11-87

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*** C O N F I D E N T I A L ***
*** D O * N O T * C O P Y ***

****

TO: EXECUTIVE COMMITTEE

FROM: WIN HINDLE

1. Problem - Implementing our large system strategy. Slow progress in transaction processing, database management, information systems support expertise and large account consulting knowledge.

   Solution - Form a Large Systems Board of Directors to guide and coordinate the efforts.

2. Problem - Desktop strategy not set. We do not have agreement on either hardware or software.

   Solution - Set schedule for bringing strategy to Executive Committee for decision by December 31 on Terminals, Workstations, UNIX, and OS-2.

3. Problem - Too hard to get things done inside the Company. There are too many internal dependencies.

   Solution - Form a new very senior task force to look at Digital's organization structure to propose simplifications.

E.C.

Interoffice Memorandum

To: JACK SHIELDS
JACK SMITH

cc: see "CC" DISTRIBUTION

Memo: 536756l016COR40
Date: Wed 16 Dec 1987 12:00 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: BUDGET GOALS - EXECUTIVE COMMITTEE MEETING

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At the IBM Executive Committee WOODS meeting, it was quite clear to many people that we do not:

1) Complete all the hardware for the systems we sell.

2) Complete all the software for the systems we sell.

3) Test the systems we are selling.

4) Test the third party software that we recommend and sell.

Please present at the Executive Committee meeting the week after next, what it would cost and what projects would have to be cut if we made the rule that in general, every system we offer would be complete and tested, and every third party software unit that we sell would be tested and spec'd.

I don't believe it is completely true, but it was decided by one of the groups that IBM picks one from many designs when they decide to manufacture a project. They conclude that Digital starts more than one design, completes more than one design, and goes into production, and let's the market decide which one is best.

At the Executive Committee meeting, please discuss this conclusion. How often do we go into production because we are afraid to say no to someone and we incur all the costs?

If we do this, I don't think we are truly letting the market decide which is the best product, but instead we are seeing which one gives the field the most support.

KHO:mc
KO:1478
DICTATED ON 12/16/87, BUT NOT READ

"CC" DISTRIBUTION:

WIN HINDLE*
IVAN POLLACK
JIM OSTERHOFF
JOHN SIMS

F.C.

Interoffice Memorandum

To: WIN HINDLE*
JIM OSTERHOFF
JACK SHIELDS
JOHN SIMS
JACK SMITH

Memo: 5367061874COR61
Date: Fri 11 Dec 1987 12:12 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: CONSULTANTS, MEETINGS AND OVERHEAD PEOPLE

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I feel ill at ease as we use more and more consultants, as we have more and more meetings to educate the Corporation and as our staff meetings get longer and longer. This is probably because it so clearly reminds me of the way the Company was going five or six years ago when a large percentage of the Company didn't have a burning obligation to get a job done and instead tended to invent reasons for straightening out the rest of the Company with consultants or educational sessions. I have a hunch that the productivity of marketing and engineering is inaversly proportional to the number of consultants and number of overhead people within the groups. If the data is available, I'd like John Sims to plot the number of overhead people in the marketing and engineering groups and the number of consultants we have hired and see if we can compare with the productivity of the Corporation.

I wouldn't worry about consultants if they were called in to survey the overhead operations of a group or the management techniques or if they were there to make suggestions on how that group itself could be better run. I do worry when they are out to educate us on how to compete with the Japanese or how the rest of the Company isn't run well.

Overhead people not only are expensive, but they develop ideas that slow down the work of people who have commitments to make.

I am particularly worried about long, all-day staff meetings. There is nothing in the literature that says everybody in one group has the obligation to review everybody else in the group and to be able to vote on what each one does. It's bad enough answering to a large staff, but to answer to all of one's colleagues is often exceedingly time consuming and often not very useful.

The Executive Committee has reason to meet and go over everything, because it is a committee of people who are really expected to run everything. This is not true of the managers one or two levels below.

KHO:ld
KO:1464
(DICTATED 12/11/87 BUT NOT READ)

DEC 0 9 1987

E.C

digital

INTEROFFICE MEMO

TO: Jack Smith
Jack Shields

CC: Win Hindle
Jim Osterhoff
Ivan Pollack
John Sims

Date: 9 December 1987
From: Ken Olsen
Dept: Administration
MS: MLO10-2/A50 **Ext:** 223-2301

SUBJ: BUDGETING - EXECUTIVE COMMITTEE MEETING

****
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At the next Executive Committee meeting, probably on December 29th if we cannot get it done earlier, I would like you to propose a detailed schedule for budgeting this Spring. I want to be assured that we are budgeting to complete every detail for every important system that we plan to sell all the way from components to the system design to the education and field support. I want to be sure we have a system which allows us to turn off completely the less important projects and that we complete 100 percent of the important projects.

KO:1452
(DICTATED 12/9/87 BUT NOT READ)

Attachment

I n t e r o f f i c e M e m o r a n d u m

To: see "TO" DISTRIBUTION

cc: IVAN POLLACK

Memo: 5366274164COR54
Date: Thu 3 Dec 1987 4:00 PM EDT
From: KEN OLSEN*
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: 1989 BUDGETS

****
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I'd like to do this Spring's budgeting completely different than we've done before. I'd like to break it into several pieces so that we can present the budget to the Executive Committee and the Board of Directors step by step as the budget is developed.

In February, I'd like to have presented to the Executive Committee an informal sample of the product needs as seen from the field. I'd like Jack Shields to organize a sample of the opinion of our field leaders and salesmen on what the customers would like from us 6 months from now, 12 months from now and 18 months from now, and I'd like to have it presented at a two or three day WOODS meeting in the middle of February.

At that same time, I'd like to have presented the organization chart of engineering broken down by what type of people are in what group and what projects they are doing today. In particular, I'd be interested in what overhead people there are in each group--how many marketers, how many lawyers, how many staff and of course, how many engineers doing engineering.

At the March two or three day WOODS meeting, I'd like to have presented the list of markets and list of applications that we have decided we would like to go into. For each application, I'd like to have listed what software and what hardware is needed indicating which ones of those we have and which ones we still have to develop, and also an indication of what the total cost for each of these applications in each market would be that includes engineering, tooling, manufacturing, inventory, training, and field costs.

By each application, I'd like to have a number that indicates the promised return to the Corporation.

At the April meeting, we might present, as far as it is completed, the engineering budget which should be referenced to the application budget so we can see which ones are being done

for particular applications and which ones are being done as technology for future applications.

KHO:ld
KO:1438

"TO" DISTRIBUTION:

GEORGE CHAMBERLAIN
DICK FISHBURN
WIN HINDLE
JACK SHIELDS
JACK SMITH
JIM CUDMORE
BILL HANSON
JIM OSTERHOFF
JOHN SIMS
BILL STRECKER

MISSION

THE MISSION OF DEC IS TO PROVIDE COMPLETE, DISTRIBUTED, INTEGRATED INFORMATION SYSTEMS WHICH GIVE OUR CUSTOMERS A UNIQUE COMPETITIVE ADVANTAGE.

- COMPLETE INFORMATION SYSTEMS INCLUDE COMPUTER PRODUCTS, COMMUNICATION PRODUCTS, APPLICATIONS, SERVICE, AND SUPPORT

- DISTRIBUTED INFORMATION SYSTEMS POSITION COMPUTING RESOURCES AND THE DATA AS CLOSE AS POSSIBLE TO THE END USER RESULTING IN MAXIMUM RESPONSIVENESS TO BUSINESS/USER NEEDS.

- INTEGRATED INFORMATION SYSTEMS INSURE THAT ALL THE INFORMATION RELATED ACTIVITIES (PROCEDURES, APPLICATIONS, AND DATA) OF THE BUSINESS CONSTITUTE A SYSTEM.

- IT IS THE INTENTION OF DEC TO:

  DESIGN AND MANUFACTURE SUBSTANTIAL PORTIONS OF THE INFORMATION SYSTEM AND SUPPORT AND SERVICE ALL OF THE SYSTEM.

  BE ORGANIZED TO DELIVER COMPLETE SYSTEMS THAT ARE CONSISTENT WITH OUR CORE STRATEGY AND THAT CONTAIN UNIQUE QUALITIES WHEN REQUIRED.

  IDENTIFY THOSE AREAS WHERE WE NEED TO PROVIDE LEADERSHIP TO WORK WITH OUTSIDE PARTIES TO ASSURE THE COMPLETION OF OUR OVERALL MISSION.

ECII:1.50

WHY THE EMPHASIS ON 'COMPLETE, DISTRIBUTED, INTEGRATED INFORMATION SYSTEMS'

- o COMPLETE
  - INFORMATION SYSTEM COMPONENTS ARE BECOMING A WORLDWIDE COMMODITY WITH LITTLE UNIQUENESS
  - CUSTOMERS WANT TO FOCUS ON THEIR BUSINESSES, NOT ON BEING INFORMATION SYSTEMS INTEGRATORS
  - THEREFORE SIGNIFICANT VALUE IS ADDED AND SIGNIFICANT PROFITS CAN BE MADE BY COMPLETENESS (AND PERHAPS ONLY BY COMPLETENESS)
- o DISTRIBUTED
  - TECHNOLOGY TRENDS FAVOR LARGE NETWORKS OF DISTRIBUTED DATA MANAGEMENT AND SMALLER COMPUTING ELEMENTS
  - RESPONSIVENESS IN THE DESIGN, ACQUISITION, DEPLOYMENT, MANAGEMENT, AND USE OF DISTRIBUTED SMALLER SYSTEMS OVER CENTRALIZED LARGE SYSTEMS
- o INTEGRATED
  - ORGANIZATIONAL PRODUCTIVITY GAINS ARE BASED ON THE INTEGRATION OF THE INFORMATION SYSTEM INTO THE BUSINESS AND THE INTEGRATION OF APPLICATIONS AND DATA WITHIN THE INFORMATION SYSTEM

ECII:1.50

MISSION NOTES/IMPLICATIONS

- COMPLETENESS IMPLIES THAT DEC IS THE PRIMARY INFORMATION SYSTEM CONTACT TO THE CUSTOMER. GIVEN THAT DEC OWNS THE RESPONSIBILITY OF INFORMATION SYSTEM COMPLETENESS TO THE CUSTOMER, IF THAT COMPLETENESS REQUIRES A CAPABILITY THAT DEC DOES NOT DESIGN OR MANUFACTURE, DEC WILL FACILITATE/MANAGE THE ACQUISITION AND INTEGRATION OF THE CAPABILITY.

- THE INVESTMENT TO GET COMPLETENESS IN ONE MARKET SEGMENT SUBSTANTIALLY OVERLAPS THE INVESTMENT TO GET COMPLETENESS IN OTHER MARKET SEGMENTS. THEREFORE, DEC WILL TEND TO TARGET MULTIPLE MARKET SEGMENTS TO EXPLOIT/AMORTIZE THAT INVESTMENT.

- THE COMPETITOR ALSO FOCUSING ON COMPLETENESS (IBM) HAS SUBSTANTAILLY GREATER RESOURCES THAN DEC. THEREFORE, DEC MUST CAREFULLY FOCUS AND TARGET ITS RESOURCES (e.g., AGGRESSIVELY RATIONALIZING ITS PRODUCTS) AND UTILIZING VENDORS (e.g., BUYOUTS, STRATEGIC ALLIANCES) AND PARTNERS (e.g., CMPs). DEC MUST BE AGGRESSIVE IN DEFINING AND PURSUING THESE OUTSIDE OPPORTUNITIES.

ECII:1.50

I n t e r o f f i c e M e m o r a n d u m

E.C.

To: EXECUTIVE COMM:
BILL HEFFNER
ROGER HEINEN
DOM LACAVA
DON MCINNIS
BOB PALMER

Memo: 5364254311COR70
Date: Fri 13 Nov 1987 10:07 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: PVAX GOALS

****
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Today people have specialized workstations often shared by a group. There is often a different terminal for each type of software, for each application, and even for each type of software within an application.

I believe our goal for the PandaVAX and the 19" PVAX is to have the same VAX workstation on every desk for circuit design simulation, chip design, mechanical design, plumbing, architecture, roads, or boats, airplanes, and so forth.

KHO/ma
KO.1400
Dictated 11/13/87, but not read

Interoffice Memorandum

E.C.

To: see "TO" DISTRIBUTION

cc: see "CC" DISTRIBUTION

Memo: 5364073158COR95
Date: Wed 11 Nov 1987 3:21 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: DESKTOP STRATEGY

****
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I thought we had a lot of nonsense in our discussion on desktop strategy. People keep talking about applications without thinking of the problems they want to solve, and no one seems to look at the whole problem as a system which has to be complete in every detail.

Here are my views:

I. Assumptions

I assume that most competent companies want almost all of their desktop devices to be the same throughout the whole organization, and everybody is to use the same word processing system, the same electronic mail, the same spread sheets, the same formats, etc.

I further assume that total cost per desk is the important parameter, that people will insist on giving up only a small space on the desk, that looks are very important and that most people don't want to have anything to do with floppy disks or tape or memory management.

I assume that the diskless Number 6 personal computer will, at times, need a hard disk. This sounds like a contradiction in terms but not a contradiction in goals. The goal was to make the personal computer-workstation inexpensive, to eliminate the need for all local removable media and have all the software downloaded to the network. These are the important principles, and they must be maintained. Purity of disklessness or consistency of terms is not the principle.

I assume that 80 percent of the desks do only word processing, electronic mail, simple time sharing and use simple services. I assume that some major customers will insist on standardization on MS-DOS or OS2.

Many people assume that to be successful P-VAX and 32-bit OS2 are going to have to do all the software that MS-DOS does today, and whoever gets there first will win. I assume that P-VAX will have to do word processing and electronic mail, but it will do those things that are now

impossible or are not well done on 16-bit machines. The market is huge for the things that are now done on workstations and particularly those things which need workstations but cannot afford them today. For example:

1. Every electronic engineer should do his design and simulation on a powerful P-VAX.

2. Every town, every state, every company maintenance department should have the roads, the water, the power, the gas, etc. on a P-VAX and they should be on several P-VAX systems which are networked together when the operation has any size.

   Every architect's office should have a network of simple, inexpensive P-VAX systems to do their architectural work. All straightforward mechanical design should be done on P-VAX. That includes all tool and die work and sheet metal design.

   I believe the market for P-VAX is absolutely enormous but is not the area our people want to concentrate in, which is to do what IBM has done on MS-DOS. It is in the area of what has been done with workstations, particularly those areas which can't afford the workstations.

   I believe servers are a most critical part of any desktop system. They should be compact, very inexpensive and give just one or two fast hard disks, and they should get their software downloaded from the network. We'd probably need two servers. One with six or eight DEMPR lines and one with 32 or more serial lines. They should not sit on the floor but should nicely stack one on top of each other on top of a file cabinet, on top of a table or in a closet.

   I assume that for most applications 320 terminals are ideal, and where simple graphics are needed, 330 and 430 terminals will do.

   For people who need or want a PC on the desk, a diskless, good looking, compact, inexpensive 286 or 386 14 inch color or 15 inch black and white is the easiest and best solution.

   For publishing, workstation work and real computing, a diskless P-VAX with 14 inch color or 15 inch black and white or 19 inch color and 19 inch black and white is the best solution.

KHO:ld
KO:1393
(DICTATED 11/10/87 BUT NOT READ)

E.C.

