INTERVIEW WITH ANDY KNOWLES AT KNOWLES RESIDENCE IN

BOLTON, MA

INTERVIEWER, JAMIE PEARSON, DIGITAL

JP: Could you start by giving me some background about

yourself, where you were born, how educated, where

educated and your first job.

AK: I was born in Springfield [Massachusetts]. I grew up

in West Holyoke and went to Holyoke High School and then

to U.Mass. [I got] a EE degree in electronics in 1957. I

started my career in the Air Force as a ROTC and I was a

first lieutenant when I got out. [I was] hired at RCA as

an applications engineer in their semiconductor [group]

in Somerville, New Jersey. I spent a year at that and

then went out to the midwest as a sales manager in

Indianapolis in consumer electronics. Another reason I'm

in the computer business is [that] a guy died in Boston

at 35 years old, just dropped dead of a heart attack and

they wanted an engineeering leader and I wanted to get

back to the Boston area so I joined Memory Products in

'63 with RCA. Then I grew up to be the engineering

manager for the memory products division.

When DEC called me in middle of '69, [Edson] deCastro was

gone, and the whole 16-bit effort was in disarray. They had hired an engineering guy from Honeywell, Roger Cady, and were in the process of hiring [Julius] Marcus. I spent from October through November interviewing. I went up there [to Maynard] three times. I must have seen Ted Johnson [VP, Sales] three times and Nick [Mazzarese] four times. Finally in mid-November they made me an offer and I started as the PDP-11 product line manager December 1st, 1969.

JP: Let me back up a little bit. You [mentioned] the RCA memory products. Did you have a lot to do with Digital getting in the core memory business in Taiwan?

AK: Yeah, yeah, yeah. I got a call late in the day on a Friday in '71 from Julius Koppelman who was then the controller for RCA's computer division. I called Henry Lemaire, who was an old friend, and said we'd like to pull the memory products division into the DEC fold, and asked how we'd do that. Then I got [Ed] Schwartz [VP, DEC Legal Counsel] involved and we bought [it] from them and moved it to Natick with Henry in charge. As part of the division we picked up Taiwan. I was the engineering manager for that group, and so I knew everybody. We left the general manager there, Steve Marcey, and brought Henry over, God rest his soul. Henry had a history of heart problems in the family. His grandfather died at 52,

his father at 51, and he died at 52. It's hereditary and he couldn't do anything about it. He had had his first heart attack in '69 when I was still there. So we pulled the memory products in--there's still people from the memory products group in the company, Joe Cosgrove...

[SHOWING COLLECTION OF CORE MEMORY MEMORABILIA]

This is the smallest [core] they made, it was a 14 x 8 [mil]. You have to understand that I'm expert in that because I did design those things, that was my job, you know, I know core memories as good as anybody in the country.

One of the reasons I was at DEC was I was the engineering manager calling on them trying to sell them core memories with the sales guy. And we did get the eleven, I mean RCA did get the eleven. One thing Ken never knew -- he might know -- is that we had the business at Data General and we sold them cores without upper management knowing and DeCastro lived in terror of Ken finding out and shutting him off [CHUCKLING].

JP: Joe Cosgrove and Dick Yen said that the technology used to develop these [core memories] was then transferred to the heads business.

AK: Yeah, yeah, same stuff. That's an H-200 which was Honeywell's main success before IBM came out with the 360 which knocked everybody backwards.

So, I go back to that division. Henry Lemaire, Joe Cosgrove and I brought them into DEC because I had been gone for two years when the memory products division was under Marlboro. So I knew a lot of the guys and gals in Marlboro and I was instrumental in buying Marlboro, getting Schwartz and Koppelman together. They got along very well; it was a couple of Jewish negotiators, you know, as I call Ed. They got along swimmingly and Ed, of course, subsequent to that, got a real good deal for the building and the tower [buildings in the now-Digital complex in Marlboro, known as MRO1 and MRO2]. $13.8 million --I have downstairs somewhere the original announcement of RCA going into the business there, amazing.

JP: You came from RCA, which from everything I've read and heard had a very different atmosphere for employees than Digital. What was the biggest --

AK: RCA made a transition from the time I started there til the time I left. When I joined them [in 1960] Sarnoff(?) was still in command, the old, the original entrepreneur and it was an engineering-oriented company.

