PC Software Workshop: VisiCalc

Moderator:
Ed Bride

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PC Software: The First Decade – VisiCalc Workshop

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Abstract: The three principals in the development and publishing of VisiCalc, the first electronic spreadsheet, came together for the first time in 20 years for this workshop. Dan Bricklin and Bob Frankston of Software Arts start by discussing what influenced them in designing what was to become VisiCalc. Dan Fylstra of Personal Software discusses how he came to believe in the software publishing model. The three of them discuss why the Apple II was selected as the target computer and then talk about the difficulties in dealing with the retail channel of distribution. Finally they talk about the attempts to merge the two companies and what ultimately led to mutual lawsuits.

Participants:

Name	Affiliation
Dan Fylstra	Frontline Systems Inc., formerly VisiCorp
Dan Bricklin	Software Garden; formerly Software Arts
Bob Frankston	Formerly Software Arts
Jack Loftus	Tech Target
Evan Koblentz	Computer Collector E-Mail Newsletter
Eric Bender	
Tim Bergin	American University, historian
Bill Aspray	Indiana University, historian
Ken Wasch	SIIA
Barbara Brizdle	
Tracy Licklider	Consultant; formerly Software Arts

Ed Bride: I think my job is the easiest here, just to hand it over to the participants. I thought it would be good to start by having Dan Fylstra, Dan Bricklin, and Bob Frankston give brief reflections on what they were thinking of before they got this thing started. And then the historians, Tim Bergin and Bill Aspray, will draw you out with other questions, and then we encourage you to question each other. I don't know how often you get a chance to think back to those days, since you're all involved with different things today. For the first few minutes, please recite your name if you're asking questions for the ease of the transcription when someone's

typing up the remarks.

So, Dan, if you don't mind, let's start with you and talk about what you were really thinking of back in the late 1970s which led ultimately to VisiCalc. Were you trying to do the obvious and create a software product? I mean, were you going to change the world? Was it a narrow perspective: a calculating product, or something that you saw being used in financial planning and modeling? What was it? What was on your mind when you got started?

Influences on the VisiCalc Design

Dan Bricklin: As I think Henry Petroski likes to point out, basically a lot of innovation consists of scratching an itch. You know, it's not "necessity is the mother of invention;" it's problems with the past or with the current versions of something that starts the process of creation. The idea was to do the spreadsheet product with the ability to change a number and see the response in a basically "what you see is what you get" or WYSIWYG environment—Dan [Fylstra] introduced me to the term. That idea came when I was a student at Harvard Business School, a story that I have told many times. My background was in interactive small and large computers—having worked in word processing and video editing systems prior to that—on some much smaller machines and much bigger machines than the machines we ended up using for the spreadsheet.

The impetus for the interactive product came from seeing the failure of traditional programming methods for being able to answer real-time questions in a business environment. Specifically, I remember we had a project at Harvard Business School where we broke up into groups to solve a problem. For my group, I ran downstairs to the computer lab and quickly wrote a little Basic program to run the numbers that we needed, and it took forever to do it. Yet, my friend, Alan Backus—who went on to invent the Ronco rotisserie, among other things—had this little programmable HP calculator (which I could not afford), and he had an answer right away. That dumb little machine was actually better because of the way it was. So, that's where I started coming up with ideas for something better, using the ideas of word processing.

I visited David Reed at MIT and saw an Alto there. So I was definitely aware of the mouse and stuff like that. What I envisioned was that I would sit there at Harvard Business School and, literally, I imagined that there was a ball here, where this thing was on the back of this TI Business Analyst calculator. This calculator, by the way, matters to the story because this is where the 35.7 % royalty rate came from. Well, we'll get into that later. It actually had enough keys, I think, for A,B,C,D,E,F,G,H,I,J,K. I imagined a heads-up display for that—I really did—and that you would then push the sum button, and you could type in labels on this thing so you could look at somebody in the face, and say "10 percent," because 10 percent was always the answer when we were at Harvard Business School. We were in the days when they switched everything from slide rules to calculators. I was familiar with interactive WYSIWYG because of my work with word processing.

In terms of the design—I can get into how I actually designed it. That's something else.

Bride: I want to get introductory remarks done first.

Bricklin: Some other prior computers had a great influence on that. Anyway, Bob [Frankston] and I had wanted to do a business together; that's one of the reasons I went to Harvard Business School. Ever since I met Bob in late 1969 or early 1970, we had wanted to do a business together, and I always planned to go back to business school at some point to learn the magic in business. Bob and I had tried a few times to do a business together and never had, but this, VisiCalc, was a chance to do that. Although I was still interviewing when I graduated Harvard, I had already pretty much decided, between my first and second year, that I would do VisiCalc. That summer, by the way, I saw Andy van Dam. I worked with Andy van Dam in the summer of 1978 when I worked at Prime [Computer]. I had a carve-out in my agreement in my nondisclosure with them about ideas that protected VisiCalc because I had come up with the idea for it in the spring of 1978.

Bride: Introductory remarks, Bob?

Bob Frankston: If anything, the big break with the VisiCalc was the grid that actually reduced the amount of interactivity. The original design was much more flexible and powerful. The key was the grid, which gave you a framework for reference and simplified everything. It's almost the opposite of what people think—people think that *more* features make a design easier. It's actually a reduction in features that make it feasible. Later, as people became used to it, you could add features, but the basic idea was reducing the grid.

Bricklin: The free-form grid.

Frankston: Yes. The grid basically meant you had a naming system. The main point is that we were thinking of much more powerful computing models, much more interactive heads-up display—shared, and all of that. It was reducing it not so much for implementability. We were lucky: Everything came together. Doing your thing with calculations turns out to be much easier than in word processing where there is no orthogonality. There's a nice reduction. Also, one lesson, by the way, is sell to people who have money to pay for and fund the industry—that's a very good idea the next time we do this.

But, there was a lot of background. We used the graphic screens—even back in the 1960s with the beginning of the Alto when I worked at White-Weld, we had an SDS-940. Just look at the world we're in—online financial information. Butler Lampson was one of the key designers of the first financial language. He's the same person who did the Alto.

Bride: And you worked on that?

Frankston: Back in 1966. When I visited Xerox PARC in the early 1970s, I had seen some graphic stuff. We used a graphic screen on Multics, so this culturally just made sense. Now I had worked on machines of all sizes, and built hardware. The big surprise people have with VisiCalc is that I could write a small program—because it's a stupid thing to do unless you have to; it's a lot harder.

Bricklin: But you had worked on the ECD machine, which Apple was terrified of when that was introduced.

Frankston: Yes. ECD was a local company that built the 6502- based machine. You could have 64 megabytes of memory. It had a synchronous tape drive.

Bricklin: But, they priced it at $978.56.

Frankston: Yes. The only lesson they didn't quite get is manufacturing price versus sales price: Sales price is supposed to be higher than the manufacturing price.

Bricklin: But it did matter. This machine mattered because we used their development tools initially.

Frankston: On the side we also built our own tools—our own compilers, assemblers, and everything. But, you know, the Multics screens came in, and we used cheap third-shift Multics time, which was a dollar an hour. And, apparently Honeywell also had figured this out, so they were developing ADA, the military language. It was on the same machine they were buying from France. So, the two projects were being done on the same machine at the same time—ADA and VisiCalc.