Interoffice Memorandum

To: see "TO" DISTRIBUTION

Memo: 5310353366COR28
Date: Fri 23 May 1986 11:01 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: BUDGETS

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I. After two days of budgets, I feel most ill at ease in those areas in which we don't have detailed plans, measurements, and reviews scheduled, nor do we have agreement on how they should be done. In some of these areas, Bill Strecker feels he has to patiently talk people into wisdom, but I feel we should accomplish all of this before the budget is frozen. Next week, I'd like to see us concentrate largely on those areas which are tremendously critical to the company and which today limit the sales of our key products. Let's insist on detailed plans in areas such as local area systems, clustering, fail-safe computing, TP workstations, etc.

II. I think we should assume that engineering managers were taught under the previous regime, and have never been told otherwise, that when they get resources for a large number of random projects, most of which aren't critical, they are his resources to spend as he will and that, for the exception of the very critical things that management is always on top of, he will never be asked to report on the unimportant ones. History has taught the managers that, if they produce unimportant projects, no one will ever criticize them.

My view of the large number of unimportant projects that add up to a significant amount of money, is that they have almost never produced anything. The staff's view is that we ought to invest in these little things because the big investment is already made and we'll make a lot of money just by adding a little more to these little projects. I claim, because they are unimportant, we have never collected the data and don't know whether they make any money and never will know whether they make any money. I'd like to be proven wrong, but I don't think anybody has ever cared enough to keep track of them or look back in history.

Therefore, I propose that we take the people called the Executive Committee plus staff to whom we can add anybody we want, and have this group be responsible to review a small number of engineering projects each month and write a

E.C.

short report saying how they are doing on their budget, their checkpoints, their goals, and how the competition looks. The person doing this review should not be the engineering manager or even close to the engineering manager.

I'll watch the three big computer projects and networking and write a report on them monthly. I suggest that George Chamberlain take responsibililty for those things he proposes are an easy way to make money such as selling peripherals to competitors. I suggest that Bill Strecker take responsibility for reporting on several of the systems engineering projects. I believe it would be good if Jim Osterhoff reported on the factory projects.

It may seem like once a month is too often, but I think each of these projects is worth a scheduled two hours once a month at which time, in person, on site or anywhere, the individual asks a series of questions and finds out how things are going. Then he would write a report which could be very simple or very detailed, but would be a log, history, or diary of how that project is going and how it's matching the checkpoints and goals that have been layed out.

I openly make the assumption that you cannot trust a manager who has important projects and unimportant projects. It could be said that I assume others have the same weaknesses that I have. I'm afraid that, until it is proven otherwise, I have to make that assumption.

KHO:ld
DICTATED 5/23/86 BUT NOT READ
KO.68

"TO" DISTRIBUTION:

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RON SMART
KEN SWANTON

E.C. Hal John Sims

Interoffice Memorandum

To: see "TO" DISTRIBUTION

Memo: 5313051186COR56
Date: Thu 19 Jun 1986 10:17 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: SECRETARIAL SERVICES FOR SENIOR VICE PRESIDENTS

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I would like to postpone officially giving the title of Senior Vice President to the three people proposed by the Board until we organize certain aspects of the job. In particular, I would like to define carefully and thoroughly the job of Secretary to the Senior Vice President.

I would like, at the next meeting of the Executive Committee, to have someone come, maybe the Senior Vice Presidents' secretaries themselves, or a professional, to define for the Committee what the job of Secretary to the Senior Vice President should be.

For example: I insist that the Senior Vice President be organized enough, and his secretary be competent enough, that she can run the office when he is not there. This might be more important than servicing him when he is there.

When any call comes in, I want it answered promptly, professionally and competently; if the Senior Vice President is not there, I want the call to be handled with particular competence. Never, under any circumstances, do I want the telephone answered by some unknown person who says she doesn't know the whereabouts of the Secretary to the Senior Vice President or the Senior Vice President and doesn't know how to find out.

KHO:ml
KO.113
DICTATED 6/19/86 BUT NOT READ

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E.C.

I n t e r o f f i c e M e m o r a n d u m

To: see "TO" DISTRIBUTION

Memo: 5316952869COR18
Date: Mon 28 Jul 1986 10:46 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: POLICY FOR IMPROVING BUILDINGS

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I would like to change the policy stating that any manager can spend up to a million dollars fixing up his building without approval from anybody. When I took part in approving that policy, I thought it meant that a manager could approve a plan for spending a million dollars, not that he could spend a million dollars.

I therefore insist that we change the rules, that there be a plan for fixing every building, that the plan be approved by the Executive Committee, and that there is no amount below which any vice president can spend money without a plan or without approval.

Part of every plan should be a discussion of why they need all new electronic equipment instead of the terminals, PC's and processors that they were using before.

KHO:ld
KO:187
DICTATED 7/25/86 BUT NOT READ

"TO" DISTRIBUTION:

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JOHN SIMS
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RON SMART

F.C.

I n t e r o f f i c e M e m o r a n d u m

To: see "TO" DISTRIBUTION

cc: see "CC" DISTRIBUTION

Memo: 5316261437COR89
Date: Mon 21 Jul 1986 1:06 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: IBM'S ANNOUNCEMENT ON IMPROVEMENTS TO THEIR PRODUCTS

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In IBM's announcement on improvements to their products they are said to claim they will match their S3600 against any super minicomputer maker. I take that as a challenge to us, and I would be embarrassed if we did not pick it up.

I am too young to know the protocol for duels, but it seems to me that the challenged party picks the weapons and the field. So I think we should accept the challenge and lay out the contest. This contest should probably include large office, factory, laboratory, and an engineering group, and should be a problem that includes a large amount of network supervision, a proprietary software such as VMS, an industry standard software system such as UNIX, and industry PC software such as MS-DOS, and connection to SNA.

KO:182

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E.C.

Interoffice Memorandum

To: GRANT SAVIERS

cc: see "CC" DISTRIBUTION

Memo: 5317269499COR58
Date: Thu 31 Jul 1986 3:25 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: DISK RELIABILITY

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Please invite the Executive Committee out for a meeting at Shrewsbury at which time you can present information on disk reliability. We'd like to hear the reliability data on each of the major parts of the disk system, how you're trying to prove the reliability of each of these units and what results we can expect.

It will be interesting to hear what we know about IBM's approach and the Japanese approach to reliability and how they compare with our own.

Also, go into detail on the electronic portion of the machine. How do we select our components, how are we sure that they are normally used in the center of their margins, and how are we sure that we picked the most reliable and the highest quality parts for every printed circuit board?

It might be interesting to take a handful of parts and go through in detail how the design is made and how the components are checked and inspected.

Over the years, we have had long arguments about burning in parts and burning in on electronic circuits. Would it help here, how much should we do, and are we at the point that any increase in reliability is worth almost any cost?

KHO:ld
KO:191
DICTATED 7/31/86 BUT NOT READ

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F.C.

Interoffice Memorandum

To: see "TO" DISTRIBUTION

Memo: 5318353556COR22
Date: Mon 11 Aug 1986 11:18 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: REMEMBERING HISTORY

****
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Two or three people have been writing detailed magazine stories about Digital. They found inconsistencies that sound exciting enough to write a book about. I am afraid we are going to have to live with the books and the inconsistencies that they heard within Digital.

I would like each one of you to adopt the following policy:

1. Do not encourage a book. A book about the history of the Company is the last thing we need.

2. Never under any circumstances tell an interviewer about things that you did not personally observe which you are not absolutely sure are true.

3. Never repeat hearsay, rumors, stories in the Globe, or things that are commonly believed.

For example: One of our people said that Ed DeCastro designed the PDP-8, and that they built the NOVA because Digital would not build it. This was Data General's story to the Globe. We never bothered to answer it, and after 20 years, I do not want to get involved with straightening out stories. Above all, I do not want to answer our own people who pass on hearsay.

Gordon Bell did the PDP-8 because it was a repackaging of Gordon's PDP-5.

We never saw the design for the NOVA. We have Data General's logs for the two years before the Company was formed, and it was clear they never planned to offer us anything they developed on our time and money.

Above all, I do not want to get involved in discussing past hurts in public.

Some of our people say that Gordon designed the VAX. Indeed, he was the boss and he did take part in the specifications. The real design was laid out by a committee headed by Bill Strecker.

If you were not there and did not see it with your own eyes, do not pass hearsay on to reporters.

I do not want history written unless it is accurate, and we do not want to get involved in straightening out hearsay, or to figure out now, who deserves credit for what successes, and who deserves blame for what failures.

KO/aj
KO:198

DICTATED 8/11/86, BUT NOT READ

"TO" DISTRIBUTION:

FRANK BOWDEN
RON EISENHAUER
RONALD HEVEY
WILLIAM LYNCH
OFFICERS:
RAYMOND WOOD
HARRY EISENGREIN
LARRY GOODWIN
ROBERT LONG
MICHAEL MARSHALL
CHUCK PICKLE

Read E.C.

Interoffice Memorandum

To: see "TO" DISTRIBUTION

Memo: 5320166768COR57
Date: Fri 29 Aug 1986 2:38 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: TAXONOMIES OF IMAGING, FACTORY, LAB, DATA PROC., AND TP

****
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Taxonomy is a good word and a useful word. However, it dropped out of common usage long before many of us were educated. It is the scientific, systematic, organized way of classifying a family of plants or animals or other things.

For many years, science consisted of collecting, systematizing, and organizing plants, animals and things discovered in nature. Collecting plants and animals from remote corners of the earth was the passion of scientists a couple of hundred years ago. Carolus Linnaeus, a Swedish botanist, developed the taxonomy of plants to a very high degree and his system is still used today.

However, this discouraged innovation, it limited science only to collecting and organizing. Darwin proposed a radical new idea which revolutionized science, not because it was so important in itself, but it introduced the idea of getting new ideas. At the time, science was concentrating on the development of new theories and new inventions.

Today, we are so involved in concentrating on innovation that we have forgotten that the great theories and inventions were often developed as a result of good taxonomy, either formally documented or sorted out in someone's head.

Often our communications and our difficulty in making decisions comes about because we don't start with a good taxonomy of the subject. We are like the blind men in the story where each one described an elephant from that part which he had a chance to feel. They needed a taxonomy to put all these observations together into a whole elephant, and if they did that, they might have had the opportunity to have improved it.

To make good inventions, good theories, and above all to communicate and make decisions, we should start with a taxonomy of the subject.

We have difficulty organizing our heads and coming to decisions on several subjects because we don't see them from the same point of view. I would like presented in one day of the Engineering meeting and later to the Executive Committee, taxonomies of the above subjects.

I'd like to do this in two steps. First I would like to have an

informal presentation of a proposed approach to taxonomy so we can all agree on how it will be done and then later present the taxonomy. The subject might be so simple that it could all be put on one sheet of paper, or it might involve a rather detailed study.

First I'd like a taxonomy of the whole field of imaging. Apparently, I'm looking at one part of the elephant and other people are looking at others, and we don't communicate. I, of course, feel I am looking at the whole elephant and don't think we are in a position to build elephants. In my view, some people are looking at toenails and want to build toenails, and I don't think that will make elephants. But I do think that we should understand the field and invest in several of the technologies so that when people need parts of an elephant, we can do them.

The taxonomy of imaging might be broken down into several charts. The first is storage, and it probably needs at least two charts. One is size versus speed, and we should put a spot for each of the applications of imaging. Next should be on semilog paper which starts with the life of the storage going from .01 years to 1000 years, and I think we'd have a uniform distribution of applications across that. The next would show cost of storage and it also would distribute the applications.

Another chart would be transmission speeds and transmission costs. This should also be a series of charts that show how applications fit in cameras as they are spread out by cost, speed, number of pixels, levels of gray and levels of color. Another set of curves should be the cathode ray tube also by levels of gray, color, number of pixels, etc. Then we should do the same for the printing of the pictures.

I. We should then make a list of all the applications and identify which ones clearly should be taken care of by people who are already expert in the field and who may or may not buy some components from us. Then we should identify those for which there is no expert already and which we have an obligation to society to build because there is no one else with the capability we have.

II. I would also like to make a taxonomy of desktop devices. Here we have a lot of trouble with communicating because each one of us feels that the whole world is filled with desks like ours and that most of the world needs exactly what we need. One approach to this would be to make a taxonomy of the desks at Boeing today, how they think they will be in five years and how we think they will break down in five years. We could do the same thing at General Motors, at a big insurance company and two or three smaller companies. From this we might draw conclusions as to how the whole world of desktop devices will break down next year and five years from now and get a feeling as to how many will be simple, dumb terminals and how many will be twenty-three levels of color.

III. Laboratory and factory create a lot of misunderstanding. Our view on these fields appeared to be more a function of

which one of our friends, OEMs or big customers are complaining at any one time rather than a systematic analysis of just what the markets and needs are and where we can contribute. It would be much easier for us to argue over a taxonomy than to argue in a vacuum.

I think it would be a mistake to make great detailed taxonomies without first making a rough approximation or laying out a plan for taxonomy. Let's schedule a discussion on each of these subjects very quickly and then schedule a presentation that will be useful for us in carrying on our discussions and our plans.

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KO:240
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RON SMART

I n t e r o f f i c e M e m o r a n d u m

To: ED SCHWARTZ

cc: see "CC" DISTRIBUTION

Memo: 5320147165COR84
Date: Fri 29 Aug 1986 9:19 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: PROPRIETARY BI FOR PRESENTATION TO THE BOARD OF DIRECTORS

HISTORY

This week at the new product announcement and at an analyst meeting I went to, we were several times challenged as to why we apparently changed our policy on open busses. What we are doing is very obvious, very simple and very necessary. However, it is important that we explain it clearly and simply. It is not uncommon for officers of the company to be asked to explain this and they don't have or don't remember the background necessary to do so.

I would like you to make a formal, documented presentation to the Board of Directors so that they understand if they are asked and so that people who have to make public appearances have a documented understanding of what the history is.

Over the last number of years we have collected a lot of data that proved this had to be done. I would like you to go over again the figures and documents that we have written internally, and from this, glean the financial facts that made it absolutely necessary to make this change if we were to survive. I believe there should be two parts to the presentation. The first should explain how we got into the problem and the second part should explain why it was vital to our survival that we have a policy that would not make the BI Bus open.

The mission of Digital Equipment Corporation during its first years was to introduce computers into that myriad of markets which knew nothing about computers. In order to do this, we needed to use people who were experts in each of the fields and who could do the specialized software and make the specialized components that would allow us to serve these fields. Often these people became OEMs and bought our equipment and put their specialized software and hardware onto it; sometimes they just made the specialized hardware or software and sold it to people who bought the computers from us. In order to encourage people to make the equipment that would make it possible to solve specialized problems with our computers we had to allow them to use our bus system. This worked well and our computers ended up with more specialized devices than any other computer systems. We were also successful in introducing computers into more markets and more applications by far than anyone else.

In time a number of people started to exploit our generosity and used our bus to make major parts of the computer system such as memories and disks. This was not the intent of opening our bus and it hurt us very severely economically.

Our costs in engineering and marketing, in fact, the major cost of all our operations, is the integration of the systems so that the software, central processor, disks, memory and peripherals, and the network interconnections all work together. This is the reason our testing and marketing is so expensive and our R & D budget is so large. Because of the difficulty of doing this total integration job, we are staffed more than most companies and accused of having a bloated structure. However, the result is that we are able to make large systems that work which very few other people are able to do.

The people who add on the disks and memory have none of these costs, and after we have made a system, defined it and made it work, they simply have to copy individual parts of it with none of the overhead and they can do it less expensively than we can.

In time this outside building of parts which we've designed and integrated became more and more important and our profit levels deteriorated. In those areas where we sold only the central processor, we actually lost money. The central processor price in no way would cover the engineering integration, maintenance, marketing and selling. We would have spent years developing a system, testing it, proving it, selling, marketing and advertising it, and we then would have to compete with others who would take just the cost of our central processor and buy the components from Japan and offer a system at much less than we could. We either have to compete with each component and lose money or sell only the central processor and lose money.