It was slanted that way and it became kind of a
conglomerate over the years and the outsiders that they
brought in weren't very good and so it changed. They were
very formal. Everybody had a parking space from the
management up...vice presidents drove around in
limousines and flew around in airplanes and it was a
stiff organization, it was a traditional American
business...Four levels of cafeteria, you know, the peons,
the managements, the upper management and then the
executives. They had keys to the washroom just like the
play, if you've ever seen "How To Success in Business",
that was the RCA style. There was a pecking order and
you stayed within the pecking and they tried to promote
from within but a very formal, very formal organization.
Formal reviews, they'd even go to the point where they'd
brainwash you. The reason I say that, is in the mid '60s
the [Viet] Nam thing was coming on hard and they had a
couple of management meetings where they brought Harrison
Salisbury and that crowd to the management meeting to
speak at dinner at night to convince you that Vietnam was
a good thing. They had NBC so they had the propaganda
machine working in the management and it was an
interesting experience. You learned how to cope and you
learned how to manage it, but by 1969 from my point of
view the handwriting was on the wall: they weren't going
to make it. I said to my boss when I left, "I'll see you
in a couple of years, you're not going to be around,

you're going to be looking for a job." That was '69 and they went out in September of '71, and left that empty palace as I called it. The original plan for the tower was to make it 12 stories so that you could see Boston. They actually had a helicopter.

JP: The first time I was sent to the "tower," people were calling it the "tower," so I was looking for a tower. I didn't expect this sort of squat bronze thing.

AK: Well, it was six stories. It was cut off at six stories when they ran out of money.

JP: So, coming from RCA you walked into this mill [Digital's HQ in Maynard, MA] that was kind of a rat trap ...

AK: Yeah, Maryanne, Nick's secretary, I don't remember what her married name is, but she was about 5'11" and she met me at 5-4 and my office was going to be in front of 2 working for Nick. She picked me up after personnel debriefed me, [that] took all of 20 minutes, it was a cold December day. A funny story. I don't know if the guy's still there, but it was a cold weekend, and one of the guys in PR on 5-2 was actually growing an alligator in the mill. He had an alligator in his office, I'm not kidding. Steve Kallis, I don't know if you ever --

JP: Yes, oh sure, I know him.

AK: Well it got cold in the mill, the power failed and
the alligator died.   So I'm walking across the parking
lot and Steve's buried the alligator on the side of the
hill by 5-2. Ask him about his alligator [CHUCKLING].
Culturally, that was the shock, see, and he's blowing
taps at 8 o'clock in the morning for his alligator that
he just buried. Now this is my entrance.   So, Maryanne
picks me up and we go down to the office and there's a
desk and a chair and a table and nothing else, no
telephone, nothing else.   She says, "You're product line
manager, now you figure out what to do."   So I said, "Hey
come here, what's the pecking order on secretaries, who's
next in line, I want to talk to her."   Sure as heck, they
come up with Shirley. Shirley stayed with me for eleven
years.   Shirley Cote, it was Shirley Pool then.   She had
been working over at field service. But there was a
pecking order, and there was a culture, and everybody
knew who was in line, and there were only a little under
2,000 people, and everything was in the mill.   And it was
fun, it was fun. The mill wasn't air conditioned; the
PDP-11 group used to hide in Nick's conference room which
was air conditioned and they'd lock the door and keep
everybody out.   It was different.

JP: You were brought on to engineer the PDP-11 product, market it and introduce it in under a year.

AK: Yeah, yeah, we did it.

JP: How'd you manage?

AK: Well, we finished the design in December, announced it January 5th, we shipped the first one by March 31st to an outfit in Florida called CMC, Computer--no, no, in California, we shipped serial #2 to radiation.

JP: That's right.

AK: Right. And we got the two of them out and we started building them and everybody was working about 80 or 90 hours a week. I moved to Acton from Needham. And it was a grunt. Some of it was fun, I mean most of it was fun. Advertising was hokey, I don't know if you've ever seen any of that. [SHOWS PDP-11 AD] "Family Planning," we used an actual stork, we got a stuffed stork in the ad agency. Isn't that gross?

