



## **Oral History of Wilfrid J. (Wil) Dixon and Linda Glassner**

Interviewed by:  
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## **Wilfrid J. (Wil) Dixon and Linda Glassner**

**Conducted by Luanne Johnson**

**Abstract:** In this interview, Wil Dixon, the founder of BMDP Software, and Linda Glassner, Sales and Marketing Manager, describe how the BMD statistical software was originally developed at UCLA and became broadly used throughout the world while still being distributed under the auspices of UCLA. In 1982, Dixon founded BMDP Software to begin marketing the software through a commercial enterprise and developed a version which ran on PCs, significantly increasing the market for the product. They discuss the differences between BMDP and competitive software such as SAS and SPSS and the evolution of their marketing strategy from word of mouth to advertising-based as the market changed and expanded.

### **Origin of the BMD Statistical Software Package**

**Wil Dixon:** We started with the BMD package about 1961. Our first release to the public at large was in '62 although we had gotten it in use already at UCLA. The National Institutes of Health, first the Cancer Institute and then, more broadly the National Institutes of Health, felt that medical research should get the benefits of computers. They funded three centers in the United States, one at MIT and one at Tulane, and the one at UCLA. The one at MIT was to be focused on the hardware side and Tulane focused on clinical research.

But at UCLA I was primarily focused on bringing the computer to the forefront of very general use within the research community. I think there was a feeling that medical research should not be handicapped by not having the analytical tools they needed. And so they funded the Health Sciences Computing Facility. And as soon as the package, or portions of it at least, were in use at UCLA, we started shipping it elsewhere as people heard about it. I'm trying to think when I

took out our first ad. It was probably only about five years ago. The first 15 years it was entirely by word of mouth.

**Luanne Johnson:** Oh, really?

**Dixon:** It spread around the world, used in almost every country. And it stayed in the public domain for a good many years. . I went to Sweden one time and it seemed like everybody in the country in the scientific field was using it.

**Linda Glassner:** I think that it was in the mid-'70s that it was shifted out of the public domain. I don't know the exact year.

**Dixon:** It was in '75, I think, that we put a copyright on it. Public domain was the way to get it out the fastest to everybody. But then NIH understood, I think, that if there wasn't some protection of the intellectual property of the developing organization that it couldn't survive when they withdrew their support. And so they withdrew their support in a gradual way. They started thinking in terms of charging nominal fees for it under a copyright. Finally support was entirely withdrawn as it was in all of the other centers where they had supported startup development. They expected us to be on our own.

And when we were on our own, we were going to charge fees. But we began charging fees before we started advertising. There seemed to be no difficulty based on that moderate scale.

So we were the first statistical package which got national and international acceptance. There probably were 100 packages in universities at the time and most of those eventually disappeared. When the founding individual was no longer there to answer the questions and hadn't done sufficient documentation, people weren't able to use it. So the documentation was important and we put that out early.

**Johnson:** By early you mean...

**Dixon:** Well, it was available in '62.

**Johnson:** So at that point you already had it documented with the intention that this was going to be used by somebody other than in your own facility. Where you were not going to be right there helping them use it.

**Dixon:** Certainly. And it was accepted very well very early. There were some early translations too to other languages such as German and Japanese.

### **BMD as an Early Off-the-shelf Software Product**

**Johnson:** Were you providing any kind of training or support initially when you delivered this? Or was this a true off-the-shelf product?

**Dixon:** That's right.

**Johnson:** Were you sending them source code or object code?

**Dixon:** There were no tutorials. People heard about it and wanted to try it and they found they could use it. So they continued using it. They told their friends about it.

**Glassner:** Were we sending out the source code or not? We were probably only sending the object code.

**Dixon:** We were sending it both ways. There was no restriction on anything. Anybody could have anything we had.

**Glassner:** All they really had to do was pay for the tape and the manual. They were paying I think \$80, not even that sometimes.

**Dixon:** Essentially the shipping costs, duplication costs.

**Johnson:** And this was still coming out of UCLA at this point?

### **Separation from UCLA**

**Dixon:** In fact, it stayed there a very long time. It stayed in UCLA after it became commercial software. I mean that users were paying for it although we were doing no advertising. So I don't know if you can call that commercial software but it was becoming self-sufficient financially.