There have been continuously, and are today, a fairly large number of central processors usually based on some very high quality and competent chips. These people who add on peripherals can get their central processors elsewhere and the obvious specs often look better than our own. They all use public busses which often have specifications that look better than ours. The reason they want to buy our central processor to put all their peripherals on is that we do the enormous amount of engineering, marketing, testing and selling which has accumulated over many many years, and they want that free when they buy the central processor.

As these phenomena increased and continued to grow, it was clear the company would disappear and we could not make this large investment in engineering, testing, maintenance, marketing and selling. So for a number of years, we have been actively trying to compete better by raising the price on the central processor, raising the price on our software and being more aggressive on the price of the memory and the disk. When we explain this, we tell people so that they have had due warning as to just what our problem was and what we are doing about it.

The newspaper business is an interesting example of what has happened in this area. We could not compete against our own OEMs in the newspaper business. When they put Japanese memories and Japanese disks on our central processors they could under price us, and if we matched their price, we lost money. So four or five years ago, we decided to abandonn the newspaper business and let the OEMs take it. However, they all collapsed and

disappeared and the reason is of course, they were living off our marketing, our testing and our selling. They would let us do all the selling and then, as the unit went out to bid, they would under price us. We of course could not afford to do the selling and all the other costs and still compete with them on price and so suddenly the newspaper business was left without any suppliers at all. The newspaper industry begged us to come back and we have done so but very cautiously, because in the predicament we got ourselves into, it was impossible to survive.

BI BUS

There are a number of high speed busses that are in public domain or sold by a chip maker and therefore open to everyone. These have very high data speeds and they are relatively inexpensive. Our customers were demanding that we also have a high speed bus, and after many years and very major investments, we have completed the BI Bus. This was very expensive and very time consuming for us because we had to do such thorough testing and make sure it did everything for everybody under all conditions. We did not open this bus to all the special device makers because there are very few of them that need the high speed. Most of these specialized devices connect or measure physical phenomena, and there is no physical phenomena which operates at the speeds of these high speed busses. Robots, machine tools, and laboratory experiments normally are relatively slow. For those data collection devices and those specialized places which do need high speed, we encourage them to take a license from us to apply the BI Bus to that.

There is however, very little demand for BI in the specialized applications world. BI Bus is designed for very high speed computing and the input/output is normally through the Ethernet and not through specialized devices. BI is very expensive to build. There's a large number of layers in the very complex board. There are 300 contacts on the board and a very expensive specialized integrated circuit to make the interface to the BI Bus. So even though we encourage those special module makers who need high speed to take a license from us there will be very little demand for it.

Of those OEM's who have been dependent on our engineering, testing, marketing, integration and selling, I would like the BI opened so they wouldn't have to incur the costs which we have already incurred and so they wouldn't have to do any selling because we do the selling. We of course have no sympathy for others who only want a free ride at our expense, and it is very obvious that if we did allow it, Digital Equipment Corporation would disappear or we would have to make a drastic change in the way we do business.

No one makes the major investments in integration, testing, software, marketing, and selling for the public busses made by Motorola, Intel, etc. because they would have no return. Anyone could exploit their investment at no cost and therefore very low price. If we lost all rights to our intellectual property in this area we, as a company, would be no better off than if we used Intel chips and busses, and the country and the industry

would lose the results of our very large investment.

ADDENDUM I

There is a question which is not normally asked publically, and which I would rather not answer publically because it shows inadequacies in our financial systems. The question is: "How did we ever get into the predicament of charging low for our central processors and high for our memory and disks?"

There are several answers to this question. First of all, financial people like systems which average costs. Their only interest is in having the books balance. Taken from this point of view, it makes no difference if you know the true cost of an individual products because everything averages out and the final results come out the same, (at least from the point of view of a fianance man.) The result of this attitude is that the total cost of developing, tooling, inventorying, marketing, selling, servicing, and other administrative costs, get averaged and a fixed multiplier is applied to all products. The result was that we used the same mutiplier on CPU's, disks, and memories. We even used the same multiplier on things that we bought out, even though there was no developmental or component inventory cost, that we used for many things that we manufactured inside. Collecting enough detail to price the individual products according to their individual costs and investment, is not one of the goals of American financial experts.

The cost differences between disks, memories and CPU's became compounded because when many people came into the minicomputer business, the purchases were usually decided on the cost of the central processor. So, pricing competition concentrated in this area. In order to meet the competition, we lowered the price of our CPU's and allowed the disks and memories to be relatively high.

All of this, at first, made little difference because the systems were relatively simple. It took relatively little systems engineering and testing, and the software we offered was also simple.

As the cost for systems engineering, testing, and the complex software that would tie everything together to make them all work as a system with an infinite number of configurations, and as the marketing, selling and administrative costs grew because of the complexity of the systems, these markups grew. In time, the markups on disks and memories became much too high and we slowly set about to change attitudes that markups were fixed, to the idea that we should price according to our total cost for a product.

We have been evolving toward a solution to this problem by charging more for the CPU, which is a key part of the systems engineering cost and which is a unique part of the product. We have also been charging more for the software, which is a major part of the cost. We have also been selling packaged sytems because our systems engineering, our systems testing, our servicing, and our manufacturing costs less if we have packaged

systems.

ADDENDUM II

There was tremendous pressure internally and externally for us to sell MicroVAX chips on the open market. We would have lost an enormous amount of money and market share if we had done this. It is easy to see why it is desirable for other people. The cost of this chip is largely in the systems engineering and the software and all the marketing and selling activities that we carry one. If someone was able to buy that chip at the same price they could buy competitive chips that don't have the systems engineering, the testing, the marketing and the selling activities, they could very easily make a lot of money without incurring most of the cost.

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KO:203

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E.C.

Interoffice Memorandum

To: see "TO" DISTRIBUTION

Memo: 5323464201COR80
Date: Wed 1 Oct 1986 1:53 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: ~~OCTOBER~~ WOODS MEETING

At the October Woods of the Executive Committee, I'd like to continue our discussion of strategy. However, I'd like to take a completely different approach.

Last month's Woods Meeting was based on the strategy that we would build on our strengths, and get weaker and weaker in our weaknesses. It appears that IBM's strategy is to strengthen it's weaknesses.

Let's limit the Woods just to the Executive Committee, with maybe one or two invited guests.

Let's make a list of all our strengths and all our weaknesses, and then consider the two alternatives. One, will let the weaknesses deteriorate and build on all the strengths, and the second one, we will make a program to develop the weaknesses that we have today, such as low cost manufacturing, power supplies, packaging, communications, managing of corporate data processing communications, marketing, etc.

Most of these decisions we have left to the engineering budgeting process, but I believe it is important enough that we should outline the two approaches and bring them to the Board of Directors for a vote.

Both approaches to strategy have a good ring to them. If presented one at a time, I am sure anyone would agree to either one. They each sound so logical, but we can only face the question, if we look at both alternatives.

KHO:mc
KO:328
DICTATED ON 30 SEPTEMBER 1986, BUT NOT READ

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Interoffice Memorandum

To: KEN OLSEN

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Memo: 5323567542COR10
Date: Thu 2 Oct 1986 3:08 PM EDT
From: JACK SHIELDS
Dept: FIELD OPERATIONS
Tel: 276-9890
Adr: OGO1-2/R12*

Subject: STRATEGY

****
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The recent memo on Company A and Company B was as insightful as it was provocative.

I have a few observations. Company B, while young, has a bit of experience and even a few failures. In fact, in a sense, it has the advantage of longevity in many of its key management positions and a realization that they (management) must live with the consequences of its decisions for a much longer time. This is due to the absence of retirement turnover.

Company B has a different approach to becoming the low-cost producer. It is based on experience and agility. Company A has a background of longer product cycles and less willingness to introduce new products quickly. This is based on a lease/rental, rather than pure selling, distribution history and a realization that short product cycles are less profitable. This is further reinforced (or exacerbated) by the high capital costs required to make Company A's widgets. Volume and longer product cycles are the name of the game. This is easily recognized when we read about the celebration of the five-year anniversary of a relatively simple, off-the-shelf componentry, personal computer which essentially has not changed, except for a faster commodity CPU chip replacement.

Company B, however, believes in short product cycles - driven by the technology - and technical innovation. As it is a much smaller company, its volume for any one product is necessarily lower than that of Company A.

Company B also understands the problem of excess inventory when the sales force fails to meet the planned volume production rate.

Company A has had little experience (especially in top management) of sales ever failing to sell the volumes required. In fact, Company A strongly believes its marketing muscle can overcome almost any problem.

Company B, therefore, has evolved a different approach. The approach is based on a recognition that it is a technology driven company, with short product cycles, lower volumes (10% to 20% of that of Company A), and a record of success based on the

technological advantages of its products (networking common family, superb software, ease of use, etc.). In addition, Company B has created the industry's best service capability and has placed customer satisfaction as its primary goal.

Given the environment and the need for agility and uniqueness, Company B has developed an extremely agile manufacturing which can respond to short-term demand fluctuations and an industry unique sales and customer interface to insure almost real time connection to customer demand. Company B has shortened lead times, improved customer satisfaction, and held inventories almost flat ($+63 MEG), while growing $3.7 billion over the past four years.

Trends indicate that Company A has almost the opposite inventory performance.

Perhaps the definition of low-cost producer should be reviewed.

/klm
klm.600

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BILL STRECKER
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JACK SMITH

F.C. ~~10/22/86~~ ~~KO-WOODS~~

DIGITAL

INTEROFFICE MEMORANDUM

TO: EXECUTIVE COMMITTEE

DATE: 26-Sep-1986 10:25
FROM: Ken Olsen
DEPT: Corporate Administration
M/S: ML012-1/A50
EXT: 223-2301

SUBJ: NEXT PASS AT STRATEGY - OCTOBER WOODS

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At the October WOODS, I would like to have the Executive Committee alone look at strategy. As a vehicle for discussion, I would like each person to present on paper his observations and a model of the future of two hypothetical corporations in the computer business.

Corporation A, has a history of many years of making electronic mechanical products and a history of very aggressive and successful marketing. In the advent of computers they, in an organized way, strove to be best in the areas of computer science and electronics in which they had no background. They set goals, they made schedules, they made major investments, they took gambles and they experimented. In time, they became leaders in the areas in which they were weak.

At the same time, they maintained their aggressive marketing skills and exploited their mechanical skills in the area of packaging, interconnection, automation, cooling, and low price manufacturing.

Let's consider what the long term history will be of a company which sets about to strengthen its weaknesses while maintaining and exploiting its strengths.

Corporation B, is much newer and much smaller, and with great wisdom set about to exploit its strengths and to avoid areas in which it was weak. It grew very fast when it was small. It did at one time have skills in many areas, but its skills, interests and corporate goals became more and more limited.

Corporation B, has enormous strengths in computer science and probably is by far the worlds strongest organization in this area. It has the best strategies, products, knowledge and experience in the areas of computer science.

The inner circle of decision makers are computer scientists. These are the people who get promoted, these are the people who are

appreciated, and the results in computer science are magnificent.

The senior management committee of the corporation limits itself to personnel matters and formal approvals, and relegates the strategy to this group of computer scientists.

At one time, this corporation had medium to good skills in broad areas, but as this decision making body evaluated the areas in which the corporation had particularly good strengths and made future investments in these areas, those areas outside of computer science got weaker and weaker.

There are no goals for low cost manufacturing, great packaging, or major improvements in interconnect, and there is an indication of terror when it comes to problems of cooling, transmission lines, and automation.

Let's spend two days at a WOODS meeting next month discussing these two corporations. What happens to the corporation which has a history of systematically investing, budgeting and showing interest in being creative in those areas in which it is weak? What happens to the corporation which believes in not investing or showing interest in those areas in which it is weak, and in fact, forces them underground and, therefore, often forces people to leave when they are frustrated. What happens after no investment or interest is show in an activity and it is concluded that they were right in not investing, and therefore, conclude that no further investment should be made? What happens if this narrowness is accelerated by an attitude that blames those areas in which little investing and interest are shown for all the problems and all the delays in products development?

What happens if marketing is considered an expenditure that would be better spent in computer science and when the engineering managers are given the choice whether they should spend their money on computer science or marketing?

KO:313
(DICTATED 9/26/86 BUT NOT READ)

E.C.

Interoffice Memorandum

To: IVAN POLLACK
JACK SMITH
PETER SMITH
cc: see "CC" DISTRIBUTION

Memo: 5312156642COR23
Date: Tue 10 Jun 1986 12:05 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: EXECUTIVE COMMITTEE WOODS

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Executive Committee Woods are on the 18th and 19th, and I would like to take one whole day to outline a piece of literature that would describe Digital's product offering and the strategy that encompasses all departments of a company, school, or a government agency.

When we are asked to bid, we have to write everything from scratch and much of what we can't write we have to tell verbally. The potential customer is left with the impression he gets from the emphasis of the speakers. We don't have a brochure, booklet or videotape that gives our whole perspective.

It seems that each one of us wants to avoid this so that we can, standing on our feet, give our own perspective to the customer. We seem to be afraid that, if we write it down, the art and skill with which we speak will be lost.

I propose that we work one whole day going over this outline, and I would like you to find two or three of the best writers in the Company to run the operation. I would like to have you line up those people who are responsible for each part, to come with the outline of their part.

For those who have this overwhelming need to talk, and who are afraid that if it is written down we will lose this satisfaction, I suggest that we make a series of videotapes. Everybody who likes to talk can make their own videotape. Meanwhile, we can at least have it written down, and those who don't have a VCR can at least read the book.

In summary, next Wednesday or Thursday let's take the whole day and come up with the outline of a book describing our products and our simple strategy. Meanwhile, you line up someone to outline every portion of this book and two or three writers who will do all the work.

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KO.96
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Interoffice Memorandum

E.C.

To: IVAN POLLACK

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Memo: 5329979384COR74
Date: Fri 5 Dec 1986 5:06 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: REPORT FOR THE EXECUTIVE COMMITTEE

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I'd like you to immediately take responsibility for a weekly or monthly report to the Executive Committee on: 1) important quality problems, 2) delivery delays, and 3) introduction delays on new products.

I have been asking for this for a year, I believe, and I don't think that we have the inclination to get it from the people involved and so I'd like it to be your responsibility.

I think it is embarrassing and very poor attitude on our part for the management not to know of problems and to find out when we are visiting customers.

I also want to add to the size of the Executive Committee so that we have more people who are interested in these delays.

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E.C.

Interoffice Memorandum

To: WIN HINDLE*
JIM OSTERHOFF
JACK SHIELDS
JOHN SIMS
JACK SMITH

Memo: 5329658053COR88
Date: Tue 2 Dec 1986 11:19 AM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: EXECUTIVE COMMITTEE PRESENTATIONS - DECEMBER 2

I probably will not make the Executive Committee meeting today. There are three things I would like you to do:

1. During the month of December, please have the marketing groups prepare a list of current products with marketing plans for each of them, particularly those announced in the last year and a half. Also, please include marketing plans for those products to be announced in the next nine months.

   I assume we have to capture a large part of our territory in the next 12 months before IBM gets organized and to do this, we have to take short-term marketing interest in the products we have announced but not effectively marketed.

2. I would like Frank McCabe to discuss how he will include in the weekly sales report a section pertaining to quality problems reported in the last period of time. For now, we will leave it to his judgment as to which ones should be of interest to the Executive Committee.

3. I would like Jack Smith to say how he will report late engineering projects, late manufacturing projects, or late projects from manufacturing in the weekly sales report. For now, we will leave it to his judgment which ones are pertinent or of interest to the Executive Committee.