[BOTH CHUCKLING]

JP: [Members of the original 11 development team got together last November] and they said that if they met

the same challenge today they could never have made it
because of the levels of politics.

AK: Bureaucracy.

JP: Somehow you must have acted as the protector of this
team and kept them buffered from people who wanted to get
in the way?

AK: Yeah, it was an interesting process, as I said to
the guys that wrote the book, they wrote it down
accurately. [Glenn] Rifkin was out [to interview] you
know. [Reference is to Rifkin and Harrar book on Ken
Olsen, The Ultimate Entrepreneur] The first budget
session I had was with Nick and the Operations Committee.
It was a $3 million budget for engineering and marketing
which was unheard of at that point in time within the
company, but we had to get everything done in a year. So
Nick said, "Look, the Operations Committee meets at 8:30
in the morning, they usually go to lunch. I'll schedule
you at 11:30, you go in and just mention Data General and
DeCastro and they'll get into a big fight about whether
or not he's going to win, lose, fail, they'll forget
about the budget, they'll get hungry at noon, they'll
throw you out and just assume the budget's approved, you
won't even discuss it." And that's exactly what happened.

JP: Really?

AK: That's exactly what happened. We went in, mentioned
Data General and everybody got into a big fight, Ken got
all bent out of shape, Stan [Olsen] was running around
the room and Nick led the argument and we never discussed
the budget.   So we went back and we assumed it was
approved.   And that's the way they operated.   They
wouldn't really discuss strategic things, it was were the
parking lot spaces done in Building Five, and [CHUCKLES]
what they were going to do for the town.   It was an
interesting bunch, it was crazy, Pete Kauffman.   I
understand he's consulting. Leroy Saylor works for Smith.
[Has since left the company]. Saylor is a dear friend, I
ran into him in the airport on the way to Florida the
other day and he said that Peter is consulting. You ought
to talk to Peter, he was a big part of the culture.   He
set up all the manufacturing plants and what have you.
But Leroy said he's consulting and he's back around here.

JP: You mentioned Glenn Rifkin's book. What did you
think of it?

AK: About 90 percent I think, it was pretty good.   I
think it's fairly accurate historically, I think it
describes the people pretty well.   I haven't read the
follow-up, I understand he's extended it to last year.

The paperback has new material in there.

JP: It was kind of interesting and I suspect that it was, like you say, probably 90 percent accurate. I think the thing that it missed was putting Digital in the larger context of the industry which is what I hope we can do at some point as a company.

AK: Yeah, well Digital unfortunately has a history of missed opportunities, which is part of the history, too, which people are reluctant to admit. But that's life.

JP: Do you think Digital has a unique culture? I read in the book that you had said Ken maintained a company that was for the people and by the people, that you'll never find anything at Digital that smacks of anything illegal, immoral or irrational. That comes from the man.

AK: That comes right from him [Ken Olsen], right.

JP: Do you think that Ken is the holder of the culture?

AK: He's certainly the purveyor of the culture, I think he maintained--there's a story that I tell. We had Morita [Chairman of SONY Corporation] coming over from Japan to visit. He flies into New York with his jet and comes up to Hanscom, we pick him up in a helicopter, we

bring him over to PK-2 [Parker Street, Maynard] or
wherever the helicopter pad is, and we put him in the old
Ford vans. So Ken and I are standing in the front of the
[Mill] building 12 and the van pulls up and Ken reaches
for the door and the driver rolls down the window, looks
out at Ken, Morita's sitting there, and says "that door's
just like brother, Ken, it won't work." [BOTH LAUGHING].
So what does the guy do? It doesn't faze him, he gets
around the other side, we get Morita out. The next day
he's down at Anderson Ford, he shows up at 7:30, 8
o'clock, whenever they open in the morning, looking for
Anderson. He buys ten vans, says "replace all those."
[BOTH CHUCKLING]. And that's, he's the purveyor of the
culture, the no-parking-space although they do have them,
the one cafeteria, the informality in terms of names,
everybody was always on a first name basis and that was
kind of my style so I enjoyed the change.