Bricklin: This was at night, because at night France was awake and Bob was awake. It's interesting that Microsoft used a time-sharing system to develop their first Basic. And then, to develop most of their first DOS version, they used similar large computers to do their development in-house. I even have Bill Gates on videotape telling Jon Sachs how they were using XENIX to do all their development years later.

Frankston: We actually met Andy van Dam first in the 1970s. There was a whole rich set of things that we did. That program was in 1973. Dan was a newcomer since a little after that.

One of the things that's not appreciated is the many years of programming experience that went into VisiCalc. And the methodology we used was—how do I put it—we just stopped writing the code. You see where it goes. But, we actually had scaffolding. In other words, we planned the program out, then we discovered how it should develop by writing, because what better medium is there for how to write a program than by actually writing a program? We wound up shipping

the prototype, and it was like any evolving creature. We had vestigial stubs that didn't get used. So, there's some code in VisiCalc that we just decided, okay, we're not going to put that facility in, but we couldn't take the whole mechanism out. You just made sure you didn't get to it and use it. Every byte counted. We dropped out the interactive help facility because we thought it would take 2,000 bytes. And, that was a lot of memory.

Bricklin: We set some specific requirements on what we felt would sell in terms of the size and what we should target.

Frankston: We were aiming for a 16K machine and we failed. We did some over design, so I made it too fast on the display card. But, the main thing I want to emphasize is how much effort went into that design. And, the most important point is that VisiCalc was not a program. It was a product. The program was just a means. I think that's the major thing to remind people; whatever it took to make it work is what we did. I'm still appalled at programs which don't take enough responsibility for the whole operation. I mean, there was some frustration. The Apple II, for example, had a reset cycle. There was a limit to what it could do. But, even after you've reset, you were able to recover your data. So that was the attitude—that it had to be a product.

Bride: We'll bring Dan Fylstra in now. Then let's get to the details in terms of your thinking about how this will be marketed, and the relationship among the three of you.

Dan Fylstra: I came at this from a very different but complementary perspective. At this time I was looking for promising business software in particular. What I was interested in was, if we had a promising business software package, here is how we would make this a business success; here's how we could reach customers. There was a set of deliberate choices we made to go after personal computers first instead of minicomputers. We wanted to do the marketing and reach the customer in a certain way, which was through retail distribution. That all came about because Harvard Business School and MIT were big factors here for all of us. All three of us were "Course 63" [Computer Science and Engineering] graduates from MIT, but we didn't know each other at that time.

Frankston: Yes, I was in the experimental Course 63 program. You were in the real one.

Fylstra: I became involved in the personal computer industry very early—by 1975. It was really the hobby computer industry. That happened through joining an MIT spin-off, Intermetrics, and meeting Carl Helmers. I found out what he did in his spare time, hobby computer stuff, and I got involved in *Byte* magazine. Something else that got me involved happened during a trip I took for Intermetrics to Europe, and I worked on the European Space Lab, a laboratory that runs the space shuttle. It was a fascinating project; I was in the company of many extremely talented scientists and engineers. Not just software people, but all kinds—aerospace and so on. They were all struggling because of management problems that slowed down the project, and management matters to me. I come from a family where my father is a minister and my mother

is a social worker and teacher, and this was news to me: that technologists could be blocked or enabled by effective management. So it got my attention, and I applied to business school while I was in Europe, got accepted, and then at Harvard Business School I got excited about marketing, and I had some great professors. This led to my working at *Byte* magazine in my spare time and working on the computer dealer magazine. So being in school and being interested in marketing led me to this plan. I also turned down all job offers coming out of business school, and I just started Personal Software instead.

In about mid-1977, I was doing a marketing field research project, and I just reread the report that I wrote for them. It's a review of the personal computer software industry and what was happening with the computer stores. At this time there were scores of stores, which soon became hundreds. The report basically laid out a plan for a software publishing venture, and it reviewed the software products that were out there. It identified Microsoft as "promising." By the time we three met, Personal Software was already in business selling. We had Microchess getting built up. Microchess was our first product. Before VisiCalc launched, Microchess sold 50,000 copies; Peter Jennings just told me that. It kept selling until very recently, and it sold over a million copies.

Bricklin: Now, at this time there was Software Arts and Personal Software, and we didn't know. Depends on what time.

Fylstra: When we first met, Software Arts had not been formed; Software Arts did exist as a proprietorship. We, Personal Software, were in business and had tens of thousands in sales.

Frankston: Those used to be big numbers.

Bricklin: We have to put it into perspective with Cullinet. Cullinet was the one you were aiming at. They called it Cullinane then. And they were aiming for Cullinet, as that represented how big one could be, which was like $10 million in those days.

Fylstra: If you go back to this research report that I wrote in 1977, it outlines various application areas. One of them was games, and I knew that would be a quick start, and that's why we started with that. But there were 14 different institutional and personal finance applications in this list. You could do all of them, physically—all of them. So when Dan [Bricklin] came over and showed me what became VisiCalc, he described the first package and the idea, because there was no prototype or anything. Am I correct that you had not worked with a personal computer prior to that?

Bricklin: Well, there were three personal computers of interest, or what are now called personal computers. They were computers with very little memory; having about that speed with a video screen of that type I had used. The PDT was one of them. I hadn't programmed it, but I

programmed its predecessor that was less powerful. But I had played with a TRS-80; and, of course, I had worked for a year with a company that had a 6800-based computer. So, I had worked with that sort of thing before. I had done a lot of work with machines having the same capability, but I hadn't actually played with the Apple II.

Selecting the Apple II as the Target Computer

Fylstra: So, this choice of the Apple was probably pivotal; it wasn't just an accidental choice, by any means. With limited resources when we started out marketing it, how were we going to get to the market and reach the customer? If it was the Radio Shack's TRS-80, we had the same problem because Tandy's distribution system was wholly owned and controlled by them. But with the Apple, it was wide open. That was the heart of the matter. What I got all excited about was this industry opening up. Computer stores were opening every day, all around the country. And although we were small, we could grow with the industry. We'd form relationships with them, and we could grow with them. The windows of time in history when you can do that are very limited. Two years later you could not do it. Four or five years later, around 1976 or 1977, I wanted to get a product into Softsel, which became a distributor. I was an investor in Softsel; I was a shareholder, and it was from a prime company. And, I still couldn't get the product that I wanted because they didn't carry it.

Bricklin: Because I was there, I learned how to get a company to carry your product. Many times what you needed was the dealers to be asking for it. If the dealers were asking for it, if there was demand, then they would carry your product. Otherwise, they wouldn't.

Fylstra: When we started, there were a handful of software packages available. By this time we're talking about, there were thousands.

Bricklin: I remember back to the decision on the Apple, though. I remember you saying some other reasons why you were interested in Apple. There was the disk drive.

Fylstra: Yes, there were several factors.

Bricklin: Because you made sure that all your products were on as many machines as possible, which is why we'll get into how you met Bob [Frankston] and what the sequence was. You were trying to put your products on all the machines you could at the time, which is what Bob was brought in to do, was to move Microbridge to more machines.

Ken Wasch: When you saw the product, it wasn't even prototyped yet?

Bricklin: It was prototyped on October 8, 1978.

The Software Publishing Concept

Wasch: The question is why didn't you just hire Dan [Bricklin] or buy the concept instead of trying to publish it? The concept seems quaint to us today.