KO:484
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E.C.

roffice Memorandum

To: see "TO" DISTRIBUTION

cc: IVAN POLLACK

Memo: 5329562336COR47
Date: Mon 1 Dec 1986 12:25 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: MARKETING PLANS - DECEMBER WOODS

****
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I feel overwhelmed by the danger of IBM overtaking us the next two or three years as we finish up our product. I'd like to make this year's marketing plans the primary subject of the December Woods meeting.

As we have been listening to marketing plans, it appears more and more that they are used more as a means of jockeying for a position in next year's engineering budget than to sell the products we have today.

I'd like to have each of the senior managers responsible for marketing plans to organize their part of "Digital has it today" and their plans for selling it for review at the December Woods meeting.

It is becoming more and more clear that we are going to have to gain market share this year before IBM gets organized or they will take it first. We clearly have to set marketing goals for each group, and we clearly have to identify exactly what we mean when we say "Digital has it now".

The question is raised whether it is theoretically possible to do marketing within an engineering group. Are engineering managers so motivated by next year's engineering budget, and is their enthusiasm so high for next year's product that they cannot market today's product? If this is so, or if it is so in certain groups, we should face it immediately before IBM overwhelms us.

A good marketer does not have to be better in absolutely every feature and point. IBM can market when they loose on every technical point because they claim that the overall system is better if you buy it from IBM. Is it true that our marketers can't agree to market something unless every feature is better, even when the customer doesn't need the features?

KHO:ld
KO:477
DICTATED 12/1/86 BUT NOT READ

I n t e r o f f i c e M e m o r a n d u m

E.C.

To: BEL CROSS
WIN HINDLE*

cc: IVAN POLLACK

Memo: 5323463667COR77
Date: Wed 1 Oct 1986 1:47 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: PREPARATION OF REPORTS

I have been listening to my own lectures regarding the role of the chief information officer, and I have become concerned that like the people I lecture, Digital has not shown interest in imposing standards on the whole Corporation to make information flow easy and efficient.

Please come to the Executive Committee with all of the formats now allowed under electronic mail. We may have many electronic mail systems, but there is no reason why we should have more than one format. I get frustrated by the results of people's electronic desk publishing systems. I'd much rather have all memos the same, and I'd like to have the address of the sender and the sendee readily available with their addresses, phone numbers and the date. Please propose one format for the whole Company that we will impose on everyone.

For those documents which are on paper, please propose a quality of paper for this country, and eventually one for each country, which would optimize readability with weight, cost, and ease of destruction. When I carry memos around and when I try to destroy them, I feel that someone has imposed on us the highest quality paper that they feel is suitable for our position in the Corporate world.

Please also come to the Executive Committee with copies of all the periodical reports from various departments of the Corporation, and propose a standard for these reports. Today they look like they are all competing to see who will win the award for the most expensive, glossiest report. The Power Supply group has a periodic report that would be suitable for the Corporate Annual Report. This is an area where we shouldn't compete with each other internally to see who can spend the most money on a report, and standards would make them easier to read, to file and to destroy.

Please bring a list of standards of reports requested from the data processing parts of the Company. I understand that many groups are still insisting on doing things their own way. We've imposed standards on most things in the Corporation, but we haven't yet imposed them in the area of data processing and report preparation. There is no reason why we should not have common data definition across the Company.

KHO:mc
KO:321

DICTATED ON 30 SEPTEMBER 1986, BUT NOT READ

COMPANIES TO BE INCLUDED IN EMERGING TECHNOLOGIES REPORT

PARALLEL/MULTIPROCESSORS

Alliant
Astronautics
Axiom
Bolt Beranek & Newman
Burroughs
Counterpoint (Perkin-Elmer)
Culler
Data General
Denelcor
Elxsi
Encore
Flexible
Honeywell
IBM
International Parallel
Loral
Masscomp
Multiflow
Sequent
Sequoia
Sperry
Thinking Machines
Vitesse

SUPERCOMPUTERS

Control Data
Cray
ETA
Sullivan Computer Corp.

Convex
Scientific Computer Systems

JAPAN

Fujitsu
Hitachi
NEC

HYPERCUBE

Ametek
Intel
NCUBE

ARRAY

Analogic
CDA
CSPI
Floating Point
Mercury
Numerix
Sky
Star

RISC

Celerity
Harris
Hewlett-Packard
Pyramid
Ridge

FAULT TOLERANT

August
Autech
Computer Consoles
Corinthian
EnMasse
NoHalt
Parallel
Stratus
Tandem
Tolerant

DATABASE

Britton-Lee
Ordane
Metaphor
Teradata

OTHER

Argonne
Convergent Technologies
Icon Systems & Software
Inmos
Intellimac
Meiko
Norsk Data

~~28 May 86~~
E.C.

PARALLEL/MULTIPROCESSORS

May, 1986

Prepared by
Mary Rodock for
Technology Development
Program Office

A wave of new products and companies since 1984 has signalled the emergence of a new market and an interest in an alternate form of computing. These products are geared toward members of the scientific and engineering community who need more processing power to solve mathematically intensive problems. This new market, projected to be $1B by 1990, is known most popularly as the mini or nearsupercomputer market. It fills the price/performance gap between the supermini and supercomputer markets. The technology being employed is referred to as parallel or multiprocessing. This summary defines some of the terms which have been applied to these machines and describes fifteen companies and products which are either players in the new market or have been classified as parallel or multiprocessors.

IBM is the company to watch. IBM does have parallel/multiprocessors but it does not yet offer a product to compete in the minisupercomputer field. It has been said, however, that once a market reaches $1B, IBM begins to consider it ripe for the picking. The market itself is interesting because much has happened in a short timespan. Denelcor, the grandfather of parallel/multiprocessors, closed its doors in October. Millions of dollars had been poured into development of Denelcor's HEP computer since 1969, but the product was never accepted. Other entrants have experienced product delays, the most publicized being Encore. Other companies such as Alliant and Convex have appeared unexpectedly with product. More companies and product offerings are still to come.

A report prepared by Mary Rodock in 1984 for the Technology Development Program described all the companies and products in the parallel/multiprocessing field. She is preparing an update of that report which will be distributed in July. The last page of this report lists all the companies to be included in the update. If further individual company information or a copy of the report is desired, please contact Tom Gannon in the Technology Development Program.

The following terms are used to describe products. A chart and additional notes provide company/product detail. Note that in the case of companies which offer many products, the product described is the newest or top-of-the-line.

Uniprocessor - Computer with one processor.

Multiple Processor - Computer with more than one processor.

Parallel/Multiprocessing - These terms are often used interchangeably. However they are two different ways of processing. Theoretically, any machine that does multiprocessing could do parallel processing and vice versa.

> Parallel - A single job run concurrently on several processors.
> Multi - Several jobs run simultaneously on several processors.

Massively Parallel - A parallel/multiprocessing machine which has more than 100 processors and memories. These processors and memories can be configured in different arrangements.

Hypercube - An arrangement of a massively parallel machine which is based on work at Caltech. The number of individual processors is repeatedly doubled and then the corresponding processors are connected via high-speed links.

Array Processor - A computer that operates on arrays of data.

Vector Processor - A computer that operates on vectors of data. A vector processor also does scalar processing.

Scalar Processor - A computer that operates on scalar sequences of data.

Reduced Instruction Set Computer (RISC) - A way of improving processing speed by streamlining a computer's set of instructions to basic commands so that the computer has less instructions to process.

Company and Location	Date Founded	Public or Private	Total Venture Capital	Product	Architecture	Product Introduction	Total Corporate 1985 Revenue	Number of Units Shipped to date
ALLIANT Acton, MA	1982	Private*	$26.3M	FX/1 FX/8	Uni Multiple	July, 1985	$5M	22
ELXSI San Jose, CA	1979	Purchased by Trilogy 10/85	$35M prior to purchase	6400	Multiple	Shipping since 1983	$18M (3 quarters) ($11M loss)	70
ENCORE Marlboro, MA	1983	Public	$52.5M IPO	Multimax	Multiple	July, 1985	$491,000 ($22.6M loss)	7
FLEXIBLE Dallas, TX	1983	Public	$3M IPO	Flex/32	Multiple	1984	Not Known	7 (as of 11/85)
MASSCOMP Westford, MA	1981	Public	---	5000 Series	Uni or Multiple	October, 1985	$45.2M ($898,000 loss)	Not Known
SEQUENT Beaverton, OR	1983	Private	$19.9M	Balance 8000 Balance 21000	Multiple	Fall, 1984 Beta testing	$5M	65 (54 revenue producing)
BBN Cambridge, MA	1948	Public	---	Butterfly	Multiple	First system installed 1981	$160.6M	20
THINKING MACHINES Cambridge, MA	1983	Private	$16M	Connection Machine	Multiple	April, 1986	---	Sold 6
CONVEX Richardson, TX	1982	Private*	$32M	C-1	Uni	Fall, 1984	$13.5M	40-60
SCIENTIFIC COMPUTER SYSTEMS Wilsonville, OR	1983	Private*	$17.7M	SCS-40	Uni	March, 1986	---	To begin 7/86
IBM Armonk, NY	1924	Public	---	3090 (Sierra mainframe)	Multiple	February, 1985	$50B	500
CRAY Minneapolis, MN	1972	Public	---	X-MP Series Cray 2	Multiple	1982 June, 1985	$380.2M	115 (all models)
FLOATING POINT SYSTEMS Beaverton, OR	1970	Public	---	T Series	Multiple	April, 1986	$126.6M	Will ship Spring 1986
INTEL Beaverton, OR	1968	Public	---	iPSC iPSC-VX	Multiple	February, 1985 April, 1986	$1.3B (earnings of $1.5M)	30 Available summer 1986
PYRAMID Mountain View, CA	1981	Public (12/85)	$25.8M IPO	98X	Multiple	July, 1985	$33.9M	Not Known

* May go public in 1986.

The following sections summarize selected companies which offer products in the parallel/multiprocessing market.

ALLIANT

FX/1 - **A single processor superminicomputer with vector processing capability. Priced at $132,000.**

FX/8 - **High performance general purpose parallel/multiprocessor with vector/scalar capability. Expandable from 1-8 processors. Priced from $270,000 - $1m. Performance per processor: 11.8 Mflops/4.5 Mips**

- **Last round of venture capital (Dec. 1985, $11.5m) will be used to expand manufacturing capacity and inventories and to finance customer demonstration systems.**
- **Signed joint marketing agreement with Apollo and a joint marketing and development agreement with Sun.**

ELXSI

6400 - **General purpose parallel/multiprocessor which supports 1-12 processors. Priced from $390,000 - $3m. Performance per processor: 6 Mips**

- **Now has access to Trilogy's $40m cash reserves. Trilogy plans to put more than $30m into Elxsi during 1986-87.**
- **Development of new CPU behind schedule. New product introduction will now be late 1986.**
- **Layoffs 1985 and 1986.**
- **Trying to stimulate demand for multiprocessors by offering new packages and prices for two and four processor combinations.**
- **About half of Elxsi's installed base consists of uniprocessors.**

ENCORE

Multimax - **General purpose parallel/multiprocessor accommodating 2-20 processors. Priced from $115,000 - $350,000. Performance range: 1.5-15 Mips**

- **Product delivery one year behind schedule due to development delays.**
- **Streamlined organization in 1985-86. Now offers just one product. Experienced layoffs and turnover of key personnel.**
- **May have approximately $27m in untouched venture capital.**
- **Plan now is to market to academic and research institutions for about one year in order to have applications developed for the system.**

FLEXIBLE

Flex/32 - **A general purpose massively parallel/multiprocessor (scalar capability). The system is comprised of cabinets. Within each cabinet there can be from 1-20 processors. Up to 1,024 cabinets or 20,480 processors can be combined. The largest system built to date is a 20-computer model forNASA. Priced from $86,000 to $850,000 (for 20 computers). Performance per processor: 1 Mip**

C2C - **Flexible will be announcing the C2C processor which will provide both vector and scalar processing capability. The C2C and the current processors can be used together.**

MASSCOMP

5000 Series - Masscomp's first line of minisupers (Masscomp refers to them as micro supers). These are uni or parallel/multiprocessors with vector/scalar capability. The top of the line is the 5700 which has 4 processors. Priced from $15,000 - $250,000, Masscomp is aiming for the low price range in the minisuper category. The product is also directed at Digital and Hewlett-Packard customers. Performance range: Up to 13 Mflops/.7-10 Mips

- Masscomp's other line of equipment is engineering workstations.

SEQUENT

Balance 8000 - General purpose parallel/multiprocessor (scalar capability) which supports 2-12 processors. $50,000 - $250,000. Performance per processor: .7 Mips

Balance 21000 - Same as the 8000 except supports 4-30 processors. $139,000 - $500,000. Performance range: .32-2.25 Mflops/2.8-21 Mips

- Plan to combine RISC and parallel architecture in a single machine to make machine a true parallel processor.
- Just moved into new 86,000 sq.ft. facility.
- Goal is to become a major OEM supplier.

BOLT, BERANEK AND NEWMAN (BBN)

Butterfly - Massively parallel/multiprocessor supercomputer. 1-256 processors can be connected. Machine named for special switch used to connect the memories with the processors. Price is $7,000 - $9,000 per processor. Performance per processor: .5 Mips

- Product developed under a research contract from DARPA.
- BBN Laboratories, a separate subsidiary of BBN, is charged with designing and building the computers with multiple processors. A follow-on product to the Butterfly is being developed. The Monarch will link 8,000 processors and will perform at 8 Bips.

THINKING MACHINES

Connection Machine - Massively parallel/multiprocessor supercomputer. Connects 16,000 to 64,000 processors. Price is $1m - $3m. Performance: 1 Gflop

- DARPA supplied $3.5m funding for product development.

CONVEX

C-1 - General purpose uniprocessor with Cray-like architecture. Features vector and scalar capability. Priced at $500,000. Peak performance: 40 Mflops/3 Mips

- Retained Goldman Sachs as underwriter. Hoping to get $50m in IPO.
- Convex says last quarter was first quarter in the black. Project sales for 1986 of $40m.
- Should see a follow-on to the C-1 in 1986.
- Planning to incorporate RISC on machine.

SCIENTIFIC COMPUTER SYSTEMS

SCS-40 - General purpose uniprocessor minisupercomputer with vector/scalar capability. This is a Cray-compatible machine, unlike the other minisupers. It is targeted at Cray and VAX users who need high-performance vector processing. Price is $595,000 for entry level system. Peak performance: 44 Mflops/18 Mips

IBM

- IBM has several series of mainframes which can operate with either 1, 2, or 4 processors. The top-of-the-line mainframe is the 3090 or Sierra series. The 1 and 2 processor versions are currently available; the 4 processor version will be available 4Q86. Performance ranges from 28-40 Mips. Price is $4-$8m. The 3090 Vector Facility (3090 VF), a recent introduction to IBM's product line, can be attached to each processor in a 3090 mainframe which will then make the 3090 a parallel/multiprocessor with vector/scalar capability. The 3090 VF costs $370,000 for one, $600,000 for two. Performance for the 3090 VF peaks at 108 Mflops, with an average of 10-20 Mflops.

- Introduced the RT PC in January 1986. This is IBM's first RISC workstation designed for scientists and engineers. It has been available since March.
- IBM is involved with the development of a massively parallel/multiprocessor (the RP3) at New York University.