It was only three years ago that we moved out from under the university. That was a transitional process because first we had to become financially independent. We've been advertising really only in the last five years.

The separation three years ago was one where we began doing our own financial planning and documentation. The university had handled that as a university function up to that point. But we've stayed tied to the university in that they have the copyright and receive royalties on sales of the software. And that will still be in effect for another year or two.

### **BMDP Implemented on PCs and Many Different Mainframes**

**Johnson:** Was it implemented on the personal computers while it was still at the university?

**Glassner:** No, we did that as soon as we moved down here.

**Dixon:** I started to do it almost at once. But it went very fast because structurally our programs turned out to be optimal for transfer to the PCs and that was an advantage we had over some of the other packages that had to convert their programs to different languages to run on PCs. Ours is the same on both mainframe and PC computers. That was a big advantage because a person going from one to the other has doesn't have to use a different manual or different codes.

**Johnson:** So at the present time you are now marketing this for mainframe computers and for the IBM PC and PC compatibles.

**Dixon:** Right.

**Johnson:** Only IBM mainframes or are there others?

**Glassner:** A whole list of them.

**Dixon:** That's a whole story too. Because if you wanted to be the most commercially successful, you should pick a market like IBM mainframe and tailor the software specifically for it. But while we were still supported by the federal government that was not permissible. They wanted everybody who had any kind of computer to be able to use it. So that took a

considerable amount of effort but it's now a great advantage because it's on practically every mainframe which is in use.

**Johnson:** What's the source language, Fortran?

**Dixon:** It's in Fortran.

**Johnson:** And what about on the PC?

**Dixon:** It's in Fortran.

**Johnson:** Fortran on the PC.

**Dixon:** It's the same code.

**Johnson:** Same code. Oh, that's fascinating.

**Dixon:** Of course, we could have made a decision to convert to one of the more modern languages. But staying with Fortran has made it possible to run it on I don't know how many different computers.

**Glassner:** It's quite a few. I can give you a list. But we run on IBM, DEC VAX, the HP machines -- I can't even think of them all -- Univac, almost all of them.

**Johnson:** Do you have to maintain different versions of it? I presume that the Fortran compilers are quite similar on those different computers. But how much file handling capability does it have? Is there a problem on the different computers with the different file handling methods?

**Dixon:** Well, perhaps it would be better to explain just how we approached it. Because first we just passed out the code to those who were familiar with the different machines and knowledgeable about them. And they would make whatever changes in the program they needed. But after a round or two of that it was clear that they needed to give input to us so that we could write code that required very few changes. So with that knowledge very little change is required for different computers.

**Glassner:** We have what we call conversion centers. Some of them are universities. Some of them are corporations. We have one for Perkin Elmer up in Canada which is a research institute. So there's quite a variety of different organizations that are converting our software so it can continue to run on these different machines.

**Dixon:** If you're listing machines, there are also foreign machines such as those many in Japan and elsewhere.

### **Customer Support, Upgrades and Enhancements**

**Johnson:** How many installations do you have out there at this point?

**Glassner:** I'd say we have about 2,500 right now. It's not easy to estimate because in addition to having conversion centers, we have distribution centers. So for some machines like the HP machines, we have a group up in Canada that licenses their own licensees. If someone has an HP, we'll refer them to this other group and they'll order directly from them. So we have, I'd say, about 2,500 mainframe and minicomputer sites. And about 15,000 people get our newsletter. So that gives you an idea of the number of users around the world.

**Johnson:** Do you provide upgrades?

**Dixon:** At least once a year, twice a year.

**Glassner:** There will be a 1986 release coming out sometime this summer. There was an '85 release last year. Then there was an '83 release, '81. It probably averages about every year and a half.

When you were first doing your research, did you find BMD in the literature as opposed to BMDP?

**Johnson:** The reference in the 1967 ICP quarterly was to BMD Biomedical Statistical Software. I believe in the ads that you're running now, at least in the ads that you're running in *PC World*, it's called BMDPC.

**Glassner:** Right. It's gotten to be longer and longer all the time.

**Dixon:** The biomedical terminology was the result of the funding source, NIH. And that's where we concentrated at first. But as soon as word of mouth got around, there were many orders from outside the biomedical environment and eventually most of them were not from biomedical organizations. Every oil company in the world wants a program of this type and most process manufacturing companies, certainly all the pharmaceutical world and so on. So then there was no reason to stress the biomedical basis of it because it was very broadly used. But on the other hand, the BMD initials have gotten so well established that we don't want to change them.