Fylstra: As far as how I got into publishing it, I did have a family background on my girlfriend or my wife's side in the publishing business, and so that kind of fit.

Bricklin: And, the lawyer you had was a publishing type lawyer.

Fylstra: Yes, Fred Anderson. From the very beginning, we talked about it. I think you just have to view this as, first of all, the idea came from an entrepreneurial mind; second, there was a software publishing model out there and we'd use it; and, third, these guys having known each other for much longer than we'd been and I've been doing it, with ideas about forming a company. So, it worked out that way. And, fourth, although we all had high hopes and expectations, I don't think any of us fully foresaw just how important VisiCalc would be compared to everything else and how important we would be to each other. I'm not sure, even as it all unfolded, that we realized how important we were to each other. Because both companies had business plans of their own. Personal Software was publishing additional products besides VisiCalc, both before and after the launch of VisiCalc.

Bricklin: All products were from authors, except the ones that you did yourself, of which you were the author.

Fylstra: Right, right. And over time, we did build our own products.

Bricklin: Bridge Challenger, Microchess, Stimulating Simulations …

Fylstra: There was actually a personal finance program there; I just realized that. I had not looked at that in 20 years. I gave a lot of material to Tom Haigh, which does cover this early period.

The Apple and Other Machines

Bricklin: Let's go back to the Apple II disk. That's really interesting.

Fylstra: There are a couple of factors. When we started, the disk wasn't yet available, but we knew it would be.

Bricklin: You told us a story about Apple, and I want to know if it's true, which was that

Apple had bought all Shugart Associates' extra capacity for floppies for a certain period of time. Therefore, the Tandys and others couldn't get floppies for about six months, so Apple was the only place you could. We came out on cassette and on floppy, but we felt the floppy was important. So, that alone was one of the reasons that Dan [Fylstra] was really impressed by how Apple had pulled that off. I don't know if it's true or whether it's apocryphal.

Frankston: Looking back at it, the quality of Apple disk drives was much better than the Tandy ones sometimes were.

Bricklin: Because we assumed we would do it right away for the Atari, for the TRS-80, et cetera, and we actually did, in less than a year, have versions for the Tandy, the PET, and the Atari. An HP version was also available in early 1980.

Frankston: Yes. That's what Brad Templeton—who's now chair of the EFF [Electronic Frontier Foundation]—came to help with.

Bricklin: And HP had a version running in 1981 on their own machine.

Frankston: They were the only ones who did their own porting.

Fylstra: They did their own porting; they had access to source code. The guy who brought us in had been in a class where I showed it off at Harvard, and he was exposed to it and after seeing Ben Rosen's article he brought us in. I don't know if they were first distributor who signed, but they were early.

Frankston: But, I think the disk story is an interesting point and you were telling Dan [Bricklin] all those wonderful stories about Apple.

Fylstra: We should reflect on this. Some people would say that Apple was lucky that we chose the Apple, but I think you can make just as good an argument that we were lucky that we had an Apple opportunity. Every time that somebody said it, I know that Steve Thompson was irritated when people said that VisiCalc made the Apple, and I can certainly empathize with that.

Bricklin: But they agree. In writing, they have said that it was a catalyst for that.

Frankston: It was synergistic.

Frankston: Actually, I give Woz [Steve Wozniak] a lot of credit because Woz basically had built an open platform, whereas the PET was much more of a designed machine. And, the TRS-80—well, it was the TRS-80. It was amazing; we had a decent version of it.

Bricklin: And, it was easy to get good manuals for the Apple.

Fylstra: There was some sense of evangelism going on even at that time. Apple coined the term evangelism and that was much later. But it was Jobs and Wozniak themselves, going around and talking with people like us. There's a book called *Accidental Empires,* which I've never actually read, but I saw the title and said, "This is not the way it was. It wasn't accidental. It wasn't just a bunch of computer nerds"—

Bricklin: —given that half of them had MBAs.

Frankston: Let's be fair. There was a plain brown wrapper aspect but it was not total. The reason that we succeeded was a combination of, first, marketing finesse. Also, Woz's enthusiasm was significant (what was interesting was Woz's talk at the Computer History Museum)—he didn't know how over-engineered his design was. He did it much better than he had to for the initial functions, which gave us a viable platform.

Bricklin: It was a good game machine.

Bride: That was his HP training?

Frankston: No, it was actually anti-training; this was hacker-training, self-discovery—you really should look at Wozniak's Computer History Museum talk from about a year and a half ago.

Bricklin: He built a machine that was very versatile. It was good for games and other things, and, we needed a good game machine because the interactivity was necessary. Now, we suffered by only having two arrow keys. Luckily there were some problems with the paddles which made me end up with arrow keys instead as a mouse equivalent, but it didn't have lowercase, which was a problem. But the design meant that VisiCalc was the only thing you could usefully run on it for business because you couldn't use it for word processing.

Frankston: That brings up an important point. One of the important things about innovation is being able to do something before you're supposed to be able to do it. In other words, if the machine were much larger and more powerful, it wouldn't have been as much of a challenge to actually get it to work. In a sense, we were lucky that the Apple was very good for certain things, but that it was not so terrific to write a compiler for, because all the tricks I used were not things compilers could pull off. The machine had enough of a design hurdle to implicitly create a barrier for the people developing software for it, but enough capability that they could develop the software.

Significance of the Harvard Business School

Bill Aspray: Let me ask a couple of questions. There have been references in several occasions here to Harvard Business School. So, what did you learn in Harvard Business School that was good for doing this business? And what did you learn at Harvard Business School that was sort of bad for the actual end product?

Frankston: All along, we were aware of both business and technology.

Bricklin: Dan [Fylstra] went to Harvard Business School because he says that he saw the value of marketing. Bob and I had worked on Multics and had seen that the marketing for that wasn't good, yet it was a superior product. In hindsight, Multics was a superior product to many other things—UNIX is a small version of it, and it did very well in a sense. But Honeywell had an internal product that they liked better and bad marketing messed things up. So, we were aware of that. But the reason that I wanted to go to business school is that I saw programmers in their fifties, friends of my parents, who were out of work because us young whippersnappers were better: We were just out of school, and we would work for less money and work more hours than they would because they had a family. I didn't want to be that 50-year-old.

Aspray: But, that's not the question. The question is in what ways did business school shape you?

Bricklin: For me, what Harvard Business School did was let me see the range of worthwhile business uses. The business school experience also let me see that top business people will use any tool they can get their hands on to do the work they want to do. Now, I didn't find that out in class; I found that out from presentations we had. I remember a presentation from a person who was involved with oil tankers, arranging for them to be in different places around the world. He had written the program for that on an HP calculator, even though that's not the right tool to use, but it was a tool that worked.

One of my classmates was a member of OPEC prior to being in our class. He would sit behind Sheik Amani at OPEC meetings, and he said they would run financial simulations on a CDC time-sharing system using a projection screen to show them what was going on. They'd say, "Well, what would be the impact on the American economy if we raised the price of oil by this much a barrel?" So, they actually did that sort of thing in real life, and that made an impact on me.