CRAY

X-MP Series - Parallel/multiprocessor supercomputer with vector/scalar capability. Available with 1, 2, or 4 processors. Prices range from $5m - $16m. Performance per processor: 210 Mflops

Cray 2 - Parallel/multiprocessor supercomputer with vector/scalar capability. Only has 4 processors and is priced at $17.6m. This is the top of the line Cray model. It is built differently from the X-MP series and also has a much larger memory. Performance per processor: 500 Mflops

- Cray supers have 80% market share for this class of computer.
- 40% of Cray sales are to U.S. government or government funded agencies.
- 1985 ROE - 28.2% 1984 ROE - 23.6%

FLOATING POINT SYSTEMS

T Series - A massively parallel/multiprocessor supercomputer based on a hypercube structure. It has vector/scalar capability. Up to 16,384 processors can be connected. Priced from $500,000 up (top quote was $60m for a 4,096 processor version). Computer currently has no software. Performance range: 128-262 Mflops

- FPS is a leading array processor and scientific computer manufacturer.

INTEL

iPSC - A parallel/multiprocessor supercomputer based on a hypercube structure with scalar capability. Available in 32, 64, or 128 processor configurations. Price range is $150,000 - $520,000. Performance range: 2-8 Mflops/25-100 Mips

iPSC-VX - Enhanced version of iPSC family which offers vector capability. Available in 16, 32, or 64 processor configurations. Price range is $250,000 - $850,000. Peak performance range: 106-424 Mflops.

- Intel Scientific Computers is the internal group begun in April 1984 which handles development of parallel processors.
- IBM may alter its involvement with Intel by swapping stock for convertible debentures in 1986.
- Intel has just had its worst year since it went public. It had a loss of $14.9m in 4Q85.
- Layoffs of about 3300 people in 1985.

PYRAMID

98X - Supermini parallel/multiprocessor which is the high-end of the 90X line of RISC processors. Can have 1-4 processors and price ranges from $260,000 - $500,000. Peak performance: 5.4 Mips

- Money from IPO is going toward research and development, marketing and working capital.
- 20-30% of Pyramid's business is generated abroad.

E.C.

Interoffice Memorandum

To: WIN HINDLE*
JIM OSTERHOFF
JACK SHIELDS
JOHN SIMS
JACK SMITH

Memo: 5324067717COR08
Date: Tue 7 Oct 1986 2:50 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: SUCCESSION

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A few years before Phil Caldwell retired from Ford, the Board laid down the law that no vice president was to ever discuss succession in public or try to get publicity for himself.

The most important job of a Board of Directors is to pick the Chief Executive Officer. Boards take this very seriously and prepare for it way ahead of time. They feel particularly offended when there is any public discussion of the subject.

We should all be very careful while being interviewed, and probably even in any informal conversations, that we never discuss the subject.

Some good answers when asked might be "Oh, I never think about it because Ken Olsen talks like he is going to live forever." Or, "I never think of it because its a Board of Directors' decision." Or, "I never think about it because with a young and healthy president, it doesn't seem important."

KHO:ld
KO:344

I n t e r o f f i c e M e m o r a n d u m

To: IVAN POLLACK

cc: see "CC" DISTRIBUTION

Memo: 5326965082COR01
Date: Wed 5 Nov 1986 1:16 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: MODEL OF DIGITAL AT NOVEMBER WOODS MEETING

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The Executive Committee Woods meeting that we assigned to develop a corporate strategy was taken over by formal presentations by the engineering staff, and it became as easy, as practical and as useful to the Executive Committee as paying someone to take the final exams for you in college.

I am dismayed by how poorly our alumni do in running companies. Each one of them was sure they knew many times better than I knew how to run a company, but somewhere in their experience, there are things that they never realized went on in the running of a company.

I'd like to spend the November Woods developing a model of the company, and I personally would like to be involved in the development, the travail, the argument, the compromising, and above all the learning. Everyone else may see it clearly in their head and don't need to get involved in work, but I'd like to burden them with work so that I can learn.

I'd like to make it a simple model so that we can accomplish it in a short period of time with no staff, only the Executive Committee plus three or four others such as Bill Hanson, Pete Smith and Bob Hughes.

First, I'd like to develop a pricing model. Where are our costs? Where are our unique, proprietary properties? Where should we charge high and where should we charge low?

I'd like Win to break the company up into groups. With this as a first step in making a model, we can develop the staffing, the space, and the money needs as a function of size. There should be four components to each of these factors. The first is the cover charge which is the fixed cost regardless of how much business there is. The second is that part which is proportional to the size of the business being aimed for. The third is the part which is proportioned to the size of the business obtained, and fourth is the amount being invested in the future.

For each of these components, we should develop a simple statement of the product, the goals and the size of the market for that product, how much of a market we expect to get, and what return we expect.

After we do this, it might be clear that some areas involve a larger investment and a large risk with little return. There may be some that are small and would appear irrelevant but are as good an investment as buying a small company, and we should continue even though they are small. When we present this to the Board of Directors, any weaknesses in our goals and strategies will become obvious.

I would like no staff at the meeting, but there is one part of staff preparation that I think each group should do. They should take every part of their organization and divide it into pieces each of which will be a budget center that will be budgeted, reviewed and measured, and they should list all the people and all the groups in the company which they plan to run without budgets. Executive Committee members should bring that to the meeting themselves without staff.

I'd like you to lay out the logical organization. Some of the pieces I think should be marketing which would be Bob Hughes, Pete Smith and various product marketing groups. Engineering should be special systems, TP, MIS, redundant computing, big computers, medium computers, small computers, etc. Selling should be a group by itself; software services and field services should each be separate groups. Order processing administration and field administration should be a separate group and so forth.

KHO:ld
KO:415
DICTATED 11/5/86 BUT NOT READ

"CC" DISTRIBUTION:

WIN HINDLE*
JACK SHIELDS
JACK SMITH
JIM OSTERHOFF
JOHN SIMS

E.C.

d i g i t a l

INTEROFFICE MEMORANDUM

TO: Ken Olsen
Jim Osterhoff
Jack Shields
John Sims
Jack Smith

DATE: 18 November 1986
FROM: Win Hindle
DEPT: Corporate Operations
EXT: 223-2338
LOC: ML12-1/A53

SUBJ: Logical Grouping of Digital

Following is my view of the logical functional grouping of Digital's organization. This view would make it easier to project population and program increases (as requested by Ken in his 5 November memo on "Model of Digital").

MARKETING GROUPS

Product Mktg.
Applications Mktg.
Industry Mktg.
MIS Mktg.

ENGINEERING GROUPS

Central Eng.
European Eng.
C.S.S.
Software Projects(SWS)
GIA Engineering (R. Yen)

MANUFACTURING GROUPS

Central Mfg.
Storage Mfg.
Low-End Systems Mfg.
GIA Mfg.

SALES GROUPS

U.S.
Europe
GIA

SERVICES

Field Service
Software Service
Educational Services

FINANCE, PERSONNEL & OTHER FUNCTIONS

Finance Security,
Legal, Personnel,
D.I.S., Administration,
Purchasing,
Quality, Real Estate
& Construction,
Mktg. Communications,
Public Relations

WH:em

attachment

WH11.86.1190

F.C.

To our Shareholders, Customers, Employees and Friends:

Fiscal 1986 was a good year for Digital. During a time when the computer industry was slow, we grew in revenues and profits, with a significant improvement in our use of assets.

We solidified our position as the leader in high-speed computer networks. We introduced more important new products than in any comparable period in the company's history. And, to get us even closer to our customers, we realigned our marketing organization to give it an industry-specific focus with solutions that directly address customer needs.

Digital's Board of Directors was expanded during the year with the addition of Robert R. Everett, recently retired president of The MITRE Corporation and a renowned computer pioneer who helped lead development of the Whirlwind computer at MIT in the 1950s. We are privileged to have Mr. Everett's distinguished technical credentials and management skills at our disposal.

Digital has undertaken a difficult mission. Our goal is to connect all parts of an organization – the office, the factory floor, the laboratory, the engineering department – from the desktop to the data center. We can connect everything within a building; we can connect a group of buildings on the same site or at remote sites; we can connect an entire organization around the world. We propose to connect a company from top to bottom with a single network that includes the shipping clerk, the secretary, the manager, the vice president, even the president.

The difficulty of our mission goes beyond the technical challenges involved. Change also becomes an important factor. Progressive companies analyze their organizations, understand their goals and then completely change the way they run their business in order to make them more competitive and more effective in pursuing their goals. They recognize the benefits of tying their entire company together with a single computer network that is as accessible and easy to use as a telephone system.

But for many other companies the change to open, company-wide computer networks is happening more slowly because of traditional centralized computing approaches. Without meaning to, those in charge of such companies stifle the involvement and creativity of many of their people by restricting the availability and flow of information throughout the organization.

In the organization of the future that we propose, the free flow of information creates excitement and motivation and enthusiasm, and helps unify the company. The information becomes a strong internal catalyst and a powerful competitive tool.

Today's Digital is very much this kind of organization. We have become a truly unified company with one clear strategy and one strong message, and everyone in the company is working toward a common goal. And yet, we have been able to retain a strong entrepreneurial spririt. We have achieved this by creating the kind of organization we are proposing for the future, one which is tied together by an accessible, easy to use computer network.

Included later in this report are comments from some of our customers for whom Digital's ability to interconnect their organizations – and in some instances to link them to others – has created a significant competitive advantage.

All of us at Digital are far more excited about our products and the future than at any time in the past. We have more ideas than we've ever had on how to improve current products and develop new ones – so many, in fact, that we need to use great discipline to limit our development activities to only those products which will contribute directly to our mission.

Kenneth H. Olsen

Kenneth H. Olsen, President
September 8, 1986

E.C.

DIGITAL EQUIPMENT CORPORATION
EXECUTIVE COMMITTEE
ROLES & RESPONSIBILITIES

1. Develop, articulate, and support the Corporate system of organization and management, and provide the frameworks necessary to implement defined strategies.

2. Provide a leadership role by reinforcing the desired managerial philosophies, practices, and processes by strict and highly visible adherence to these stated principles.

3. Ensure that there are management support systems providing for the identification of high caliber personnel, the development of management education programs and effective compensation programs.

4. Ensure that all functional entities of the Corporation are integrated with regard to all strategies, plans, and business proposals and that decisions are made on a Corporate rather than a functional basis.

5. Ensure the existence of a Corporate plan, including long-term financial objectives, and instill the management disciplines that are necessary to assure adherence to that plan.

6. Establish budget direction and develop and implement plans to achieve the budget.

7. Take responsibility for short-term and long-term financial results. Review actual and forecast performance and implement necessary changes in tactics in response to changing business conditions.

8. Review all plans and proposals that will be brought to the Board of Directors and all that involve long-term commitments whether or not they receive Board review.

9. Own and be accountable to the Board of Directors for the commitment of all Corporate resources in support of approved strategies, plans, and business proposals.

10. Set priorities, allocate resources, and provide counsel to other management committees.

11. Ensure that good management practices are followed throughout the organization.

4/85

F.C.

Interoffice Memorandum

To: WIN HINDLE*

cc: PIER CARLO FALOTTI

Memo: 5351533784COR27
Date: Thu 9 Jul 1987 5:15 AM EDT
From: SHEL DAVIS
Dept: SNR ORGANIZ CONSULTANT
Tel: DTN 821 - 4155
Adr: GEO - GEC/606A

Subject: CROSS-FUNCTIONAL TEAMWORK

Here are the points I discussed with you in Montreux regarding cross-functional teamwork:

1) The most senior people in the company, (15-20), need to understand and appreciate Ken's behavioural impact on cross-functional teamwork (it is not very positive). Therefore:
   a) assume Ken won't change
   b) help him build around the "One Company, One Strategy .. message so that conceptually he is supportive and - for the rank and file, actually leading the drive.

2) Load the company with team rewards: Country Management Teams (in place in Europe), account teams, regional management teams, etc.

3) Aggressively publicize the team awards (company newspapers, management meetings, cafeteria talks, new employee indoctrination, etc.). Particularly spell out the behaviours associated with excellent team performance (e.g. people working unselfishly to a larger goal).

4) Pro-active emphasis on, wherever sensible and possible, the structure of work into cross-functional teams, at all levels in the company, from the executive committee to the European Field Office Model, to account teams and factory work teams.

5) Very high and continuous priority on cross-functional account management. It will take us at least two years - and more likely three years to get to where we want to be.

6) Keep high priority on order fulfilment and other systems which are inherently cross-functional and make strong, clear demands on the teams that work on these systems.

7) In management training, be sure there is a very strong bias to giving generic training in cross-functional classes. Why not have a stated policy on this ?

8) Increase the number of management cross-functional transfers. Some of these have produced spectacular results with respect to teamwork (e.g. Shields, e.g. Falotti).

9) Teamwork measurement: besides everything else we might do, ask people who are two and three levels down in the organization to propose what the measurements should be. They have a unique perspective.

10) Be patient. I believe it will take at least 2-3 years of concerted effort to change the culture as much as we would like to.

I hope this is useful. It was good seeing you again.

F.C.

Interoffice Memorandum

To: see "TO" DISTRIBUTION

cc: IVAN POLLACK

Memo: 5363274730COR24
Date: Tue 3 Nov 1987 3:52 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: IT'S TIME WE DECIDE WHAT BUSINESS WE ARE IN

****
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Let's prepare for the Board a statement of what business we are in. Let's make a first pass of the presentation in December. Let's discuss it again in January and ask for approval in February. I would also like to develop a taxonomy for our business. These lists will help us make choices and communicate our decisions. Then, we will be able to do a better job of budgeting for next year.

The first is a list of all industries we plan to serve. This probably is simply a list of the industries that Hughes and Witmore are covering.

The second list is a list of the problems we propose to solve and the solutions. The next one is the products that we need in order to fill this. Then let's make a chart showing staffing, budgeting, scheduling, who is responsible, and where it sits in the organization for every product.

The next is a list of the CPUs and architecture we are supporting and planning. The next is a list of software systems we are supporting.

In order to make up these lists, we have to address the questions I asked yesterday about Corporate product strategy.

This will involve a lot of work before we decide exactly what our business is and probably will involve a number of long WOODS meetings to settle all of the issues.

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Interoffice Memorandum

To: JACK SHIELDS

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Memo: 5363957493COR87
Date: Tue 10 Nov 1987 11:00 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: CHOOSING NEW PRODUCTS

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I like the sound of the products you found at BB&N, but I don't think we should go into new products until we figure out what the Corporation wants to do.

I want to work very hard in the next few months in laying out the Company plan. This plan should be a list of problems and solutions the Company wants to accomplish for customers.

For each solution there should be a list of hardware and software products that are needed. We should then define those we have, and for those that we don't have, we should set out a plan to obtain them or to generate them internally. When we have this list, it will be very easy to make decisions about what external products should be purchased. If it is not on the list, we don't buy it.

This plan should be broken down into all the segments in which we are interested. One of these, of course, would be wide area networks. We'd lay out our approach to wide area networks, identify a strategy, schedule, budget, and a list of products. If BB&N's product is on the list of things that we need for this strategy and we don't already have it, we should consider all the sources for this product and take the best one, which might very well be BB&N.

Today our key products do very well without a Corporate statement of goals and a systematic way of accomplishing them, because people are very confident, they concentrate on the problem and we all have an overview of it.

I'm terrified about our way of making decisions where no one is particularly interested in the project, the plan is a collection of random input, and the decision making body takes interest in the subject only one or two days a year. We should, with haste, formalize a Corporate strategy for all the areas in which we plan to be a leader.

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I n t e r o f f i c e M e m o r a n d u m

To: DOM LACAVA
JACK SMITH

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Memo: 5363957689COR92
Date: Tue 1Ø Nov 1987 11:Ø4 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-23Ø1
Adr: MLO12-1/A5Ø*

Subject: WHY WE ALWAYS DO POORLY IN THE LOW END

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When, at the Annual Meeting, people asked why we didn't buy Apple, I said we'd kill Apple if we owned them. That is a good answer, and we just won't buy Apple. However, we might kill our own low end that we have to succeed in if we don't lay out a strategy.