I think he also led the environmental thing when I had
advertising and PR with Dick Berube. [FORMER ADV/PR MGR
AT DIGITAL.] [DICK] Worked for me and we were having a
squabble with the state about the level of pollution we
were putting in the Assabet River and the limit was a
half a part of copper per million and we were 7 tenths,
so the local paper was going to make a big expose about
that and they called up Ken and he referred them to
Berube. Berube says "I suggest they don't eat any of the

swordfish out of the Assabet River" to the local paper and that diffused the whole thing. [BOTH CHUCKLING] But that's the kind of style that people were, you know it was informal, but communicative.

JP: Do you think that came from the MIT/academic/learning tradition?

AK: Yeah, I think some of it, Ken will tell you, came from his experience one summer at IBM. This was in the '50s when he went to Poughkeepsie and all the gray flannel suits and white shirts and everybody was over 6 feet tall if you were in sales. He didn't like that at all. So he decided with his company you didn't have to wear a gray flannel suit every day to work, that your hours didn't have to be as strict, and that he wanted a different culture than the traditional RCA, General Motors. See, in my era, I think my age group was now coming into power within the corporate structure, especially the guys I went to college with, are changing all that. I went to college with Jack Welsh, he's changed GE culturally completely. Dick Mahoney at Monsanto. One of our guys just got elected vice chairman of the board of General Motors yesterday, he'll change that completely. He's in an age group; the '30s and '40s people are a lot stiffer for some reason than the '50s and '60s people. So I think he'll get that age group.

I think Ken comes kind of out of that, the '50s group,
we're a little bit less, less, less _____ than the '40s
It certainly didn't come from that Harvard crowd he hangs
around with, Vern Alden and the General [Georges Doriot],
they're still as stiff as ever. And I say that sincerely
because they are, they come with that, you know, that
cultural thing. So he changed it and I think he was the
purveyor and I think he gathered people around him like
Nick and Pete who really enjoyed the informal style.
Peter certainly was not. Then that he hired people like
[Tom Stockebrand], I mean, how loosey-goosey can you get!
And I say that about him [Stockebrand] because he worked
for me and we stayed close, we stayed close, we really
did.

JP: Getting back to the PDP-11, I want to explore some
more things about that. I was doing the family tree for
that yesterday and there are three distinct ranges, the
low, medium and high end, and this is a product line
that's continued and been successful for 20 years. What
do you attribute for 20 years of the same computer
family?

AK: Well, I think you get at least 15 years out of an
architecture if it's good, if it's leadership. And a lot
of the stuff that we tried to do was to promote that.
See, this is hokey, but it was necessary to build on a

family and in '70 when we were struggling to do this, we threatened a 32-bit machine and it didn't architecturally happen for another five or six years, but we were threatening the family all along and we were telling people that we were going to extend the address base like we did on the 11/45 and 11/70 and they were going to be smaller, cheaper machines and larger faster machines. So we kept that going in that sense. So you're trying to build an image. We won the industrial award in '70 for one of the best 100 products. We literally stuffed the Unibus down everybody's throat because we didn't have software. This is the first software ad and this was done in '71. [SHOWING AD] DOS, it was a miserable piece of work. I mean it was awful. [CHUCKLES]

JP: How involved was Gordon [BELL, ex-VP ENGINEERING] on the PDP-11 architecture?

AK: In and out, in and out. I mean we stole the stack from Burroughs and the Unibus idea came out of the Apollo Guidance Computer [which] had a unified bus synchronism. The general registers were pretty much Gordon's. The Unibus, it's hard to peg that as to who really invented... Before I got there the design got thrown out, the desk calculator model, DCM as they call it. And back to square one. Then in December we had to scramble to get the job done, but the whole notion here was to build the

family over the years and we figured we'd get 10, 15
years. Once the LSI thing hit that kind of extended the
whole deal. But image-wise, it was built up over the
years to be the leader in the minicomputer field and it
became that.

JP: Well the PDP-11 marketing group tells me that
there's 600,000 11's installed.

AK: Oh, I would bet that's true, yeah, if you count all
the LSI stuff sure. I obviously lost track of it. See
what happened is that in '72 Nicoleff(?)--if you want
lists of things and people this is pretty thorough who
the people were and what they did.