I also was exposed to financial forecasting tools at that time. Finally, as an MBA I began having the types of problems that VisiCalc ended up being used for; I needed that sort of tool to help solve the problems I was running into. This was the same way I helped invent things previously with word processing. I had to come up with an answer to the question: What tools did I need in order to do the work I needed to do in each of my classes? And I had all the professors to ask. So, I look in my notes, and I see that when we showed VisiCalc to Professor Glauber—he became Treasury Under Secretary for Finance – he's now head of NASDAQ – when he saw it,

he said, “Net present value should be in it, and it should be handled in the following way; you should have IRR,” or whatever, and we’d start work to develop that.

Now, the machine we demonstrated VisiCalc on was an Apple II with the funny colored wires coming out of it that we kept borrowing from Dan [Fylstra]. Since I had access to my professors, I brought Dan with me, and we met with the professor who was teaching me corporate competitive strategy, Michael Porter. Dan was talking back and forth with him about what to do; Porter was explaining that maybe we should put capital into the computer stores; we should come out with a line of products, and so on.

When I came up with the idea for VisiCalc, I asked my professors about it, and one of them told me about how production planning was done, and how they would fill blackboard after blackboard. They said that if they could do all the planning with a modem so people wouldn’t have to fly in for the production meetings, that would be wonderful.

I went to my only computer-knowledgeable professor, Jim Cash, who said, “I don’t understand your product; I can’t visualize it,” which was the right thing to say. That involved the user interface. That was key to him: “You should do something. If you can help the user interface, that is key.” Jim Cash, as you know, is one of those who’ll do all sorts of wonderful things. Then there was my professor who told me not to do it, and he was great to even tell me not to do it. He said I should talk to Fylstra. This was the spring of 1978. He said, “You should talk to Fylstra. He’ll tell you why real estate agents won’t buy your product,” because there already were financial forecasting tools available. I knew that quite well because I had worked with Bob [Frankston] who had done work on some of those, so I’d used some of what was available. So, even in the negative they had been helpful.

Harvard Business School, in those days, though, was not pushing entrepreneurship very much, but I did get to hear from Phil Sprague. We also heard some people from Analog Devices, and they were impressive. I learned a lot of things about small business.

Aspray: I’d be interested to hear what Dan Fylstra has to say about the same question.

Fylstra: I went to Harvard Business School with almost a blank slate in terms of business education and I learned a tremendous amount. I got a whole education in marketing. It was challenging. I still remember my first class on my first day was industrial marketing. And the cases that you had to be prepared for—it was challenging as hell. The fact that I had unusually good marketing professors made a difference. I also certainly learned a lot in terms of finance, production, and so on, and it all became important for the applications later on. I got interested in retailing because I was aware that computer stores were popping up everywhere. I formed a good relationship with a retailing professor.

One thing they did not do in business school in those days was prepare you to be an entrepreneur. In my class the only entrepreneurs that I know of who graduated in the class of 1978 were me and one other guy. There may have been others, but it was a handful.

When we graduated and went directly to start a company, which is much more common today than it was then, they taught us about organizational behavior, matrix organizations, and everything that concerned companies of thousands of people. They didn't tell you how to supervise your first employee, and that was the real nuts and bolts. First-line supervision—that's what I had to do on day one. Instead, Harvard taught us all about financing, cash management, treasury operations—everything for a really big company. They didn't teach you how to collect your first receivable from a small business which was a computer store; didn't teach you how to open a Visa or MasterCard merchant account—that's what we really needed on day one.

I will say that the preparation for running a sizable business did come to be very useful later on, and not that much later, because we grew very, very fast. And by three years out, we were facing a lot of those issues where how you organize, how you manage people, all mattered.

Coming up with the VisiCalc Name

Ken Wasch: How did the name VisiCalc come about?

Bricklin: First, the name sort of was spun around after a breakfast meeting that Dan [Fylstra] and Bob had. The second thing is that the decision to use the name VisiCalc on the product was Dan's to make, and Dan made it. From a historical viewpoint, the important thing is the decision to name it VisiCalc was Dan Fylstra's decision. And that was the case whether we liked the name or not—every name had its problem.

Fylstra: I agree with that part. It was my decision to make. But this naming choice—who thought of the name is not really all that important.

Frankston: I'll agree with that.

Fylstra: I do have a very clear memory. It's in that write-up. Bob, have you ever talked to Stewart Alsop about this, about his recollection of how the name came up?

Frankston: But, he wasn't at the meeting.

Fylstra: He wasn't there at the meeting; it was just you and me. But he was there when you guys gave an extended interview to him for *Inc. Magazine*, and although I'm pretty sure it's not in the article, it is in his notes.

Frankston: What did he say?

Fylstra: Essentially it's pretty much the same story that's in my write-up. Stewart once said to me that what happened was that I was lukewarm about it and you guys were lukewarm about it. That was his version of the story.

Bricklin: First of all, it doesn't matter; it didn't matter in the lawsuit. But, for some time Dan [Fylstra] had told me that he came up with the name, so I repeated that for many years until Bob heard me say it and said, "No, I came up with it." I probably told Stewart that. It should be in Stewart's notes because that's the story that I was telling at that point because I wasn't at the meeting.

Frankston: Let me just tell it again, which I think I might have written on my Web site. I remember writing on the napkin "visible calculator." Now, whether I thought of the term "visible calculator" first or whether Dan [Fylstra] did, I don't know. The middle capital came from my having seen the name TeleMatic, and the logo had a capital "M" in the middle. So, VisiCalc has a capital C in it. That was a key thing. And, by the way, when you make up a name, none of the names sound good when you first say it, but you get used to them over time. VisiCalc sounded pretty bad, but less bad than Electroledger and some of the other choices.

Fylstra: Especially Compulator.

The Retail Channel

Frankston: I want to make just one comment about the industry and the retail business. The retail channel did not have MBAs. The stores were not exactly businesses in many cases.

Fylstra: But, I would say that it varied.

Frankston: The best ones were real businesses, but a large number were hobbyists.

Bricklin: But not their customers.

Fylstra: A lot of them were in franchising. Franchising turned out to be important in computer stores. ComputerLand was the leading franchise organization at the time. We began to notice, first of all, that they were making sales everyday, and selling other game products and so on. We were signing up dealers as we went along—and I had learned in a retailing class about terms of trade, relationships between manufacturers and retailers. One of the things I realized very early on is that we had an opportunity to set the terms of trade as a new industry. I thought about this pretty hard and said, "What are we going to do to set the terms of trade in our favor?"

To take the extreme example of this, we had very strict credit terms, which was possible because Apple had very strict credit terms. Usually it was cash on delivery, and occasionally we would grant net 50 days with some people. We had a 35% functional discount for dealers, but to get them to 40% involved some kind of incentive plan.

I knew that the book publishing industry operated on very different terms that were considerably less favorable to the manufacturer. There is like 50% or 60% discount sometimes...

Frankston: And they give product back.

Fylstra: There's this famous line: "Gone today, here tomorrow." That was their policy.

Bricklin: Various people had a thing about that in the software industry later. The pirated copies came back.

Fylstra: This did not last forever and it could have—it was the underlying economics of the software business. It's a high-end gross margin business just like books, just like records. And when you have enough competition, the terms of trade had to change, and they did. The discounts went up and the credit terms went out and eventually returns came into the picture, but that took years. So, business school was quite influential for me.