Steven Job is now making a new low-end educational computer. Like a good engineer, he is working to satisfy himself and driving hard to make something which he thinks will be great and which satisfies his standards in innovation, excitement and quality products. He might succeed or fail, but for sure he will have an interesting product, and there will be genius shown in many ways.

This is quite different from the way a big company does it. In the big company, there are many many people who have to be made happy with every project. There is an implication that everybody involved, or anybody with seniority and dignity or anybody with a title such as safety, human factors, sound or power supplies, has to be made happy. This means that it takes full time to define a product which will get by everybody's judgment. There is no time left for creativity, for invention, for genius, for excitement or for fun in a product like this. If it is ever possible to get a product through the system, it for sure will be dull and no great success.

We probably have more people passing judgment and insisting on saying what should be done in our low-end development than we have people working on the products. With this system, there is no risk of success.

Many big companies have just given up and decided that they will buy products from creative, innovative people without the help of large staffs.

I think you ought to lay out a strategy for new products that explains how we are going to do better than we have in the past, and better than other big companies have done in creating new products.

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To: JACK SMITH

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Memo: 5308769630COR67
Date: Wed 7 May 1986 3:23 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO10-2/A50*

Subject: BUDGETED TECHNOLOGIES

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As part of the budget review for the Executive Committee, please have charted out in a Gant chart the various technologies that we are working on. Then let's break the calendar into three year intervals, which will be 1987 through 1989, 1990 through 1992, and 1993 thorough 1995. Let's list all our R & D and developmental projects in a vertical column and then draw a line across the years that we think those technologies would be key to the company if they did work out. These would include hardware, semiconductor, interconnect technology, computer architecture, software approaches and manufacturing techniques.

This would give us a feeling for the future, where investments are and where investments are not being made. It would also help us make decisions such as continuing Aquarius. Is the motivation in all those dollars basically to get a machine called Acquarius or is it to have an interconnect technology that will be useful through the nineties.

I strongly believe that new technologies are best developed with an immediate project in mind; but this should not confuse our financial analysis, and we shouldn't call these things just current projects if our main goal is off in the future. Above all, we should be sure we have developments coming in all key areas.

If we keep this chart in front of us, it would help many of our people to organize their thoughts into programs that should be carried out, particularly in the area of software and architecture, to do specialized computing such as seismic work, TP and simulation.

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Interoffice Memorandum

To: see "TO" DISTRIBUTION

Memo: 5310748825COR04
Date: Tue 27 May 1986 9:38 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: ENGINEERING PROJECTS AND BUSINESS PLANS

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Some of the hardest questions that come up in the Engineering budget should not be there.

The Engineering budget should include long-range product development, expirations, technology development and research.

When the proposal is to exploit something which has already been developed, or which has been manufactured by someone else, and to accomplish those things necessary to make it a Digital product, the proposal should be called a business plan, even though there is some engineering included in it.

The business plan should, first of all, be presented by that person and that team who propose that they will take full responsibility for that project. They should propose that they will lay out a schedule and budget and that they will supervise and take responsibility for every single item in that business plan. They must claim to take the responsibility for working out every single detail of the customer's requirements, document it, market it and be sure that all the infrastructure is worked out. They should take all the responsibility for that project, even though the rest of Digital may not be enthusiastic about it or ready for it.

I want to emphasize that no way should we let someone say that they want to spend money to take someone else's product to get it ready for Digital's shipment with the vague implication that miraculously "the organization" will take care of all the details and the marketing to make it a successful product.

I strongly suggest that we take all business plans out of the Engineering budget and have them run directly by someone else. I also suggest that Jim Osterhoff set aside two or three people to outline all the parts that should be in the business plan to make it easier for those who prepare the plan and for those who pass judgement on it.

Proposing that we sell our disk and tape units as a new marketing entity should definitely be a business plan and it should be presented to the Board of Directors as such.

Proposing to add someone else's optical disk mass storage to our product line should be a business plan and not an Engineering

budget item.

This is clear. It might also be clear that we don't need more Engineering money spent on Office. What we need is a business plan. It is already a developed product line to us, but it is missing a large amount of details, infrastructure and applications. It is clear that we are never going to get these things when the limit of our thinking is focused on those projects which certain engineers want to do.

It is very clear that we are not short of new projects and new ways to make money. We are short of the disciplined, organized business approach of getting all the details done. We have learned to have a disciplined, business-like approach to the design of busses, networks, protocols, and CPU's, but it appears that we believe "somebody else will take care of the business details."

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Interoffice Memorandum

To: see "TO" DISTRIBUTION

Memo: 5308770647COR82
Date: Wed 7 May 1986 3:46 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO10-2/A50*

Subject: WHY OUR PEOPLE FAIL

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Sometime let's discuss why almost every one of our senior vice presidents, when they leave us and go into business they fail.

I think our engineering project might be a good place to start. People are led to believe by our financing that they deserve the very best building facilities. Part of the game is to talk us into the most expensive possible building for engineering. Then we lead them to believe that they have a right to the ultimate in computing and that they have a right to get rid of all their older terminals, PC's and computers when new ones come out. We do this by having the staff and Executive Committee take responsibility for managing the projects. They do not have to fit within a business constraint of making a profit and balancing all expenditures with possible intake. We give them what they ask for or we cancel the project.

What happens to the company when those of us who have been used to balancing things are gone and we are left with those people who, like those who go out to other companies, have always thought that buildings, computers and money comes free?

I am sure the staff and the controller think Ken Olsen is crazy in wanting to spend money on marketing, system engineering, future developments and high-speed computing. If they could only get me to cut out those things, look at all the money we'd make.

I, on the other hand, feel they should concentrate on saving money on projects that are getting nowhere, facilities that aren't necessary and capital that doesn't have to be spent and concentrate on efficiencies that come about by having managers who are in control.

I worry more about those people sitting around unmotiviated and concentrate on those new buildings which have a low percentage of usable space, concentrate on the huge investment in computers to see how much of it is really necessary and not concentrate on trying to cut out the marketing systems engineering, the software and the technologies, without which, we will never survive. Defending or ignoring the excessive wasted space in the expensive building, the unmotivated groups and inefficiencies is not going to guarantee our future.

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Interoffice Memorandum

To: see "TO" DISTRIBUTION

Memo: 5308050773COR66
Date: Wed 30 Apr 1986 10:10 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO10-2/A50*

Subject: IF DIGITAL WERE RUN LIKE A REAL COMPANY

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On Monday I was faced, and today I will be faced, with a quote from one of our managers who said, "If Digital were run like a real company, think how well they would do."

In the past, I would answer this by saying real companies, like Data General and Honeywell, etc. have their decisions made by the boss and the staff, and indeed they are very efficient. I would also say that, at Digital, plans are proposed by the people who carry them out, and the motivation results in efficiencies, breadth of products and breadth of markets that this industry has never seen before.

But alas, I can't answer that way any more. The Executive Committee is driving hard for us to be "a real company", where the staff makes the decisions on markets, products, and strategies, and where management makes decisions on numbers for the functions and, as with a real company, the people who need the motivation and who have the responsibility are not involved.

Early this morning, I am trying hard to prepare an answer for FORTUNE magazine when they ask about the quote. To be honest, I have to say we are driving hard to be efficient, like Honeywell.

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cc: IVAN POLLACK

Memo: 5307461532COR02
Date: Thu 24 Apr 1986 12:08 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO10-2/A50*

Subject: REVIEW OF THE "NEW DIGITAL"

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In about three weeks it will be exactly five years since we initiated the New Digital. I am afraid that to most of the Executive Committee the New Digital meant getting rid of less competent people and putting in the great, competent people we have today. My goal is broader. I want to reinstitute a system which will bring the good people to the top and insure that we will have good results in the future because of our system, and not be dependent upon personality and staff.

However, I am afraid that the people who have come to the top suffer from the same problem that the people who previously were at the top.

They feel, as did their predecessors, that now that they are in charge there is really no need for process. They feel that they are running things and they will do it all themselves.

This scares the living daylights out of me. This is what got us into trouble before the New Digital.

Before the New Digital I was never able to get from Engineering a product plan or a budget for the PRO personal computer. I understand that not being a computer scientist I was not mentally capable of understanding the subtleties involved. But, I don't think the computer scientists proved that lack of process and financial control and traditional planning and budgeting made the PRO particularly successful.

Before the New Digital all the budgets for all the groups in Europe were done in Geneva, with frustration and lack of motivation left in each country.

Before the New Digital each District felt dumped upon by rules, regulations and budgets.

Alas, after five years, with all apologies for not becoming a computer scientist, I have to say that in the ten years before the New Digital and the five years after the New Digital, I have never been allowed into the financial planning, the goal setting, and the promised returns and financial justification in even the traditional business strategy involved in the Engineering decisions. I have yet to receive a list with all the requested budgets from each country in Europe, or each District, or each GIA country.

A year ago the staff proposed, and the Executive Committee was enthusiastic about firing five thousand people. After the catastrophic quarter, the result would be that we would be like every other computer company, which is exactly what all the financial analysts and investors wanted. It was considered immoral, but I asked the business units what they wanted. Even though the staff proved that none of their wishes could be done, it did change the nature of the Company. I have not had a systematic presentation, inspite of how many times I have asked for it, of what each business group promises to return for an additional twenty percent or what would happen if we cut by twenty percent. I understand that the staff doesn't trust me, and I understand they have a limited view of my mental capability.

I would like to review the goals of the Corporation. Is the primary, major, overwhelming goal in the Engineering budget to make sure that there is no duplication and that we will never in the future have two computers in the same space, coming at the same time, so that we have to make a decision to pick between one of them? I would like a discussion as to where we see business in the future and what parts of the business we expect to make our profit.

I would also like to hire an outside consultant for a review of the history of our Engineering bugets. Where have we made money? Where have we lost money? How much of our budgets produced absolutely zero return or loss? What were the characteristics of these budgets? As you know, my observation is that we do well in those engineering projects which are of vital and continuing every day interest to the Executive Committee and Engineering management. These are projects in which there is often competition, such as: CD ROM, IVIS, Database devices, Colorado Springs, in which we discover that nothing ever comes out. I would guess that the rationality, the boredom, and the lack of competition introduced by the staff is the kiss of death to the engineering project, and that the commitment from someone proposing, promising and committing all of his professional pride to a project and best of all with some competition, are the projects that result. If our drive is to prove that we can, with utter boredom and rationality make a success, even though we have never done so in the past, let's set that out as a goal, and have whoever is promising it put his name on the line and be clear that he will prove that this is the way things should be done.

I would like, at the next Executive Committee meeting, to have each member state what he sees in the New Digital. Is it simply: now that we have good guys we can do the same things that the old guys did and that it will work forever? Do we have any more process than we did when we were getting into trouble? What are the goals and how do we get them?

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Memo: 5306578205COR74
Date: Tue 15 Apr 1986 4:45 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO10-2/A50*

Subject: TWO WAYS OF DOING BUDGETS

In history, we have done budgets two ways.

One way is to have the Executive Committee, or Operations Committee, evaluate each groups potential investment and return, and make business decisions on each one.

The other way is to have the Controller have the Executive Committee set the R&D budget, the desired return, and the business decisions are then made by the staff.

Those years when the staff made the business decisions and the "so-called independent business units" felt they were talking to disinterested staff about arbitrary percentages, the budgets were a catastrophe.

I have said two dozen times in the last 3 years that I want the Executive Committee and the Board of Directors to make the business decisions. I do not call fixing the R&D budget, or the percentage of return running a business.

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Memo: 5305773948COR24
Date: Mon 7 Apr 1986 3:34 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO10-2/A50*

Subject: MAGIC CHARTS IN ENGINEERING

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In the early days of Manufacturing, products lines would informally, all day, every day, by everybody, keep changing the orders for products with the result that we never made any schedules.

When I insisted on magic charts where requests were formally made on certain days, and very formal commitments were made, no one liked the idea. Product lines liked the system where anybody could change product line requests and our manufacturing people loved to have the excuse for failure.

However, when the magic charts were implemented, the results were marvelous. We had clear simple goals, no misunderstandings, and when we failed, either marketers had requested the products or manufacturing failed in delivering. The result was that we rarely failed.

I would like us to immediately institute the equivalent magic charts in Engineering, where requests for software, hardware, or other products are formally made or proposed, formally agreed upon, budgeted, scheduled, and measured. When changes are requested, they are done formally with a formal answer.

I do not want to hear again people saying: "I told so-and-so everytime I met him in the hall what he should be doing but he has never done it". I want to be able to look at a chart and see who failed.

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To: see "TO" DISTRIBUTION

Memo: 5305770896COR99
Date: Mon 7 Apr 1986 2:50 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO10-2/A50*

Subject: FORMAT OF 1987 BUDGET

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I'd like the 1987 Budget presented in a format showing that each group has a systematic approach to their plan. Each plan is broken down into components, each of which is staffed and budgeted, with clear goals and measurements.

I'd like the product budgets broken down into three components. (I'd like Bob Hughes and Jerry Witmore to propose how Industry Marketing budgets should be broken down.) Here are the components for product budgeting:

I. Broad Architecture

If we interview a large number of customers, we will find that they will request an infinite combination of the software systems, buses, interfaces and variations of local area networks. It is exceedingly important that each group make a clear, simple statement saying whether they are going to try to follow all the standards in their markets or whether they are planning to be big enough in their markets to set a standard and get people to follow our standard.

Setting standards is dangerous. It has to be done well, but following everybody is suicide.

I would expect most products to follow the corporate standards for software, hardware, buses and networks.

A. Architecture for Factory

Factories consist of many components, robots, machine tools, measuring devices, controllers, etc. No computer manufacturer has been serious enough about this business to set a standard, and so there are many, many standards, many interfaces, many buses, and many protocols. General Motors, out of frustration, tried to develop MAP, but they didn't go after the main problem.

Like good salesmen, we've always asked the customer what he wanted and tried to satisfy those wants. This means we try to do everything for everybody. In stating an architecture for our Factory operation, we have to first make the clear, simple statement: Are we going to follow everybody's standard, or are we big enough to set the world standard

for the Factory and get almost everybody to follow us? How many of the small manufacturers would be delighted to have us do this and would immediately jump on board?

We have a grand Factory announcement in October. Could we develop a simple strategy which says we will use the corporate strategy, buses, Ethernet (and MAP), and corporate software systems? At that October presentation, could we not only show off some delightful hardware but announce an architecture for the world?

Could we get some key manufacturers such as Allen-Bradley, Cincinnati Milacron, Foxboro Co., to join in with us? Could we get one or two major manufacturers to join in with us? Could we have that announcement at a customer site or could we, at one of our sites, demonstrate this architecture operating?

Can we, by October, demonstrate an architecture that will be elegant, delightful, simple and beautiful, that consists of MicroVAX, Ethernet, thin wire and our serial lines, which take care of 90 percent of all the devices that go into a factory? Or, are we a victim of the old rule of sales which says do what the customer wants? Or, are we a victim of the fact that CSS, SWS, the factory group and the Com group all have a part of this? Instead of a simple architecture, do we have to have a hodgepodge of the wishes of several parts of Digital?

Can we state a simple architecture for the software we propose for the factory? Is there a simple way of integrating Baseway, VMS, UNIX and maybe MSDOS so this too feels elegant and simple? Can we convince a few big customers and make this part of our presentation in October?