AK: And [Jay] Forrester was off the board, they had been
fighting, they had had the Chinese coup as they call it.

JP: Why did they call it that?

AK: Because there was a movement by Forrester to oust
Ken and he didn't get the support from the board and so
Ken booted the guys who were voting against him off the
board.

JP: You mentioned something earlier about a desk
calculator model. Was that an early precursor to the

whole PC idea?

AK: No, it was an early 16-bit computer in the same

_____.

JP: The whole PC effort at Digital took a long time to percolate and then it sort of --

AK: Fizzled.

JP: Fizzled.   How was that connected to your roles at Digital? First you came on with the PDP-11, then you did components, then you were made vice president of corporate marketing and then you handled the personal computers.   Do I have that right, the four roles?

AK: Yeah.

JP: We haven't explored the corporate marketing thing. How'd you get that job?

AK: Corporate marketing, '78. Ken had this notion that he was going to consolidate some functions. The components group was up and running, everything was in high volume -- LSI, LA36, VT100 -- the thing was making all kinds of money. And I have an attention span of about four years in a job, four to five years.

JP: And you had started that [components] group?

AK: Right, I started it with just Shirley and I in the tower.

JP: Recognizing the need for --

AK: Printers and tubes and LSI. And we started it--really the proposal was made in December to February of '73 -- and at that time I was VP of all small computers in the company. I had the PDP-8, I had four market groups of PDP-11, [Dick] Clayton worked for me, Bill Long, Ed Kramer, Al Deveau, Bill Hogan, and we could see the need for a replacement for teletype. Teletypes were 100 hour mean time between failure. They weren't very reliable and it was driving service crazy. So we went to go for computer terminal called the LA-30 and -36 and propose a complements group to unbundle them completely and sell them in volume at just point pricing as opposed to discounting what have you. I hired Al Michaels to be marketing manager which is interesting. He and I lasted about a year, but we had the notion of VT-100 and then we saw the LSI coming, and we put enough power in the VT-100 to put a disk drive in there and a PC. We did the PDT as part of that group, the Program Data Terminal. We called it a Program Data Terminal

because we couldn't call it a personal computer because
Ken was convinced there was no such thing as a personal
computer. That's a truism and a lot of people will verify
that. We wouldn't give, for some reason, and I never
knew it, I never, never knew it, but we wouldn't lend or
sell a PDT to Dan Brickland. Brickland did Visicalc on an
Apple. And if he had done Visicalc on a PDT, Apple would
have been history, it would never have existed. So all
that was going on. You know, the whole notion of the PC
was there before Apple started, because we had the
components to do it, we just wouldn't do it. Then we did
a GT-40 in the LDP group, which was a graphics terminal.
And VAX got in trouble, and they stole all of the
engineers, and that died. And then all the engineers
that had worked on it got mad from Masscomp and then the
thing as a workstation, Bernie [Lacroute] and Carol
[Barts] and that crowd left in '82 or '83 to go up to
Sun [Microsystems].

AK: I had hired Barts. We were on a big female kick
then, we wanted to get a lot of females into the company
and the only way we could do it was to start a lot of the
young gals in sales, and by "young", I mean late 20s. So
we hired Lynn Berg in Portland, we hired Carol in
terminal sales in Atlanta, and we hired Sasha Adrian in
Boston and they were all part of the terminals LSI
specialists group. They've done okay.

The whole notion of a PC was there all through the '70s.
Before Apple got going, we had all the components to do
it, we just didn't do it.

JP: Because Ken didn't believe in it?

AK: He didn't believe in it and we couldn't get the PDT
accepted within the company. We sold quite a few of them
to ADP. Everybody was saying, "Hey, we've got to do time
sharing, timesharing's going to be here forever, we've
got enough timesharing on the PDP-11, why do you have to
do something else personal."

JP: Let me ask a question. If Ken did not believe in the
PC, then why, when Digital entered the market, they did
it with three? Why wouldn't it have been better from a
management perspective to put all the eggs and talent
into one?