**Johnson:** Sure, of course. There's a lot of value in that name. Particularly when word of mouth is so important to your promotion of it.

**Glassner:** It started out being the BMD. People who know the package will call it the Biomed. It's kind of a nickname for it. And then the "P" was added because that was actually a whole new series of programs that came out in the mid-'70s. It was actually the BMD-P series. And there had been a BMD-X series, an experimental series and a "Q" series. But the "P" series is the one that caught on. And that's why we dropped the dash and it became BMDP.

**Dixon:** Yes, that's an interesting case in terms of what you're interested in. The programs in the '60s in general were written for each special application. The idea of a general package was really just emerging.

**Johnson:** Let me interrupt just a minute. Yesterday, I was interviewing Dr. Walter Bauer, who was a founder of Informatics. And he gave me some quotes from people from companies like Computer Usage Corporation who were making public statements in 1966, 1967 that there would never be such a thing as a software product.

**Glassner:** Really?

**Johnson:** Yes. They did not believe that computer programs could be generalized.

**Dixon:** They were really uninformed because it was already there. But the equipment itself wasn't developed enough to make it easy to move to generalized packages. And although we were fairly generalized, it was clear by the middle '70s that we needed to go much further. So we moved toward parameter-based specifications that allowed the user to define the analysis they wanted to do. It began to be distributed much more broadly after that.

## Naming Issues

**Glassner:** When we first came out with the PC products which was in August of 1984, we were trying to come up with a name for it. And decided to call it BMDPC. The only problem is I think it's gotten a little too long and a little confusing. So what you're probably going to start seeing from us is more BMD/PC. That's how the competitors are tending to do it. To show that it's really the same product but just...

**Johnson:** A different version.

**Glassner:** Because I know now people think BMDPC, what is that? I mean, for us it rolls right off our tongues. But other people trip over it. And I can't tell you how many magazines have misprinted it. In fact, even *Digital Review*. I was just looking at one of their issues and three out of four times they got BMDP wrong. They had BDMP. And I called the editor to tell her that. And she said, "What's wrong with it?" Because people don't know what it stands for anymore, they get confused.

**Dixon:** They do that on the phone and they're not even aware that they've transposed the letters.

**Glassner:** We try and avoid calling it a biomedical package. Because that ends up scaring off all the marketing people, all the psychologists, sociologists. They think they don't need a biomedical package. It's interesting because several of our competitors have names that are industry-specific like biomedical. One was the Statistical Package for Social Sciences known as SPSS. They don't want to be known as that either. Because that turns off all the people in the pharmaceutical industry. And then there's SAS. You've probably heard of SAS.

**Johnson:** Yes, I've heard of SAS and SPSS. Those are your major competitors?

**Glassner:** They have similar products. SAS [pronounced Sass] used to be called S.A.S. It stood for Statistical Analysis System. I was at their user group meeting recently and I heard someone say they don't want to be called S.A.S. They want to be called SAS because they don't want to be known as a statistical analysis system because they do other things. So I think we all started with these acronyms. And I think the acronyms are sometimes more trouble than they're worth at this point.

**Johnson:** Well, I'll just throw my personal experience in here. When I started a software company in 1971, I took over a company that I had been working for that went defunct. I wanted to change the name with a new identity and I wanted it to be a familiar word. I didn't want an acronym. And I came up with "Argonaut".

It starts with an "A." So it will get listed up at the front of everything. On the assumption that everybody who has had an education would know what an Argonaut is, I thought that it would be a familiar word. But that turned out not to be true at all.

I was just amazed for how many people the word "Argonaut" was not familiar. That completely surprised me. So, I guess you can go either way. The acronyms get you into trouble and sometimes...

**Glassner:** The others do also.

**Dixon:** It reminds me of one point. Every time I'd go to a meeting to justify the support from the government, I really had to stress the matter of quality and having the latest things available to people. It was not a mass market approach because general knowledge in the public of statistics 24 years ago was pretty limited. So we had sort of an elite audience to begin with. But there has been a tremendous change in the statistical literacy of the public as a whole. There are many more people able to appreciate and use a statistical package.