II. Engineering

The engineering projects should be itemized listing who is in charge, what the investment is, when and what the returns will be, and what measurements can be made during the year. It is important that each one of these pieces have someone in charge who is responsible for these budgets and measurements. A person responsible for that engineering should always speak for it.

Those engineering projects which are important but which are not staffed, scheduled and budgeted, should also be listed as such.

A. Example of Engineering Budget

Can we take our Nets and Coms budget and break it down into pieces with names in charge, dollar investment, dollar return, and ways of measuring it through the year? Can we break it down into those parts which support the main thrust of the corporate networking architecture and those which are doing special cases? Could we identify those areas which are incomplete and limiting the Corporation but

are in our main corporate architecture?

For those that are not part of the main corporate architecture but are specialized cases because of the history of the customer, could we identify the importance of the Corporation like what the return is for the investment engineering with returns and inventory? Can we also list those things requested by other product or industry marketing groups that are not being done?

B. Another Example of Engineering

There is perhaps another category of engineering that's a project in which most engineering is not done within the group. For example, Transactional Processing.

Here is a product in which most of the engineering both hardware and software is done outside the group responsible for it. This means even more system organization and assignment responsibility than when the engineering is done completely within a group. The projects should probably be listed, first of all, by those that can be done easily and quickly. Someone should be assigned to be responsible for the planning, budgeting and results of each of these groups, and each should be responsible for the completeness of all the work being done. If some components of the system are not scheduled and committed, he should be sure that the project is cancelled or modified.

The result of scheduling TP this way will keep us away from the grand plans with an infinite number of things that we never can get done, and force us into doing those things which we can get results from in the near future and still budget the long-term projects.

III. Marketing

Most of our products have many applications and markets. These should be itemized and grouped. Each group should have someone responsible who should have his own budget, his own set of goals, his own measurements and who should speak for results.

Most of our products have such a divergent list of applications and customer types, that it is obviously impossible to cover with one marketing group. One group cannot be expert in each area, have their heart in each area, watch it thoroughly and be emotionally involved to the degree necessary for good marketing.

A. Example of Marketing

For example, the workstation business probably has the largest number of markets to service. It is the one in which we all tend to have our own interest, and we all tend to get most interested in that part of the market which, we are either loosing or which is technically the hardest.

For our marketing budgets, we first break down all the

applications and markets by size and maybe by return. Then we should list them, in order of importance, with their staffing, plan, budgets and, above all, who is in charge and responsible for that budget.

Who is responsible for the Office applications, our biggest end market? Are we taking care of all the details and are we planning all the important applications?

Are we planning to sell a machine to every road department of every town in the country? Are we planning to sell a map-making system to every paper company and every large owner of property? Are we planning to sell a system to the maintenance department of every factory to maintain the plumbing, power, water, sewerage, and other systems in each factory? Are we planning to sell the hardware for some magnificant pagination system that will be used for every newspaper, magazine and publisher in the country?

Like all other products, but maybe more so, the workstation applications are almost infinite, but they have to be broken down, assigned responsibilities, budgeted, staffed and measured.

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Memo: 5305456535COR24
Date: Fri 4 Apr 1986 10:49 AM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO10-2/A50*

Subject: PRODUCT STRATEGIES

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I think part of the April Executive Committee Woods meetings and all of the May Executive Committee Woods meetings should be spent reviewing, in simple terms, the various product strategies. I'd like to do this in the Little Brown House, because I'd like to limit the attendance to the Executive Committee, and no more than two or three outsiders, so that the conversation is not with 30 people who might intimidate the Executive Committee and who would discourage interchange with the Executive Committee.

I'd like simple but basic questions to be discussed, so we can be sure we understand the general goals and forms of measurement and the influence of these strategies on questions such as inventory and other assets. Also, we'd like to have a feeling for how simple or how complex our message is, so we can estimate the efficiency of our sales operation.

I think Strecker should outline the general goals and mesurements we have from the computer science point of view, and outline our budget, program, goals, schedules and staffing to accomplish these. There should be questions like: How many mips for each type of technology are we able to get? How many transactions per second are we able to get per mip? We should also outline how we measure our skills in data base management. We should also outline our present skills, goals, schedules and commitments to the various aspects of redundant computing.

I think it would be good if Bill could present, on one chart, all the important figures of merit including bus speeds, in/out rates, CI rates, useful mips, and the software measurements that would show, in the next five years, what improvements we have scheduled and budgeted. Each line should identify how far ahead we have agreed on the specification so that we can budget and staff.

I'd like the rest of the discussion to be looked at from the customer's point of view, so I think Bill should cover those computer-science-type points of view which some technical users and some unusually clever MIS directors would look at.

Then someone should cover the whole area of our traditional time-sharing users. How does this break down into categories, and what do they look for? What makes them so loyal to Digital, and why are some so fervent in their desire to go elsewhere?

What do they really use their computing time for?

B.J. then should give a general run down on networking. How serious is it if our key account, where we have the most friends and made the biggest investment, is going to IBM twisted pair token ring? Is this the most serious loss we have had, and will this lose much of the market for us? What has been the response of our own secretaries and our own engineers to DECconnect and Ethernet? Why do the vice presidents on the second floor of Building 12 want Gandalf switches and not Ethernet?

How much of our networking investment is made in these somewhat obscure and unusual cases, and how much is concentrated on making the user of Ethernet love Ethernet?

B.J. should then, as a separate subject, cover the architecture for Office. I think B.J. should describe the present day architecture for Office and drop the attitude of running off in all directions and trying to make everybody happy. Do we now have an elegant, simple system that the average user will love? How does the market break down between those who want to be trained only once every several years and then do the same thing? How much of it is like people thought the personal computer business was? They want new things every month, and the most colorful, flashy software is what is important. For the bulk of the market, how big an expense is training and retraining for the users?

Bob Glorioso should come and outline Transactional Processing. He should define it, propose the taxonomy, and then point out where the biggest market is and where we can make a contribution. How much of the market for Transactional Processing is more or less satisfied by IBM today? How much of it is not yet touched and is wide open to us, and how much of it is done by IBM today but people are unhappy? What part of the TP market can we do better with today until we get a great data base management system and great TP software?

John Mucci should come and outline our architecture for Laboratory. We started a program on this in a Woods last summer, but it still looks like we are going nowhere in all directions. What are the specialized applications and gadgets that laboratory people need, and how much of each kind are needed? How much of the laboratory needs low data rates and how much needs very high-speed data rates? How important is simple elegance in the laboratory, and how important is simple, elegant, easy to use, easy to learn, easy to remember equipment to the laboratory? How important is it that they get a technician off the street to run the equipment, or is it more important that the equipment be of the highest measurements as far as speed. Do we have to introduce one or more non-Digital busses in order to satisfy this market or can we get by with just BI, QBus and serial lines? Do other manufacturers of general computers support MASSBUS and VME or is the market waiting for us to standardize?

Dave Copeland should present the architecture of the Factory. Are we trying to satisfy every customer and every component supplier, or are we laying out a strategy which says our products are simple, elegant, easy to use, easy to remember, easy to

change, easy to plan yet so easy that you can install it and plan afterward? Do we need new busses like the Bit Bus that can cover the factory, or can we do it with our MicroVAXes and serial lines?

Please include presentations by the groups I can't think of off the top of my head.

The simple question I'd like to have answered, and I'd like the Executive Committee to be assured of, is: Are we maintaining a simple corporate architecture and striving toward simple, easy-to-understand, elegant ways of doing it that are consistent through the Company? Are we spending all our resources and trying to adapt to IBM terminals, Allen Bradley buses and every lab interface?

I would also like to, for each of these markets, lay out in chart form what the customer sees and how he defines the program. What TP applications would define their program by the number of operators and terminals, the size of their inventory and the number of transactions they cover per hour? At what point do they know enough to design the system themselves and discuss the intricacies of data base management and transactional software in the laboratory and the factory? How important is it that they have every way of hooking up to everybody, and how important is it that it be a simple, elegant system that is easy to fix, easy to understand, and easy to plan?

What does the customer see, how does he visualize the system, and how does he want us to discuss it with him?

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KO5:S5.31
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Ivan EC

Interoffice Memorandum

To: see "TO" DISTRIBUTION

cc: see "CC" DISTRIBUTION

Memo: 5305167927COR85
Date: Tue 1 Apr 1986 2:00 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO10-2/A50*

Subject: SOFTWARE WOODS

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Let's have a Software Woods. I think it is time we layed out how we do software and what the differences are between the various software tools and the various kinds of applications.

It seems to me there are probably three ways of how we do projects. The projects coming out of Seattle are proposed by the group who are going to do the work. They do not complain about other groups, they do not propose what others should do, and they do not propose things that are inconsistent with each other like we tend to do when we are telling others what to do. The Seattle group also documents everything carefully, and they are reviewed critically and lovingly by the rest of the company.

The second example is the way we do data base software in Colorado Springs. In this case, a group owns the product. What they want to get done is what gets done, and when they loose interest, it doesn't get done. They are nice people with good intentions, so it's not very offensive. The products usually have very long-time schedules and, as the schedules come close to an end, they get more ambitions that lengthen the schedules even more. Because they own the product and because they have no direct customer that they have to work for, there is no pressure to get things done quickly but they feel enormous pressure to make sure there is nothing left out and that it is very elegant and very general.

The third way is the way we do Office and TP where everybody throws specifications, desires, wishes and ideas in the air, and criticizes ahead of time that Heffner or someone won't pull them out of the air, organize them, and do everything that anybody ever asked for.

A fourth example is in Software Services. Software Services has the advantage of having a direct customer who is paying by the hour to get something done to solve a well-defined problem. Software Services probably exploits the corporate software tools, the corporate architectures, networking and clustering tools better than any other group. They are motivated to get things done most efficiently and most easily, and therefore they have to understand our products and tools so they can use them wherever possible.

The problem with Software Services' projects is that they often don't have the generality that will make them work for every

application.

I'd like to have a Woods meeting where we lay out all the engineering projects in the Corporation and put every one in one of these four categories so people like our industry marketers will know exactly where they stand relative to each project they need. For those projects that are owned by some group, there is nothing we can do. We just have to live with the results we get from them and be thankful when something does come out. The others we might be able to exploit and influence.

We might, for example, say that, in general, all tools are done by the Corporate Software group and all applications are done by the Field. No matter which way you go, there are compromises and sacrifices. It seems to me that, rather than work for generality in applications, we might solve particular customer problems and try to introduce some generality into them. This would assume that it is the most efficient and creative approach.

I would guess, for example, that even if we wait five years, there is not going to be any general, relational, data base software that works sufficiently for all problems. In fact, I would guess that, if we wrote software for each particular problem, on the average, we will do better and get there a lot sooner. I think we could write a data base program for banks that would make it easy to work with all the accounts of each individual or account owner, and work hard to make it particularly efficient for this application. I think it would bear little resemblence to the data base problem which the same bank would have in taking into account all the automatic teller machines or the one that an airline would use to take reservations. Each one of these is specialized and could probably be done very well by Software Services.

One way we might do our Office software is to make All-In-1 a very minimal, compact, simple, well-documented, standard interface to VMS and the Digital style of computing. It would do electronic mail, word processing and have a simple spreadsheet in it, but above all would be the human interface to VMS. Then, for all the other features that customers may want, we would get them from Software Services. We would own a catalog of special features.

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I n t e r o f f i c e M e m o r a n d u m

To: ROBERT GLORIOSO
BILL HEFFNER
JACK SMITH
cc: see "CC" DISTRIBUTION

Memo: 5305057176COR30
Date: Mon 31 Mar 1986 10:57 AM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO10-2/A50*

Subject: SOFTWARE COMES FROM HEAVEN

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Some people misunderstood the statement that "software comes from heaven when you have good hardware". They believe it and it's this attitude which causes the problem of hardware with no software.

The opposite is true. You only get software when you, clearly and simply, specify the problem to be solved, and you budget it, schedule it, and motivate the people who are to work on the software.

First of all, it is almost impossible to get software people to generate software when they don't believe that the hardware will ever work, ever be completed or ever be of good quality. The extra effort it takes to generate good software just does not come when people have no confidence in the hardware. Good hardware does wonders in motivating the software writers.

It is also true that hardware, to a large degree, defines the software problem, because people don't want to be naive hardware types, they try to specify the software problem in broad, dreamy generalities. They indeed prove that they are not hardware people, but they also prove that they are not software people.

Our Office software was very slow coming because it suffered from this problem. It was specified with hand-waving generalities that said it had to work with anybody's PC and anybody's terminal on any DEC computer, independent of how they were networked together. It also had to do everything that we thought of at Digital, everything WANG thought of, plus all the things the magazines ever said should be in an office system. It's a wonder we got anything at all for Office software.

I am afraid we are doing the same thing with TP. It seems to me that operating a level above hardware types we are asking for vague generalities that are much worse to handle than anything we have ever done in Office.

We are only looking for 7 percent of the market, but we want to make sure we have a solution for 100 percent of the market. We would like Transactional Processing to work with all of our terminals and all of our networking techniques. In addition, we'd like to have it work with all IBM terminals and all their networking techniques, both within a building and on the end of telephone lines. We would also like it to be gentle enough to work for a small number of transactions per second to a large number of transactions per second, small data bases, large data bases, centralized data bases, and distributed data bases. I also believe that, like the Office software, we'd like to make changes every time we run into a competitive situation we can't handle.

I'd like to see us make a very clear and simple hardware definition of the problem we want to solve this year, next year, the year after, and the year after that. Then I'd like a very simple difinition of what we want the software to accomplish and how we can budget it, schedule it, staff it and measure it.

We still have a tendency sometimes to somewhat fall back into the ways of the old Digital Engineering. Two years ago, Engineering would criticize Manufacturing vehemently because they didn't have the technology already developed that Engineering decided, at that time, that they wished they had. Common sense said that Engineering couldn't complain unless they gave notice, with detailed specifications, on what they wanted developed in the way of processes and then had management and Manufacturing accomplish it. Then, if they then didn't do it, they should be criticized. The same is true of software. We should agree what software we want done and what R & D we want done in software, then schedule it, staff it and budget it.

People are afraid of hardware because one is forced to specify things in detail in order to build it. We should not let anybody complain or order or wish for software without equally clear definition.

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A Vision of the Ideal -- Metaframe group, 18 March, 1986

E.C.

To become more productive, organizations must have a consistent philosophy of organization which empowers their employees to fulfill the company's mission. Below is Digital's vision of the ideal philosophy to achieve productivity (and high employee morale).

We believe in the dignity of the individual, his right to associate freely with others in his organization, his right to access the information required by his job and his obligation to provide information to others as he receives it. This belief leads to the peer-to-peer style of networking we produce, as well as to the management style we use; computer mediated information (notes files, ...) is an appropriate implementation of this style. Interestingly, this style is applicable also to computers interfacing with machines: on the shop floor we could use the slogan "liberate the Robots" to identify the power which we can add to the manufacturing process when the parts of the process are appropriately connected.

We look forward to the evolution of the business world to the "one corporation" concept, in which the information flow between departments of two different companies is as easy as that between equivalent departments in the same company. This interaction would make clear that the primary long-term added value of a company is the processes which it has; if those processes are not clearly superior to those available externally, then the company should seriously consider using the external processes instead of its internal ones. This style of management would quickly lead to the distribution of processes to the place where they can be done best, just as distributed computing moves the computation to the place where it can be done best. Examples are just-in-time manufacturing which moves your inventory outside your company or external manufacturing which moves the whole process outside. One logical conclusion of this concept in Europe would be the change in added-value of the European computer manufacturers as they became OEM's of ours for basic information systems products, recognizing that our engineering process for those products is superior to theirs. This further implies that we will need to offer them help in redefining their added value, mission and objectives.