Bricklin: Someone who was significant to me was Charles Kelso. I usually don't use his name because I'd like to be kind to him. I'm told that people come to him and ask his advice and he says, "You're asking me?" So I don't mention his name, but if it weren't for him—he was my first finance professor, and I learned that you needed finance. I think the thing about MBA-ship that should come through from what Dan and I were saying is that there's a breadth of skills about all parts of business that are necessary for you to know the "language." There are so many different things we learned that are needed; MBA school, especially at Harvard because of the way it was done, can be considered the Berlitz [Language School] for business, all parts of business, and that was important to the VisiCalc product and to the companies. I had to write our accounting system that did our checks and everything for the first year or two. And we wrote our own assemblers and linkers and everything else. Dan says he had to invent the terms for all these different things.

Fylstra: "It's okay to be a Jack of all trades" is one of the things that came through in a professional manner. That came through from Harvard and that you had to be the best. My first day, my first class in consumer marketing, and they called on somebody who had majored in that as an undergraduate, and it blows you away: "Oh, my God, how am I ever going to be able to be in this class?" The level of people was formidable. My classmates included Meg Whitman, Elaine Chao who is now Secretary of Labor; Jeff Skelling, the guy at Enron. So, that was the level we were used to. And, as Dan Bricklin said, he was inspired to work to that level, but we

from MIT were used to that anyway; at Intermetrics we were competing against IBM.

Moving VisiCorp out West

Aspray: If I could get Dan to talk about this: When did you make the decision to move west, and why did you make it? Was there something over there attracting you or something over here pushing you away? And, although most people would say, well, Silicon Valley is Silicon Valley; California's got great weather—were there things here that were pushing you to make the move?

Fylstra: No, I don't think so. I love Boston and still do. You know, I met my wife here. I have very fond memories of MIT and HBS. It was the pull from out West; it was very much the attraction. And, it wasn't just good weather; it was business. In those days we were still doing tape cassettes and starting to do diskettes, and we were ordering them from Santa Clara and shipping them into Boston. And then assembling them, turning around, and shipping them right back to Sunnyvale, Santa Clara. And all of our business relationships were forming there. We were flying across to Seattle; we were flying across to see Commodore, which is in the same place. We were flying across to see ComputerLand. There was just at a certain point we felt, "It's going to help us if we move out there." We were willing and a couple employees came with us. Others stayed behind. I think it was an excellent move from a business standpoint. It was very good for VisiCalc. But, it did have the side effect, I think, of separating us by distance, by time zone. I think you can tell from this whole discussion—I've certainly felt, boy oh boy oh boy oh boy, did we miss out on a lot of communication.

Frankston: What the move also did was get you in the middle of the VC community. There are various kinds of VCs; I don't want to say all VCs are the same, but there were some very heavy-handed VCs in those days.

Impact of VisiCalc on Apple

Evan Koblentz: You talked earlier about how much things like the Apple disk drive influenced your decisions. In future versions of VisiCalc, after the third version, how much did you guys influence what Apple did with their hardware?

Bricklin: We didn't talk to Apple.

Frankston: Well, generically this was about the marketplace and separation. The reason why we have these Moore's Law type of things is we didn't have a dependency on them; we were not waiting for the hardware people to do the right thing. We just put up with what they did, and hopefully they wouldn't be as stupid the next time around.

Aspray: Did they ask you anything about hardware help?

Fylstra: Just a comment here about separation and distance again: I think if these guys had been in Silicon Valley, probably more conversations might have happened. But, you could say that Bill Gates was more successful in establishing tight relationships with hardware manufacturers—

Frankston: —and developers—

Fylstra: —partly because he was doing the systems software, and so it was necessary. I think where we had the strong relationships with Apple was in the Apple marketing organization, and I do not remember that we had a lot of interaction with them. Something else I should probably mention here: There was always the potential and later the actual. There was a potential for Apple to compete with us; they were in the software business as well as in the hardware business. There was a point at which they did create a spreadsheet for the Apple II.

Tim Bergin: Is that what was in AppleWorks?

Bricklin: No, it was prior to AppleWorks.

Fylstra: The situation with Apple was that it was an alliance; it was an alliance of mutual interests. They wanted to sell more hardware. We wanted to sell the software. And, ComputerLand—they were the most important franchise. We looked at our to do list, and a lot of sales that emerged were because the ComputerLand stores turned out to be the strongest because they had a franchise plan. And all these computer nerds who were running computer stores had a way to organize their business. So, I've always viewed it as a triangle: hardware, software, distribution.

Bricklin: Now, if I remember right, you had shares—personally—pre-IPO shares of Apple back in those early days. The other thing is that some of your investors and others—your PR firm and accounting firm, and I don't remember what else—were all Apple users.

But partially you picked them because they did Apple. I don't know what happened, but we were trying to ship the Apple III version of VisiCalc or the first overall VisiCalc, not VisiCalc Advanced Version, but VisiCalc Apple III. And we wouldn't ship it until it passed QA. IBM will tell you that ours was the only product they got that they couldn't find any bugs in, and they were so fussy about it. We were like that with Apple; we wouldn't ship it until it passed our QA. Our product manager at Apple was Jeff Raikes. The other thing is that Apple went public right after we shipped. They had been holding off going public, and for some reason they went public the day after we shipped. Now, we don't know if they were holding off until they had VisiCalc or not, but the timing was very strange.

Fylstra: One other comment on the Apple relationship is that it was golden in the early days and remained important to everybody. But, it began to change as soon as we shipped VisiCalc on the Commodore PET.

Bricklin: But that was nine or ten months later.

Fylstra: Yes. And I distinctly remember that Steve Jobs was not happy.

Bricklin: Oh, he yelled at Bob about that years later.

New Speaker: How much of VisiCalc is left in today's spreadsheets?

Bricklin: Did you read on my Web site about VisiCalc being the first spreadsheet? No code is in it, but some of the keystrokes still work.

There is something they took away that they didn't fix in Excel, which is that if you type one plus one, it doesn't give you two. It gives you one plus one. You have to say *equals* one plus one, which Lotus 1-2-3 did not have. But, other than that, the basic idea in so many ways is the same.

Bride: There's one thing that I definitely want to have happen here. I know Dan Fylstra said to us beforehand that he had some questions he wanted to ask of the two of you [Dan Bricklin and Bob Frankston] in a public forum. And I'd like to give you two the opportunity to ask questions, too.

Merger Issues

Fylstra: One thing I've always been curious about is what the merger overture looked like from your side. I'm curious about your perspective on why a merger didn't happen, and what would have happened if it had.

Frankston: Let me give just one story. I think the most telling one was where you were sitting down with Terry [Opdendyk] and Dan, and I think Julian [Lange] might have been there, to look at the spreadsheet Terry was showing to say why Personal Software or VisiCorp couldn't afford to sell VisiCalc—and I found a numerical error. A numerical error in a spreadsheet! It was a fake spreadsheet. And, it was obvious there was a lot more benefit than what was showing, and I said, "Well, if it's not making money, give it back." "Oh, we can't do that."

Bricklin: When I started working, I kept a log of all sorts of things, involving work and other things. So I continued to do that: "I did finance test program in Basic, at Personal Software." "Dan F. liked it on 8 October 1978." And, you know, "I showed John Reese and he liked it and

will comment." John is the one who inspired me not to use the "U," but to go directly to the arrow key afterwards for pointing.