And that's the image that we really want, that we've worked to maintain. It means that we need to survey the literature continuously to see what the latest things are but we also need to establish a presence with the general public. There is certainly a greater sophistication among the users than there was ten years ago.

### **Intellectual Property Issues**

**Johnson:** You said that UCLA holds the copyright on it. How are you dealing these days with the issue that's such an important issue to the people in the PC software business, the whole issue of protection? Is that something that you are concerned about? Are you concerned about protecting the versions of it? Do you make a major effort to try to protect the code?

**Dixon:** Well, we make a major effort. I think the public as a general practice in the personal computer area doesn't have the respect for intellectual property rights as in the

mainframe area. I think, though, that since our audience being a more sophisticated, scientific group, we don't have the trouble that others do. The computer games people have a very big problem. And then you get into the spreadsheet area and there are estimates that you read in the literature about the fraction of them that they actually get paid for. But we don't have much evidence that things have fallen apart in that area. There seems to be a considerable amount of integrity as far as we can find out.

In a recent case where we found that an illegal copy had been made, we contacted the individual. There seemed to be all sorts of remorse, guilty feelings. So I think we're not facing a problem that the others are at the present time. I don't know what the future will hold.

**Glassner:** We're probably a little more conservative than some other companies. We won't ship software until we have a signed license agreement.

**Johnson:** So even with your PC users you have a direct contract with every user.

**Dixon:** That's right. We do not put it out through the computer stores.

**Johnson:** That helps a lot.

### **Interaction with Users**

**Glassner:** And also in terms of support, the majority of people who use the software will call at one time or another and want customer support. They'll want to know which program should they use. We don't go too much into consulting or customer support but we'll go a certain way with them. And we just recently started up a separate consulting firm. So if people do want help in designing studies or they really need in-depth training, we can now provide those services also.

**Johnson:** What about telephone support? Is that provided just automatically? Or do you charge for that?

**Dixon:** That's automatic.

**Johnson:** Automatic. So if I buy a copy of your product for my PC and I have a question about it, I can just call you up and I'm going to get an answer.

**Dixon:** If you make it interesting enough on the phone, you'll probably get all your money back.

**Glassner:** We do provide free support. We have a department that's called customer support and quality control. And the nice thing about combining those is that the same people that are talking with the customers are testing the software and vice versa. So they become familiar with all the different options. And then they can talk more easily with people in the business.

If a customer has a problem or something they'd like changed, we also get that feedback. So it really helps to stay in touch. And I think that's one reason we don't have as much trouble with people copying our software. Because people sooner or later are going to want the support and they'll call. And I don't think most people would call unless they know they have a legitimate copy.

**Dixon:** With some we encourage more contact with us because we want always to improve the package. And some of them are really pretty sophisticated analytical professionals.

**Johnson:** So your sophisticated customer base provides you with a lot of input as to what the package needs.

**Dixon:** That's right. There's sort of a statistical basis of monitoring this. If a particular area starts having telephone queries, then we know we need to do something to improve the functioning of the program.

Our colleagues from the American Statistical Association people come up with helpful comments. Have you ever thought about doing this? And it would be a lot better if I were able to do this and so on. Most of it comes, fortunately, from a fairly helpful attitude. They know we've been around a long time and that we have made improvements. And I think we've given them the impression that in talking to us there's some hope that what they want will be done.

**Johnson:** It probably reflects the quality of the product in the first place, too. It's constructive criticism because they're essentially happy with what they've got. And they'd just like to see some additional things working in it.

You don't have a user group per se I take it. You work through the American Statistical Association where you have sort of a built-in user group.

**Dixon:** Right. Our Irish office, I think, may have organized a user group.

**Johnson:** Do you work primarily through representatives overseas? Or do you establish your own offices over there?

**Dixon:** Well, we had several representatives in earlier years. What it really was, was a professor at another university who was interested in it. But we now have an Irish office which is making personal contact with a lot of the European customers. I think perhaps if we'd been in the Eastern time zone it wouldn't have been so necessary. But with the eight or nine hour time difference there's no way we can provide timely support.

**Johnson:** Sure. So I gather that through your conversion centers and your redistributors, you've got your marketing focused very internationally. But other than conversion, what about all the developments and the enhancements? Is that all done here? And is customer support all done from here?