AK: Well, [CHUCKLES] I wanted to do two. I didn't what
to do the eight-based product, so I would have killed the
DECmate at that point in time. It was too narrow. It
could only word process. You couldn't do any spreadsheets
or anything on it. And I wouldn't have done the Rainbow
other than we got mad at what they were doing in Maynard
with the closed loop -11 and Avram [Miller] wasn't

talking to anybody. The proposal that I made way back in
'79 or '80 was to do an LSI-11-based VT-100 with
associated eight inch floppies and then extend the family
to 32 bits as the VAX came in. That would have been the
two. So we would have entered with an eleven with RT-11
and theoretically a spreadsheet and word processing and
what have you. That goes way back, I was still in the
technical group.

Then we tried the gin up one in the technical group
called Gigi and we just didn't have the engineering
resources to do that, they were all over in central
engineering.

We were going to do a straight LSI-11, Q-Bus extended,
plug into the Q-Bus, use RT-11, don't do the new software
that never worked. So we wouldn't have done that at all,
I was dead set against it. That's historically documented
pretty well.

The fight was going on in '80 internally, that was where
we lost the fight and somehow they convinced me to go
over and manage what I didn't want to do. So we
bootlegged the Rainbow, we did that under Barry James
Folsom. The only reason we did that is because we didn't
think that the PRO would do anything and it didn't.
[CHUCKLES]. I think they sold four times as many

Rainbows as they did Pros.

JP: That was a tough time for the company and a tough time for the company's image in the press, too.

AK: Yeah, yeah it was tough. And that's the time the migration of everybody that I thought was fairly talented left within a space of about a year.

JP: Organizationally, that also the time when Ken made the three management centers?

AK: Yeah, around that time, '83, '84.

JP: That was another big change, like the product line shift?

AK: Yeah, yeah.

JP: And why did people leave? The power centers all shifted and people didn't feel opportunities were there?

AK: I think that at one point in time they consolidated all the bottom end; Irwin Jacobs, who's on his way to work for Sandy Kersig at ASK, he's going to be VP of sales and marketing. I had Jake in word processing. They moved Barry Cioffi up from Phoenix. Jake left, they

pulled the stores out from under me and the word
processing, because I didn't believe in either one of
them. The stores were just competing with the
Computerland and Businessland and it didn't make any
sense. We would put up a store next to Computerland in
downtown Boston and piss off everybody in the business
right? So everybody started leaving. Jake was about the
first and I think [Julius] Marcus was about the last to
go. Then the craze for PCs started: IBM announced their
thing, and then the workstation thing got going and that
took a lot of the people, Masscomp, Sun. And there was
money to be made and things to be done. One of the
things that I regret is I didn't take the Sun job. They
offered me the Sun job way way back and I advised Bernie
to go. And I remember having dinner with Carol out here
at Landlord Ben's and she was making up her mind to go.
It was the best thing ever happened to her. She calls me
on her birthday every year. She's running field service
for Sun. But that started and everybody left.

JP: The way you described it almost sounds like when
DG was formed in '67, '68? And then ten years later we
had another kind of frenzy, or a period that was ripe for
startups.

AK: That's right. All the venture capital had been
raised. Really when you look back at the venture thing,

the money was raised in '82 and spent maybe '83, '84,
'85. Now they're not spending any.

JP: From your perspective, what do you attribute to the
slump in the industry now?

AK: Well, I don't think DEC has read the displacement
issue very carefully at all. In other words, PC's
displaced the bottom end of the minicomputer and now
workstations have displaced the mid-range and the upper
range of the minicomputer. So the conclusion there is
minicomputers are dead, not dying, they're dead for new
business. And workstations are filling that void, and
everybody said that years ago. When I left, I wrote a
long dissertation to Ken on what I thought workstations
would do, and what he should do about it. Now that was
'83, and they're just figuring it out in Business Week
that they didn't do anything about it, seven years later.
And that's what happens there; they got the VAX mentality
entrenched and can't get out of it, and don't realize
that you can put 100 mips on...I'm a consultant for
Intel. Their chips are onorous, they're murderous, that
860 is--and what they've got coming, watch out. You
could build a 100 mip, 59, 60 megaflop workstation and
sell it for $25,000. That's what's happening and that's
what's really happening in the industry. So
minicomputers for new business are being displaced. If

you took DEC's $12 billion worth of business and took $2
billion out of the workstation and added on to that, the
company wouldn't be having any problems, would it? Think
about it. If they were 14 billion and growing like the
workstation people, there wouldn't be any problems would
there? People don't look at it over there like that. We
displaced Teletype, wiped out Terminet, wiped out GE and
wiped out any of the glass tubes, displaced them
completely.