So I went to my log, looking for that specific question about the merger. What happened was that Dan [Fylstra] had first mentioned having a merger. Well, we would run the development arm or something, because you didn't really have a development arm at that point. And we were very interested; we took it extremely seriously.

The situation was, to do a merger you had to do your merger negotiations, and you had to come up with a valuation. I called up Jim Cash and said "Hey, can you help me?" He said, "I can't right now. I'm busy. But, there's another finance professor who is not coming back to the business school next year; he's leaving. He does consulting. He's done mergers, and he can help you with the merger valuations." That was Julian Lange. Julian and I met the same day that Mitch [Kapor] started with you guys—the 20th of March, six days before your birthday. (I have notes in here about all sorts of things. "Sent mail-o-gram to Dan on his birthday.")

Anyway, we were working carefully on how to do the valuation, and we had some meetings with you and others. Then things were sort of put on hold because you were trying to hire Terry Opdendyk, although eventually you were going to come with Terry to a meeting. We were all set. You were going to come with Terry, and we were ready to meet. Julian was a consultant; he was only working as a consultant to help us do the valuation.

There were problems because, as I remember, he valued your company at around $2 million or so. Julian was within a half an order of magnitude of what you actually were valued by your investors. He did okay with that, and then he valued us at a certain amount. Although the valuations were way out of whack on some things, the results were essentially based on the standard way of doing things.

Terry came in. The first day was a nice meeting. On the second day of the meeting, Terry said, "Listen, you guys are a dime a dozen, you developers. You're not going to grow past seven people. You're not going to be able to manage." He said he'd come from Intel where they needed some development and they had contract firms to do the work. He said, "We are going to choose among the best of the developers of the products. We'll choose what we want, and we'll let you all vie for it, then we'll take the best ones and we'll publish it."

He had a very arrogant attitude and was very manipulative. And from then on, there was this pressure to lower royalty rates. We were not the only ones who had that problem with Terry. Mitch Kapor left for that reason. I was warned by him not to have any "friendly chats" with Terry. Eventually there were problems with a variety of developers. So, at that point we had to change our business plan because it was clear that, first of all, you weren't as interested in merging as we had thought. Second, Terry wanted to capitalize our royalties or something—there were all sorts of issues, including our interactions with Terry, especially those involving IBM. It was not

the style we were used to.

Everything seemed to revolve around trying to give reasons to lower our royalty rate without giving us anything else in return. We had an agreement, you know, about that. We firmly expected to merge and were planning to do that. But after Terry came on the scene, it looked like we were going to have to write off VisiCalc. We were eventually going to lose VisiCalc, we realized. Eventually, we were planning to do a lot of different products anyway. That's what we wanted to do. We can get into all the things that you guys said— [Richard] Melman threatened a lawsuit once, and you threatened one another time.

Aspray: How many employees did you have then?

Bricklin: We were still in Cambridge when it started, so we had a handful when Terry first came along. That was September or so of 1980. Your first overture to merge was at the West Coast Computer Faire in 1980, which was in the spring. I can give you the dates if you want because I wrote it down.

Brizdle: You had the relationship with Dan [Fylstra]. Did you ever let him know how things were?

Bricklin: What, that Terry was like that? No, because it was clear that Terry was doing the talking; he's the one who talked on the phone. On our side we had a product manager who did the talking. Our relationship first was with Dan, and then that moved to the side because we had a product manager. And, our product manager was a phenomenal product manager. He was one of the best that ever existed. And, he kept East Coast time even though he was on the West Coast. His name is Mitch Kapor.

Frankston: As a matter of fact, he came back east.

Bricklin: I remember the meeting when Mitch asked for the job. Remember, you were on a PR tour and you were telling me, "We can't hire product managers. It's so hard," and Mitch said, "What about me?" So we hired him but after a few meetings with Terry, things deteriorated, and Mitch stopped being our product manager, and we didn't have one for months. At that point, we were producing so many different versions, we brought in management consultants. We brought Tracy [Licklider] in. We brought Steve Bayle in. Julian Lange came on full time. We had a lot to do, but we clearly had to produce; we knew we had to have alternatives because we were going to lose the VisiCalc income eventually, so we had to build up our company as a company.

Fylstra: Did you really believe that?

Frankston: Terry made it so clear. It was unambiguous. Again, there was something that

was so telling about a fake spreadsheet.

Bricklin: There was a lot of not negotiating in good faith. It was like "We're losing money on every copy. We only make it up in the volume." I mean, he was literally saying those things.

You were prepped by somebody else. There was another comment somewhere where you said we couldn't merge because your employees could not take the dilution. My notes said that. Don't ask me.

Fylstra: Was there ever a price?

Frankston: There was one. We were willing to accept a relatively small share of the company.

Bricklin: We would have had, Bob and I combined, the Software Arts portion of the combined entity. We were willing to be much less than half, but not less than 10 percent. You were offering less than 10 percent.

Fylstra: Who was offering?

Bricklin: Julian remembers the actual number that you guys had mentioned at one point. I don't know if you were involved in those discussions.

Frankston: Actually, it's too bad that Julian isn't here; Julian had a very good memory for details.

Aspray: I'm confused about two questions. One is why do you lose the VisiCalc income?

Frankston: Terry basically said there was no income; he'd just give us the $300,000.

Buy-Out Discussions

Bricklin: Eventually we negotiated a buy-out. I think you did this with Mitch. His contract was bought out for $1.7 million or something like that, which I remember he took as long-term capital gains. Mitch's royalty rate was, I think, 33%. Anyway, what was the question again?

Aspray: The question is: would you have lost the revenue because they would have developed their own VisiCalc?

Bricklin: No, no, no, no. What we would have done is we realized that we were going to

have to separate on that product so we would have to make a deal. We were negotiating a buy-out for all VisiCalc future royalties for a single payment. At one point we had an agreement for $10 million. They would pay us the $10 million. We had an agreement, we thought, for $10 million, and Dan was involved in that. I think it was with Richard Melman.

Fylstra: Yes.

Bricklin: I think we had okayed it for $10 million and we would then go away. Our royalty payments the next year didn't occur—Melman disappeared and wasn't with the company anymore. Our royalty payment the next year was greater than $10 million. So, we were willing. What *you're* saying is that we didn't know—yes, we knew. We knew that this was a tough relationship. If we couldn't merge—and it seemed to be that you didn't want to merge, in working with Terry—that was off the table. The merger was off the table, and that's what really bothered us because we were already merged. I was crestfallen. When he belittled us like that and said, "You guys will never be over seven people"—because that's the magic number of being able to manage—and "you guys are dying and we're going to choose the winners," and all that. That arrogant attitude dashed it, and we didn't really talk merger again for a long time. After that it was buy-out.

Frankston: There were two messages. One was we were not to get any money; we're out of it. At the same time, we were being asked for advice on VisiCalc, which I found extremely strange and could not figure out.

Fylstra: There's quite a bit of information here, and I don't quite know what to say about it. I feel like I should come to Terry's defense because there is another side to this, and I don't particularly feel like I can represent it all. But, you know, one factor is that the royalty rate was very high.

Frankston: If you look at it as an author royalty, that may be, but that was the deal. This is a development group. So, if you look at the opposite way, you can take a look at the marketing cost, which was then 65%, and only 35% being reinvested in the development. It's the opposite for you. So, it depends on your model.