**Glassner:** Well, we have our customer support department here.

Also the office in Ireland is also doing customer support. We only opened that office about a year ago. So they've been on a learning curve. And what they've been really trying to do is reach all of our users in Europe and say, hey, we're now here and we can serve you. They'll probably get more involved in development over the years. But one thing that's real nice is we're still a small company. We have about 50 people on site here. But through our connections with UCLA, and mostly through Dr. Dixon's connections, there's still a lot of input and development being done by other people. We have an advisory committee made up of professors at UCLA. And there are people around the country that have at different times been involved directly. They were at UCLA working on the project and now they've gone elsewhere. They're heading up departments. And we still get input from them also. So the development is centered here but it gets input from many different places, many different areas.

### **Marketing in a Commercial Versus a University Environment**

**Johnson:** The thing that I find striking about the things that you're telling me is that there was a clear concept with BMD of what a software product is. Wil mentioned the cases of the programs that were written and then just disappeared when the founder no longer was involved. That's my idea of how things typically tend to happen in the university environment, that nobody understands the productization of a computer program.

But I gather what you're saying is that productization took place with this particular product very early on. While it was still very much embedded within the university structure. So that there wasn't a major transition when it became a commercial entity.

**Dixon:** It probably was because there was such a demand for it from so many different people. Also the federal support meant that we had the responsibility to do that. The community could be expected to get it if we could ship it to them. The federal support was based on that.

**Johnson:** Sure. Was there a transition though perhaps in quality or degree of that productization? When I think of a software product, I think of it as including not just a set of code but the documentation, the support, the training, all of that is what constitutes the product. Was there a difference in terms of degree, in terms of emphasis on that after it became commercial?

**Glassner:** Let me answer that one because I was at the university with him for a few years before we actually moved. What I've seen is that the main difference has been in marketing. The product had already been around for 15 or 20 years. Documentation had already been through ten revisions. They were just starting to do brochures which were being produced by UCLA's art production department. They started to charge for it before we left the University. They started charging annual license fees. They started a newsletter in 1974.

So everything had been started probably a good five to ten years before we left the university. The difference was that there was no marketing being done, or very, very little, except towards the very end. We started going to one or two conventions a year. We'd go to the American Statistical Association meetings. But there was just no feeling that it had to be marketed.

People would just call. When I first started there, I was answering the phone and people would call because they had heard about it and they wanted to know how they could get it. The extent of our marketing was to send them a license agreement and then they sent it back. We didn't have to go out and say, hey, we've got this product. You need to get it in order to satisfy all of your...

**Johnson:** You didn't have to find them, they found you.

**Glassner:** Right.

**Dixon:** And they had this telephone contact from the beginning. Although we didn't have very many people, almost everybody working with the package was on the phone with somebody at some time. So there was plenty of input to us. So I don't think it was at any point that some radical change took place. We just continued to do what we had been doing.

I suppose our initial marketing was various members of the staff attending scientific meetings so people became aware of what we were doing. But their presentations were on the program rather than our having a booth where we were promoting the package in the more traditional way.

### **Competitive Products**

**Johnson:** Being embedded in the university environment and then moving out, was that true of your competitors, too?

**Dixon:** SAS started out of a package which was written at North Carolina State. And they moved out quite quickly. The three individuals who were involved with it started a company to distribute the software. Then a few years later two of them separated from it.

So it had that origin. But then it was staffed mostly with technical people expanding the technical program and changing the focus. So it isn't a purely statistical package, as Linda pointed out. It has to do more with general commercial support, although it has a statistical origin.

SPSS, which was focused on the social sciences, was an adaptation of the public domain package of ours which they modified to be better for the social sciences. That was done at Stanford so it was in a university environment. And then it was moved to Chicago and eventually separated from the university. I don't know the details of how they separated from the university. But it was a quite a bit later.

**Glassner:** P-STAT, is the P for Princeton?

**Dixon:** P is for Princeton. They felt that there were particular needs in the field of psychology. So at Princeton they developed that within the university. The developer was an employee of the computer facility. I don't know if he was actually in the psychology department or not. But anyway, he developed a program which found a niche and he's continued to

develop that. I don't know how large his company is now. It's always been very small. He and his wife work at it.

