS measured.

G: Congress seems to be a particular difficult group to influence.

E: Right! Well, they are playing chess, and they don't want somebody else coming in and saying "Oh, I have a new chess piece that flies." They just want to play standard chess as they learned the game. So we've been having a struggle getting both scholars and governments to become open to the new user innovation paradigm. I am finding that governmental statistical offices may be a key to making a better understanding of user innovation mainstream.

G: But governments are staffed by economists that come out of universities.

E: Yes, but the statistical offices are now being persuaded to try something new. And then I think when the statistics are there, then I think social scientists and policymakers will be interested in playing with it.

G: It will feed into their models.

E: Exactly.

B: And you can measure the value-added from user innovation.

E: Exactly. It is difficult to calculate value contributed by user innovation, because it is often given away – has no price. It's not easy. But what my colleagues and I are trying to do is get to the point where others find the user innovation paradigm interesting as opposed to disruptive: Where they begin to see low-hanging fruit for themselves.

B: Are academics with a user innovation focus who are getting their Ph.Ds now finding positions, maybe more so in Europe than in this country?

E: We always were able to place them. There were very few PhD students with a user innovation specialization 20 years ago but I was always able to successfully place them. Now opportunities are opening up more generally.

In the beginning, you have to imagine how small this was. I would get a couple people a year, and then somehow they would find, and I would help them find, a spot. Now it's growing. Increasingly, I don't need to push, which is fabulous.

B: The opportunities are there.

E: Yes. People seem to think it's interesting now. I predict that's going to continue. I think we're on the up-slope of the S-curve, finally. With the low end of the S-curve being 30 years!

B: Here, do we have junior colleagues for you?

E: We have people, yes, who are interested now. It's not exactly what they do, but we can have interesting conversations together because user innovation is in the air now. This never would have happened if the Internet hadn't happened, so people would find these phenomena more visible. I cannot claim credit at all, or only a little, for pushing it. What really happened was, we were building the intellectual framework, and along came things like the Internet and the hackers movement and all the rest of that. People began to say, "You know what? I actually believe that."

About five years ago my students and colleagues changed from “Are you sure? That sounds so odd,” to “Yeah, yeah, I know about that. What do we do about it?” Again, it’s how things shift. It was almost a click, and then the next click will be “What are you making such a fuss about? We always knew this! What are you doing??” Because when a paradigm shifts, they don’t remember the old one any more. It’s like, “Yeah, whatever....,”

B: Are the folks on the other end of campus, whom you know, the engineers and scientists, are they connected to these ideas?

E: There are groups that are – for example, people at the Media Lab

E: And there are lots of user hacks by students and faculty at MIT like wearable computing.

G: Yes, Sandy Pentland

E: Also before Sandy. There were students who were actually wearing cameras – in those early days quite cumbersome things, walking around campus, to see what wearable computing would be like, and whether the experience was valuable. This was mainly a form of user hack, not so long ago.

G: So even the idea came from some user, same as the PC. Somebody put together a bunch of stuff and said that this works somehow.

E: Yes, yes. And then the users said, let’s see what it is good for by using it. Isn’t it all very exciting and freeing? User innovation empowers us all.

B: It is!

E: And I’m just stunned that it’s so enormous in scale and scope as it turns out to be. I had no idea, when I started work on user innovation that it was so enormous. Six percent of the

population of the UK, 2.9 million people develop products for themselves. There are only 22,000 R&D people building consumer products in the UK. It's a ratio of 100 to 1. It's just stunning.

If you ask me what I'm proud of? I'm proud of this whole user innovation paradigm and related phenomena. I'm just so excited that it's happening.

B: To back up a little bit. When did you get tenure?

E: It was 7 years after I arrived. I came in 1973, so it must have been about 1979 or 1980.

B: It was right on schedule, then. Or maybe even early....

E: No, I don't think it was early, no. I think 1979 was when I got it, and you came the next year.

B: 1980, right.

B: So when did the Open and User Innovation Society start?

E: We're had our 12th annual meeting in 2015.

B: And you alternate between Europe and here for your meetings?

E: Yes, different places. This year it's at Harvard. Next year it will probably be in Portugal. It moves around.

G: Would you be considered a father of the user innovation field?

E: People sometimes kindly call me that. But there are other early participants who also deserve the label – maybe I'm the grandfather.

G: That was going to be my question: who would be the other fathers that you would share that designation with?

E: People like Dietmar Harhoff (Max Planck), and Nik Franke (Vienna University of Business and Economics), and Karim Lakhani (HBS). Dietmar and Karim were both Doctoral students of mine, and entered the user innovation field early.

B: We've covered a lot of ground in this amazing career you've had. And it's blossoming, getting better and more influential.

E: Yes, it is. It's scaling, it really is. It's amazing. I'm feeling very lucky. Had it taken 10 more years to get going, I would have not been not able to do it....

B: Are there things we should have asked? Or gaps in the story?

E: I think that an important thing to say in praise of Sloan is that the School was supportive of my research agenda, even before its importance became clear. I've always felt supported at MIT. This, along with my Father's history at MIT, gives me an enormously warm feeling for this place. Who else would put up with a colleague who was focusing on something that nobody else cares about for 15 years? That's quite impressive.

B: Well, the place is terrific for support.

I was going to ask you – the entrepreneurship, which you probably teach, has blossomed as well as your area of user innovation. You've been in a community where a lot of activity, and in a sense the center of gravity of the School has moved a little bit in your direction.

E: Yes, yes. Ed Roberts was the one pushing entrepreneurship at MIT. The importance of that was not obvious, either, at the start, and he did a very good job – I am sure he will tell you about that in his interview.

G: Just one more question: From your perspective of mono-mania, which you self-described yourself as, your views on how the School has evolved in that time. The school has taken a very different shift than what it was in 1970s. We've heard people talk about it, and it's become much more "mainstream" as a business school. It was quite different and somewhat unique.

E: If we can keep a few people interested in phenomena in our little area of innovation, the TIES Group, then we'll have approximately the scale that we always had back then. All sorts of things have flowered, like financial engineering. But if I look at our little corner of the world, if we're careful we can maintain the integrity and the power of that. It's sort of this hidden jewel that's not hurt by the growth of other, unrelated things around it.

G: Well, that is it.

E: Thank you.

B: Delighted to do it.

END OF INTERVIEW