Bricklin: There were different views of why we should do what, but the style that Terry took was a problem. At Electronic Arts and other companies, like Ashton Tate, before they could go public, it wasn't "at all costs we're going to buy out our developer." The amounts of money were large—I think some of the problem had to do with the pressure of the investors since you had venture investors who probably would not have taken the dilution.

Fylstra: The thing about this is that I don't have a memory of board-level discussions on any of this. It sounds like there were negotiations.

Bricklin: You don't know half the things you don't know, as far as I can tell, which is why I say "intracompany discussions."

Frankston: What the board was being told by Terry was very different.

Fylstra: Why didn't you just call me?

Bricklin: You were so high on Terry that even when you would come to meetings, you did the same stuff. You came to us with the same approach. The whole company changed, you know, and our relationship was with these other people—Melman, and I like him. Melman and Julian negotiated the final settlement.

Frankston: Yes, they tried to.

Bricklin: No, they did the final settlement. Before that, no, that was Melman and you guys with Melman and whoever did the negotiations. You didn't know about the $10 million offer from us?

Fylstra: I don't think so.

Bricklin: Why did Melman go? Why was Melman fired or whatever?

Fylstra: You know, it's possible there are things I just don't remember.

Bricklin: I remember you wrote and you said at one point you were getting back into general management. You had been spending one-third of your time on PR. So, you were spending your time as one-third PR, one-third management, and one-third development and R&D. I guess you had been outside of management for a long time. So, our relationship didn't help. And Terry had so sullied the waters. You just have to understand how you don't do that to authors. When they want recognition because that's of value to their company for goodwill, you don't call them "little boys." That's quote-unquote "little boys." I can give you the date.

Frankston: There were other problems, too. We were basically positioned as the least able to do spreadsheets.

Bricklin: Why did Mitch move back to the East Coast? He was so pissed off!

Fylstra: Well, what he told me actually was that he had girlfriend problems.

Bricklin: Yes, we had to hire her so he could have her over there. So, we hired Deborah;

she was here. No, Mitch was real upset, besides the fact there were no all-night bookstores. He was upset at what Terry was doing. Sorry, but that's the way it was viewed. I wasn't the only one who felt that way.

Fylstra: I just want to put in some kind of good word for Terry because I think he did a lot of good in the company. And, as I remarked, I think there was also a problem in the reverse direction with Julian.

Bricklin: Well, we could talk about it. I can get into that a bit because it's not just Julian; there was also a problem with the lawyers.

Fylstra: We all listen too much to lawyers.

Bricklin: We listen too much to lawyers, and there are reasons for this we could give. Do you remember the downloading where we had to do it by a certain time?

Fylstra: Yes.

Bricklin: I can give you the date when you did that. It was a Friday afternoon, damn it, and Terry knew about that days before and didn't tell us until he needed it. We had to suddenly do it on short notice. That was really not the right thing to do. And, he wouldn't give us time to do it. The relationship with Terry—he was *horrible* to us. But let's get back to the lawyers. The lawyers, when it came to future products, were very muddy about new VisiCalc versions. We were so worried about wanting to do new products, and our contract said that whatever we did for VisiCorp and they sold, they then owned as a product; we couldn't sell it to somebody else. Therefore, we were very worried about doing any feature in VisiCalc that, because of the lawyers, would prevent us from being able to add that feature to some other product. And then, too, you guys were so worried about the name VisiCalc being associated with any other company that you threatened to sue us if we said, "We are the creators of VisiCalc," or something like that.

There was the *Inc. Magazine* article that Stewart Alsop wrote. I brought it. You can see it. The lawyers made us be so careful about how you interpret everything; clearly you had some of that material. And then the lawyers, of course, always think that they're right: "We have a case that is a locked-shut case." Well, it turned out they didn't have a locked-shut case. Whatever your lawyers told you, Gordy Davidson was off the wall with that, and clearly it didn't hold up. Our lawyers would tell us whatever. Now, you guys had problems in the future with the lawyers; what they promised you and what you could get from Lotus. All the legal issues were a pain in the neck. Remember we sent Steve Lawrence to Germany for a piracy case?

Fylstra: Yes. We jointly worked on it and won. It was actually a precedent-setting case.

We won a contract infringement case against a German distributor/dealer who was basically ripping us off by making copies.

Aspray: What was the highest number of employees did Software Arts had?

Bricklin: 125 people—that included manufacturing, marketing, sales, documentation, etc. That was at the point where we were developing VisiCalc Advanced Version. We first wrote it for the Apple III because the request was to do it for the Apple III first. And, sometimes it was a pain in the butt because, as Lotus felt, with assembly language you can only target one machine. We were requested to do it for all sorts of machines. The peak was when we did our layoff, which was around the same time you did a layoff.

Fylstra: Just about within a week of each other.

Bricklin: 1984, right. It was the same day, almost. You fired Terry the same day we had our layoff.

Aspray: What was VisiCorp's highest number of employees?

Fylstra: 300 and something.

Frankston: One part of the problem between our companies was a lot of personality issues and all, but because of the time factor today, I'd just like to state that we always viewed the VisiCalc product as integrated, from marketing through the whole design. One of the problems we had was that we were being cut off from the channel, the source of information. At the same time, which again goes back, sort of, to Terry's attitude, is we helped to do the DEC and all these other versions which we knew were pointless.

Licklider: Do you mean like the Sony?

Frankston: Like the Sony version. We had to spend our time and resources doing versions which we knew were not going to sell. And that was basically using the contract as a weapon.

Bricklin: Because the contract said that if they asked us to do a version we had to say yes or else we gave permission for them to be outsourced – it's all complicated. This gets into the lawyers thing. Because we were separated by distance, that mattered an awful lot. And, because of the "We control their external relationships, and we control the internal development" split, which is not uncommon even within a single company, it posed a problem. So, for example, when IBM came to us and said, "We want VisiCalc," we said, "We're really glad you want to come to VisiCalc. That's great. Go talk to VisiCorp."

Frankston: We technically had a 16-bit exception in the contract, but we chose to stay with the sense of the contract.

Bricklin: We decided to do it anyway because that was the clean thing to do, and we sent them on their way. We made sure that happened that way, and IBM was not happy about it because Terry was very difficult for them to deal with. They complained about him a lot, but that's a normal negotiating tactic on their part. He was asking things to be done like sign agreements that we didn't agree to, and then not do what the agreements were that we signed that we didn't agree to, which is really tough. Dealing with IBM is a really tough thing.

Factors in the Demise of VisiCalc

Bride: The discussion helps in terms of bringing everything into context and the idea that the movement between coasts certainly didn't help this relationship. The growth of the organization is 120 people here and 120 people there, apparently 117 of whom never communicated, in a way. How else did the chaotic nature of the hardware environment cause some of these problems?

Bricklin: Well, it caused our demise in many ways because we ended up being forced to go to a higher-level language. We had to, and Microsoft did the same thing, in order to be on all the different computers because nobody knew who was going to be the winner. We wanted to have the same type of commands so we didn't have to rewrite the documentation. What ended up happening was we moved to a higher-level language that we then ported to all the machines. Microsoft did it with MultiPlan and failed, too, because the MultiPlan language had a 64K maximum. The IBM PC had a maximum of 512K when we first came out because that's all the memory we were able to test with. It turned out there was a bug in 512K. Most people didn't know that, but it was true. It even says it on the box: It would run with up to 512K. That was because we had to be on so many different machines which had different processors and all, porting and making all the versions sort of forced us to have commonality in all different ways. Lotus started, I believe, writing in C, and then they went back and did it in assembly language and targeted a single machine; they were so wedded to the machine that they had a molded part. It came with the product that fit on the keyboard in a particular way.