**Glassner:** And their daughter is the director of marketing. And when you go to a show the three of them are there. They're great people. They're a lot of fun. They get a lot done.

**Dixon:** So generally people think there are three main packages, SAS, SPSS, and BMDP, and then others down the line, in terms of size especially. P-STAT is one that's been there the longest.

**Johnson:** Very interesting. I think I've run out of questions. But if there's any other comments you'd like to make, I'd welcome them.

**Glassner:** I think one of the interesting things that we didn't bring up is that we were running on a microcomputer before we started running on the PCs. This was something that I would not call a commercial success because we probably didn't make any money on it at all. But before you were able to run on a PC with all these statistical programs, we looked into running on a microcomputer, a Motorola 68000 based, very powerful, super micro.

We were actually doing that when we made the transition from the university in June of 1982. At that time none of these other major packages were running on the PCs. And so it was a real advantage to be able to start offering microcomputer software. And then in the past couple of years, it's been amazing how many competitors have just popped up. If you've seen the review articles, sometimes there's as many as 150 or 200 mentioned.

**Johnson:** This is strictly in the micro area?

**Glassner:** Right. And a lot of those have now dropped out. We're seeing a curve that you'd expect when there's a lot of new start-ups very suddenly. What those packages tended to offer would be one program. They'd offer analysis of variance. Or a regression package. Whereas if you talk about BMDP and our main competitors there's the full spectrum of statistics. And I think that's why all of us have continued to exist is because we offer so many different things. So if you go into a pharmaceutical company or an insurance company, some people might use a couple of the programs. But then other people can use other programs.

That's why I like to call it a package. Instead of calling BMDP a program, call it a package with 40 different programs. And a lot of the competitors really offer only one program. They'll do

one thing. It will do it inexpensively and quickly and it's real easy to use. But you just won't find the depth in most packages.

**Dixon:** Some users buy one of the cheaper ones and then find they need more features and so they upgrade to a more complete package.

**Johnson:** That's a pattern that I found really quite common in dealing with the accounting software. We often got users who had bought a very inexpensive package and used that to figure out what it was they really wanted to do. And then upgraded to a more complete product like ours.

**Dixon:** I think there is one difference between ours and the others which I think means that it's easier for us to stay ahead in new developments. We have a number of actual statistical researchers, professors and so on working with us. We have an advisory group which is made up of UCLA professors. We've maintained our contacts at that level and appearing at the meetings gave the product a lot of attention. It was very heart warming to have some of the leaders in the field get up and say, "I was just down at the display booth and I saw something which is a real indication of the way things are going in the future. BMDP is already demonstrating the wave of the future." That's very nice from people who aren't paid to talk for us.

But I think it comes from our continuing to have those people directly involved. The others don't get that kind of input from people who are top-level professionals in the field.

**Johnson:** One of the things that I'm trying to do with this project is identify the first company that was created specifically to sell software products. To find the point at which it became possible to conceive of a sufficient market for software products so that companies were formed to go after that market. The early products that were out there were products created by companies that were in consulting businesses, custom programming businesses and so on. I haven't yet identified the first company that was formed specifically as a software products company.

**Dixon:** It depends on how you define company. In some sense, we were a company before we left the university. We were a cost center. That might be true of some of the others, as well. I suppose it would have to be at least largely self-supporting and identifiable as a group and so on.

**Johnson:** I think the marketing orientation is an important part of it,too. The fact that they started out with a marketing strategy of some kind for marketing a software product.

**Glassner:** And doing it to make money not to provide a service.

**Johnson:** Yes. I think the lines will be blurry, as it is with anything which is evolutionary.

**Dixon:** I don't know the other fields as well as I know the statistical one. I'm trying to think of when the advertisements began to come out in the statistical software field. I think SAS, SPSS started advertising perhaps about the same time we did but not much before. And then as soon as those ads started there were all sorts of other ads, too.

**Glassner:** That's where we got the idea.

**Dixon:** I guess if I were trying to do that I would go to the library and look at some of the early places where the ads might be.

**Johnson:** I have a list of about 10 or 12 people who were out there in the late '60s, early '70s. One of them will lead me to it.

Thank you both so much. I really appreciate your taking the time to fill me in on BMDP.