JP: What about the high end products, the fault
tolerant systems?

AK: Well, I think that in science, the displacement's
just about happened. In the commercial end, that's a
good thing to do. But I think the minicomputer people
are living off their customer base and not getting a hell
of a lot of new customers and new business and that's
dangerous, in my opinion.

There's a cartoon I will share you that was done
internally on the decision-making process for the PC-100
which is the Rainbow, and this is the cast of characters
around the table and I've forgotten where he is, but it
shows the competing guilds and what their opinions were
and how the process was run and it wasn't much fun.

JP: [CHUCKLES] Was this when they were naming them?

AK: Yeah. But that took place every Saturday morning in the Mill.

JP: This kind of makes me think about the famous matrix and corporate structure. How was it to work in?

AK: Well, let me give you a view, and it's not shared by a lot of people, but it's my view. From 1969 through 1978, management of that company did not play a role in the shaping of the direction, at all. In fact I only saw Ken once a week at the Operations Committee, and maybe once a month as he floated through the place. But in terms of the strategy, he wasn't involved, Stan wasn't involved, Ted wasn't involved, they just weren't involved, it was all done with a fairly tight knit group. Why I say that is that in the period from '74 to '78, I was in charge of computer marketing strategy for the company. I had my own select group and we used to meet every Tuesday night and go and get pizzas and grinders and we'd meet from six 'til nine. Either that or if we didn't want anybody to know where we were we'd hide in the Sheraton Boxboro. If you look at the announcement of the VAX, who announced it and who physically did the announcement, it's myself and Bernie LaCroute. People don't really understand that; I was the driving force

behind the VAX and the announcement and that Bernie and I announced it literally at the press conference.

So, I was heavily involved in the computer strategy. We met every Tuesday night for a year when the new VAX was formulated. The engineers were meeting over in the mill, we dragged Gordon [Bell] and Bruce Delagi and [Bill] Demmer over to interact. Ken never came to one meeting in that period of time, not once did we see him. So 'til '78 things ran with a distinct group. It was was Bernie Lacroute, Dick Clayton, Julius Marcus, myself, Gordon. It was about eight people involved in strategizing the future of the family.

JP: Is that because Ken trusted you?

AK: He wasn't interested. He really wasn't interested. He'd get involved in the power supply and the box and how it looked, but he didn't get involved in the family or the instruction set or any of that stuff that we agonized over. At any rate, in '78 he got the notion that he should centralize -- and where it came from I don't know. Things were running very, very well except for the technical group. And then I spent a year and a half trying to get planning going. I had the economics department, I had the planning department, I had advertising and promotion. It was agony in that company.

You'd get a five-inch thick or three-inch thick five-year
plan from the product lines -- none of the function
groups would pay any attention to it. Europe ran to their
own plan, United States ran to their own plant, the thing
didn't have to add up to any plan. And so it was a
frustrating period. So when Leng left I got out of that
stuff and I went back in the technical group and it was a
lot of fun. I probably should have stayed there
[CHUCKLES]. So for the period of ten years that the
company really went from 90 or 130 million to I don't
know, 2, 3, 4 billion, the Operations Committee really
wasn't involved in the strategy of the company. It was
only when we got into what I call the PC era when they
got heavily involved in.

The biggest mistake that was made then was having
engineering work for engineering, and having the product
line work, just have marketing. That was the biggest
mistake that made, that Avram literally worked for Gordon
and that was a tragedy, 'cause you couldn't change
anything. The company ran best, I thought, when the
product lines had engineering. Things got done on time,
there was a sense of urgency to get the product to the
market, and there was control of the rest of the company
through the budget. You had the ultimate threat because
you were responsible for the budget. Now from what I
understand things are completely out of control. Nobody's

managing anything. I have nothing negative to say about the company 'cause I had a wonderful time in those 14 years that I was there.