Frankston: Lotus did ports, and those Lotus ports were terrible.

Bricklin: Yes, Lotus did ports that were generic, and they didn't do well, and that was submitted to Compaq, and Compaq defined what it meant to be IBM compatible, which meant you could use the same plastic insert and run the same software identically without modification, even though there was a different piece of hardware. That chaotic situation, not knowing who was going to be a winner at the time, was very difficult. The day the IBM PC was announced was the day we shipped the HP version, I think.

The CP/M version that we did for HP was the basis we used because, remember, MS-DOS is a clone, sort of, of CP/M. We were able to take that, mechanically convert it, and then manually tweak it to run on the 8088. From a development viewpoint—I don't know how much from a production and a documentation viewpoint—it was a pain in the neck when a lot of these versions only sold one copy. We ended up having to base our sales on guaranteed minimums from certain manufacturers. Look at the versions of VisiCalc that we were asked to do on a VisiCalc Advanced Version; how would you have done it for so many machines? We had a product that was basically equal to Lotus 1-2-3. Mitch, by the way, was a beta tester of VisiCalc Advanced Version, which shipped, I believe, before 1-2-3 and MultiPlan.

The other thing is that VisiCorp had already sort of gone on the VisiOn path, and Lotus 1-2-3 had basically won the spreadsheet battle sometime in 1983, and they were on the Softsel hot list in February, I think. They signed an exclusive with Softsel, and they were number one within a few months and held it ever since. Basically, in terms of vanilla-flavored spreadsheets for the next few years, the game was over for a while. But, at that point, the IBM PC also took off, and Compaq came in, which solidified the IBM PC because there wasn't going to be anything different. But, there were variations on the IBM PC, still thanks to Ben Rosen who was an investor in Lotus, Compaq, and VisiCorp.

Frankston: Remember that it took Microsoft a dozen years to get Windows to work.

Bricklin: I like to point out when we first announced VisiCalc, we ran the teaser ad of VisiCalc in *Byte* magazine, which was more brash than I would have been, but not brash enough in hindsight. Dan [Fylstra] was the marketer for that. TI was rumored to be entering the market at the time, and we were all terrified of TI, that they would shake up the market like crazy, like they did with other markets, and TI failed miserably—though some of the same group went off to start Compaq.

I have a question. It's clear that there was a problem. From what I understand, it sounds like there were poor communications between various people at your company with regards to our communications with them. I know that during the lawsuit, for example, I called up Hank and tried to see what we could do. He came back and said, "There's nothing you can do. You know, I can't do any more." Somebody else that we were involved with called Pitch Johnson, and he was told, "No, this lawsuit is going to go on." I can tell you, we were not planning a lawsuit. We had no plans whatsoever. I could tell you for a certainty.

Fylstra: Would you have blocked shipments of VisiCalc?

Bricklin: Well, we would never have done that because first of all, we couldn't have. All we could do after the fact is sue for the money that we were perhaps owed under our contract.

Frankston: We had the attitude toward lawsuits that we basically died doing them.

Bricklin: But that's not the thing. We were about to sell the company; we were within 48 hours of closing the deal to sell the company, and we were sued at that point. You had called me a week or two before. You did ask. You said, "Dan, do we really want to settle?" because by that time we had been negotiating forever, about selling rights and stuff. And I told you "We really do want to settle," and we did, too, because we didn't want to do anything to scuttle the deal. And, after the fact, we had people who made overtures to your board who were trying to settle because we were willing. We had cash, but the response that came back was, "How could you ever come up with the cash to pay us off?" And, of course, we had the cash.

Aspray: Who were you about to sell the company to?

Bricklin: We had a deal with a public company, H&R Block. We would have been part of CompuServe. In other words, some of the inventors of the Internet, like David Reed, would have worked for CompuServe. It was about to happen. This was in 1983. We definitely wanted to settle. I have talked to somebody who was an intern at Fenwick West at the time, during the preparation of the lawsuit, who said he was told that you wanted to break the contract, and you felt that the easiest way to break the contract was—you look at what the lawsuit was about. The lawsuit was about breaking the contract.

Fylstra: Dan, all I can tell you is I was there. I was certainly there in every board meeting and top-level management discussion of this whole issue.

Bricklin: And why did you choose to do what you did?

Fylstra: It's exactly as I wrote it here. There is no way that the lawsuit would have been filed had we not felt we had reason to feel you might sue to block shipments of VisiOn.

Bricklin: What evidence did you have?

Fylstra: We had this meeting, and I can't tell you who on VisiCorp side but I'm 100% certain that it was Tracy.

Bricklin: It had to be one of four people. I talked to someone who wasn't an officer. Tracy was an officer. There were only three or four officers it could have been.

Fylstra: I believe it was Tracy, in fact. But, anyway, I can tell you what happened inside VisiCorp. That's all I can do. And, the story is just like I told here. I mean, it was like a thermonuclear first strike to us.

Bricklin: But, we didn't officially say.

Fylstra: To us it was a specific credible threat, like, "We're going to do this. When you ship VisiOn (and we had a date for it), we're going to sue and then we're going to try to stop the shipment, and we're going to ask for --" I think you were asking for a 35.7% royalty, not just on VisiOn Calc but on VisiOn itself.

Frankston: I will say, though, that the fact that you were going to ship VisiOn Calc, and completely write us out of that was an issue.

Bricklin: But it was only one of three products.

Fylstra: Let me just check on this side. My understanding is that Rich Melman talked to you guys about this pretty early on and said, "We need a spreadsheet. We want to do VisiOn Calc. Will you write it for us?" and you said no.

Bricklin: No. I know that we would never—because of the way we were doing things—we would never turn down in writing a request to do a version of something, and we were waiting for that. We were waiting for a request. We were surprised when we weren't asked.

Frankston: No, we were surprised when we were told explicitly we would not be included.

Bricklin: We discussed it. Remember you told us you needed a VAX to develop, and I said that we were willing, that of course we could get a VAX. I mean, we had Prime, so we could certainly get a VAX.

Fylstra: I wasn't in the loop on this, I don't think.

Bricklin: Yes, we did talk. We talked about it, I think, at SoftCon in the spring.

Frankston: You know, as you're becoming a development company, when you have high royalties, the way to do it is to trade equity to come to an agreement. So, it seemed pretty straightforward that there was a way to do it. You didn't need these developed on the East Coast; you had the staff to do it all yourself. Why did you have to even pay these people?

Lessons Learned

Bride: We just have a couple of minutes, but Bill Aspray started with a question about you guys at Harvard. So, I want you to finish with this: Suppose we're going to be at Harvard tomorrow and you're talking to the whole graduate school and each of you had to give one

lesson learned from all of this. What would that be? What's the biggest lesson learned?

Fylstra: Learn all you can but trust your gut instincts; don't look to the experts. I think it was John Kennedy who said this: "All my life I knew better than to trust the experts."

Bricklin: What I tell them is you can't change the world.

Frankston: One of the lessons is: Don't confuse greed with stupidity.