I left in '83, September, it's was close enough to 14 years.

JP: Did you have a lot to do with Europe?

AK: Yeah, yeah. When VAX was there--there's a story, too about Europe. Ward McKenzie was over there. We had this dotted line relationship. Ward was the OEM and then the marketing manager for Europe working for Jean Claude [Peterschmitt]. Some of his guys, Dave Cherco in particular, who was OEM marketing for Ward, went over to Galway for a product scheduling meeting. It was at the time that we were all screwed up, we didn't know where we shipping, to who and why. So they went to Galway [which had] just opened, and Mike Spindler, who's now running Apple, you've seen the name, was working for Ward. Mike decided he was mad enough at the factory to stay over 'til Saturday. The plane we rented that Friday crashed and killed Cherco and a lot of the marketing management. Spindler <u>still</u> thinks he's living on borrowed time, that's he was supposed to be on that airplane. Now he's president and COO of Apple [CHUCKLES]

JP: Those kind of things put right in perspective.

AK: I had to send Ward in to identify Cherco's body,
it's the worst thing I ever did in my life and had to go
deal with his wife and kids.

JP: In terms of the international part of Digital, did
[Europe and GIA] get their marching orders from the U.S.
or did they do what they wanted?

AK: Not really. The only time I got really heavily
involved was when I was in marketing and we introduced
the VAX and Europe didn't have a plan that made any
sense. So Geoff Shingles and I spent a lot of time over
there, teaching them how to sell big systems. They
weren't doing much with the -10 and we were terrified
that if the whole thing swung, we would lose market share
in Europe if they didn't get on the VAX bandwagon. Jean
Claude was convinced that his sales reps couldn't sell a
big ticket item in Europe, the gestation period was too
long. So they were focused in on the -11 and the small
end of the business and we had to swing 'em. The only
marching orders that they ever got was that we kind of
crammed a budget of VAXes in '79 down their throat and
told them, "You've got to do it, it's for the good of the
company". That's the only time they ever got any
marching orders. Shingles agreed to it but Shingles was

working for Jean Claude in marketing and country managers in Germany and the UK were okay but France was going to be a disaster. Australia was weird because Australia never had the problem. Australia sold the first PDP-6 in Perth.

JP: [To the] University of Western Australia, the company had less than a thousand people.

AK: Yeah, you drill a hole through the center of the earth and it ends up at Perth as far away from you as they can get.

I have the ONLINE [Digital employee newsletter] here from when they shipped it.

It was a big investment for a little company. It almost croaked them. It really was a toughy. I'm working with Intel supercomputer group and it's a nice machine they've got. They're doing okay.

AK: So I think life was simpler in the '70s, things were really identified, you had clear responsibilities especially in the components group. The finance people worked for me directly. The manufacturing guy, Rod Smith, worked for me directly, same with personnel, Joe Gaffney. And those four years in the tower were pretty autonomous

and pretty self sufficient.

[END SIDE A, BEGIN SIDE B]

JP: Biggest challenge at DEC?

AK: The PDP-11. We figured we were a year and a half,
two years behind the three major competitors. If we
didn't hit it right and the thing didn't work, the
company was probably dead because the -8 wouldn't have
carried it through. The company went from 135 million
one year to 146 [the next] and everybody said that's a
recession...there's no sixteen bit machine ready yet.
But fortunately in '71 and '72 the -11 caught on as well
as it did. Getting the PDP-11 out was the biggest
challenge. We had to do everything --

JP: What set it apart from the other machines, the
competition's stuff?

AK: Well, we called the [Data General] Nova a 16-bit two
register PDP-8...

JP: Was the Nova the one that deCastro was thinking
about while he was at DEC?

AK: Yeah. And the way we beat Hewlett [-Packard] was on

speed. Their machine was cumbersome, it was pretty slow.
And then we pounded the UNIBUS as the unique feature in
the box in all our advertising and promotion.

JP: What do you see for the future for Digital?

AK: I don't know, I'm not close enough to it anymore. I
think Business Week was reasonably accurate by saying the
workstation's displacing the business quite a bit. I
think that they've got to decentralize and get back to
better control, put the decision making in a few more
people than Jack Smith.

[END OF TAPE]