We define the mission of Digital as the production of quality information systems, products and services; where information systems are defined as "the way in which a company acquires, shares, integrates and uses data to fulfil its mission, optimize its productivity and competitiveness and plan its evolution."

The final stage of our relationship to other companies occurs when we take the risk of agreeing to do new things together as partners. Previous to this stage, we sell products, services, architectures and then processes which we already have. The partnership commitment is to make things which both parties agree are necessary, but which were not previously part of the repertoire of either company.

We recognize that a major part of our perceived added-value lies in the Digital Computing Environment (DCE), which allows high productivity in applications development, flexible restructuring of information flows to adapt to organization and mission changes, and enhanced capability for effective information management. We should therefore be developing programs to make the use of the DCE as attractive as possible to OEM's, software houses and internal company applications developers.

digital

Interoffice Memo

TO: STRATEGY COMMITTEE:

DATE: FRI 18 MAY 1984 11:29 AM EDT
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

MESSAGE ID: 5236862504

SUBJECT: GOAL FOR 1985 - SALES AUTOMATION

We have done well in introducing automation to the office, to the factory, and to engineering design. We have changed the jobs, changed the red tape, changed how we do things, and the results have been very good. We have removed much of the frustrations and drudgery in these jobs. People are more efficient and have time for more important things.

I would like to make the goal for 1985 to be to introduce automation into sales. Every part of the company is getting more efficient by very significant amounts and we are doing a lot more with a lot fewer people almost everywhere except Sales. The main reason, I think, is that we are interested in doing things the way we used to.

I proposed that we carefully analyze everything involved in getting an order and taking care of the customer, that we change the red tape and our techniques, and that we introduce computers and communications. We should do whatever is necessary to make the job fast, efficient, productive, satisfying and fun. If we cannot do better than L. L. Bean, Sears Roebuck, or my camping catalogue store, we should hang our heads in shame.

Salesmen, or an approved customer, should be able to order from a terminal and immediately have serial numbers of the product assigned for straightforward products. Salesmen should have a portable terminal that can be plugged into any telephone.

For orders of simple equipment, no paper should ever be produced. The order should go into the computer and stay there until shipped and the bill of lading, packing list, and invoice are produced.

Simple orders should be acknowledged easily and immediately, and status of orders that are not instantly billed, should be instantly available, accurate, with no hassle.

Our products should be so simple and such complete systems that they can be simply described in the literature so there is no need for customers to ask questions.

board business as a separate business entity. Each of the products not on the small list of products will be evaluated from a return point of view. We will then watch the total engineering, total manufacturing, and total inventory of the OEM business and make sure that we charge less when it is justifiable and charge more when it is necessary.

I would like Jack Smith and Jack Shields to present a plan for automatic sales. I would like the Group Marketing Managers to prepare a list of that data that they think we should ask the customer or the salesman to include when they type in an order. We can assume that the computer has the base data of every salesman and every customer who is allowed to place an order once they put their code number into the computer, it could immediately produce that individuals name, address, the name of the company, and all pertinent data for his review, and then he does not have to enter in. The question then is, "what specific data does he have to put in, in order for us to get the information we need for market reasons?"

Automating sales will be relatively easy when we have a standard set of products. The products will all use the same hardware, and all will use exactly the same software system. We will decide what compromises we have to make, so that the salesman and certain customers can order from a terminal or a Radio Shack hand-held calculator, any of our products and immediately get an acknowledgement back, even by the serial number of the product, and an exact delivery date. The salesman will also be able to make inquiries about delivery and price. The same system will also allow him to make inquiries about status of orders that do not get instant delivery.

For automatic sales, it will mean that most products will have to really be available for shipment within 24 hours. This means that we have to have a very simple set of products because the number of item types in inventory will have to be small and we will be able to inventory quantities that are necessary to give instant delivery.

In the automatic sales system it is assumed that orders that do not fit in the standard, simple product list, but that involves special configuration, will not fit in the automatic system and it will have to be done manually, and delivery will be significantly later.

I would like to define in that meeting, exactly what data we want from each order. I am sure everyone will agree that in order to collect data, we are not willing to sacrifice automatic and fast delivery, and we therefore, are going to have to, at that time, decide exactly what data we want to collect from every order. We have to assume that in order to collect that, the salesman or the customer is going to have to type that information in, and it has to be so simple that he can do it sitting at the customer's desk.

If we cannot describe a product so that it can be ordered from the description, let's take it off our price list in 1985.

I would encourage having several order points for each different type of product, so that one order point doesn't get too large. One of these is custom systems. I do not care how long it takes to fill those orders.

If we do not know how to do the software for this, I am sure we have OEM's who can do it for us, or we might simply buy a package that one of the big mail order houses use. I am also sure that we will have to simplify our demands for information if we want to accomplish this.

On Monday, I would like to commit to the Board of Directors that we will accomplish this in 1985.

KO3:S9.92

Command > Bitall

Interoffice Memo

TO: see "TO" DISTRIBUTION

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DATE: FRI 11 JAN 1985 3:19 PM EST
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

MESSAGE ID: 5260663835

SUBJECT: DIVISIONALIZATION

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I always liked the idea of breaking the Company into divisions. I think it is a great idea to pursue at this time, however, let me describe a few of the pitfalls so that you understand what slowed us down in the past.

Probably the biggest problem is, that when we talked about it in the past, I thought of divisions as a method of assigning responsibility, measuring that responsibility, and holding people to it. But, the natural inclination of the people who wanted to be Division Managers saw it as a way to gain freedom. They thought they could make decisions without telling anyone, and all the frustrations they had would disappear when they were in charge and ran the division by themselves. Of course, the reason for divisions is to assign responsibility for all investments, details of operation, and for the final results.

The books on business often warn that divisionalization should only happen when a company has reached stability. This is said because there is less freedom, normally, from divisionalization, and it stifles growth. I believe this does not have to be true. We could assign responsibilities, and make the allocations approximate and accomplish all the good things we want when we assign the responsibilities.

One of the reasons I like this is that it will force us to limit the products offered by each market area. This is why I proposed the ABC system a few years ago, but it failed because everybody insisted on selling everything. The result is that we cannot do complete marketing, even though we pay many of the costs of operation on everything.

Under divisionalization, each division would limit the products it sold. It would help define and pay for those products they had developed. They would budget for marketing each They would also be responsible for measuring the results of each Marketing and Development Program, and adjust their plans accordingly. This would have an enormous payoff for the Corporation. It would quickly stop all Engineering projects which are not immediately

done for particular divisions.

Two years ago, I told the Board that I wanted to break the Company into divisions. Their answer was an unequivocal "no." They said the Company could not tolerate another change. My response was: "we'll start slowly;" we did start with the Terminals Group. They own most of their marketing and engineering responsibility, and the complete budget responsibility. Someday, I hope they will be integrated with the manufacturing of these terminals. The results have been good, even though some of the sales cost allocations have not yet been worked out rationally.

I believe the TOEM group would do well being, (at least on paper), treated as a division. It would be healthy to run each product offered as a business, and count the engineering cost, inventory, selling, etc., and measure each of the marketing activities for each of the products. With this, they will be able to tell which activities are worthwhile and which ones should be limited.

If TOEM wants to have a product that competes with the AT, they should have the planning system that would tell them that their plan is reasonable, or, whether we should back away and not go into that business. If the OEM group wants to compete with the people who make high-speed MASSBUS modules, they should have a plan which makes it obvious to them, and everyone else, whether or not we should be in the business.

If each division truly learns to budget, plan, and measure, we will develop leaders who can take more responsibility in running the Company.

It is obvious that we could not handle complete divisionalization of the Company at one time, and it is also obvious that the Board of Directors would never tolerate it. However, let's consider a plan for growing toward divisionalization.

There are probably three ways to do it gradually:

1. Have the Terminals Group move toward being a division and learn from that.

2. Start one more group as if it were a division.

3. Break Marketing, Engineering, and Manufacturing cost and inventory into what we might call divisions and, for a time, run our Accounting, so that each division will plan ahead of time, the way a good Company should, what it will do with each product and measure the results, and therefore, improve the business operation of their division.

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To: Ken Swanton
One new point. Please do not circulate - H.C.

digital

Interoffice Memo

TO: *WIN HINDLE
JACK SHIELDS

DATE: FRI 4 JAN 1985 4:06 PM HEC
FROM: PIER-CARLO FALOTTI
DEPT: VP FIELD OPER. EUROPE
EXT: 2961
LOC/MAIL STOP: GEO/CO202

MESSAGE ID: 5259954279

SUBJECT: MAKING MKTG SERIOUS - MSSC 9 JAN. 85

lo/12

Ref.: Memo from Ken Swanton dated 13 December 1984. Subj.: Making Marketing serious on Jan. 9.

Seeing so much money and talent being underutilized, I want to express my recommendations to the topic of Jan 9 MSSC in relation to Ken Swanton's 6 points memo.

I believe his memo does not address the key issues, i.e.:

STRUCTURE:

We need to separate the Corporate Strategic Marketing issues from the Field tactical issues (specially the USA as a major piece).

Running Sales/Customer seminars is not a Corporate strategic issue and the role of the SMU. The USA organization can/should be organizing them and have the other areas (GIA-Europe) attend/participate/share if needed.

Sales support is a field activity but today it seems to me that this task represents a major portion of the SMU activities in the USA which creates duplication of roles and defocus the SMU from their real role. Field Marketing/Sales Support have to be part off and incorporated in the Field. Marketing plans should give the direction to Sales Management and the two pieces should not be disconnected (All the countries example).

CONTENTS:

We sell/market Applications to Industries; let's organize accordingly and also realize that not all parts need the same approach, having Application that are 80% similar through the world (CAD-CAM) and others with very little similarity worldwide (Small Business application).

This is also a reason why the CAEM SMU, having a real impact, is

the one that receive/give the most support to the Field.

As Industry needs, in a general sense, are also similar worldwide we need a few key core Corporate industry programs. Today, at the contrary, we try to do these in Geneva, but find very little connection with Corporate (Banks, Fiancial institutions, Hospitals, Distribution, Food, etc).

CHANNEL MNGT:

This is a Field issue and not an SMU one. As long Channel Mngt (OEM and others) is not part of the Field there will be duplication of effort and unclarity of roles. Again the example of Europe, where Channel Mngt is part of the Field, could be used.

CORPORATE STRATEGIES:

Given the size/capabilities of the countries (USA being one), we should receive from Corporate only key STRATEGIC PROACTIVE directions like:

- How and if we need to evolve into the Computer/Communciation world. (Information technology).
- Guidence and direction on strategic alliances with other companies. (I still strongly believe that we should work harder the Apple and Tectroniks ones).
- Industry/market trend.
- A few REALLY worldwide Corporate identity program (today 0/).

and obviously excellent products (i.e. system).

The Field can do most of the tactics and share them among themself (USA, GIA, Europe). In fact when we know that we have when we expect
somebody else to provide these info.

BASE PRODUCT MARKETING:

For Base Product Mktg I intend both, Hardware and Software (to deliver system to the customers), to be part of the Field as far as

definition of needs
competitive info
pricing

and be tied/connected with Product Engineering for definition of the products, delivery, cost and in depth expertise. (It

digital

Interoffice Memo

TO: MKTG/SLS STRAT COM:

cc: see "CC" DISTRIBUTION

DATE: THU 13 DEC 1984 4:42 PM EST
FROM: KEN SWANTON
DEPT: CORPORATE PLANNING
EXT: 223-3038
LOC/MAIL STOP: MLO 10-1/U49

MESSAGE ID: 5257735795

SUBJECT: MAKING MARKETING SERIOUS ON JAN. 9

The Jan 9 MSSC woods, that has been called to discuss Marketing/Sales roles and goals, is the ideal time to decide whether to get serious about marketing.

At the Nov 19 MSSC, I was asked to develop a proposed agenda for the Jan 9 meeting with Ken Senior, Ed Kramer, and Chick Shue. After several meetings with Ken Senior, MY recommendation is that the Jan 9 meeting focus on the following proposal. The four of us are meeting to discuss this proposed agenda and other possible agendas next week. Tomorrow, I will send you a more detailed version of the following proposal, which will include: the reason for each proposal, the proposal in more detail, and implementation specifics.

THE UNDERLYING PROBLEM WITH TODAY'S MARKETING:

There are several problems with today's marketing efforts. However, there is one underlying problem which in my opinion overwhelms all other problems. This major underlying problem is the following inconsistency:

- Marketing (the SMU's) is today taken very seriously for some things including:
  - Plans - SMU's do very thorough plans.
  - Reporting - a great deal of business information (e.g. orders & P&L's) is now tracked by SMU.
  - Top management strategy reviews - every SMU has their plan reviewed at the Board of Director's and Strategy Committee.
- However, when it comes to implementation, the company's plan by market is almost completely forgotten, and marketing isn't taken very seriously at all.

The above inconsistency makes very little sense to all marketing managers and most field managers. There are two obvious solutions: don't take marketing seriously on plans/reporting/top management reviews, or take marketing seriously during implementation. I recommend the latter, and propose the following six decisions be made (at the Jan 9 MSSC woods) that together will cause marketing to be taken much more seriously during implementation:

that they have to give.

Certainly this is a bias from a Field/remote perspective but I hope it helps the discussion.

Regards
/lo

04-JAN-85 10:11:11 S 19584 GEMI

04-JAN-85 10:48:46 S 11663 RCSO

4-JAN-85 11:47:21 S 02328 GEMI
GEMI MESSAGE ID: 5259999384

surprises me to see our Top Engineering Consultant, Jessi Lipcon, doing price elasticity presentation. Isn't this a typical Product MARKETER's job?).

PROGRAMS/PLANS:

We should have a few and real Corporate programs/plans and then formally manage them. How can any District/Region/Country follow 118 programs (as Ken Swanton's proposition). Let's decide on a few strategic ones (DECnet, Ethernet, Cluster, All-in-1)

REPORTING/MEASUREMENT:

Of course we are setting goals in line with our business segments, but tieing the Districts to the (today) SMU segmentation is not REALITY!

SMU likes millions of datas, but we need less numbers and a few real and correct information.

We should SAMPLE and not have everybody measuring everything irrespective of the size and the impact.

We should also stop making changes in June or even worse in July. The systems cannot handle them and the Field refuses to do them beside costing a lot of money, resources and Management reputation.

We do not have yet systems in place anyhow (we are slowly and painfully getting them in place in Europe), but the SMU should realise that we do have little money and talent and that we can only ask so much to the Field in addition to grow, make money, etc, etc.

MANAGEMENT REVIEWS:

Ken Swanton suggests to take 1 hour to review the plan. I believe it is a waste of time and at the contrary Corporate Committees should select a few topics, a few key plans and review/discuss them in depth to provide proper directions and decisions to the Field. (I see MSSC getting in this direction. It should do more and get out of the day to day operations. Idem for the other Corporate Committees).

IN SUMMARY:

Let's not continue with compromises. The Field is working; let's fix the SMU. We need clear Marketing strategic plans. Today they cannot come from the SMU (except CAEM) as they are organized. Let's integrate the tacitical part in the Field (and may be the whole).

Stop duplicating and suboptimizing the talents that exist and have big groups (2000 people !!) that do not provide the return

STEPS RECOMMENDED TO STRENGTHEN MARKETING NOW:	Proposed Decision Date
1. Decide to implement formal project management for major marketing programs in SMU's & Areas, including tracking the impact of programs.	Jan 9
2. Decide to have the MSSC conduct formal business reviews of each SMU, every quarter, to understand current business performance and how to improve it.	Jan 9

3. Decide to seriously goal US DM's by SMU in FY86. 50% of goal would still be total district bookings, but 50% would be bookings by 10 markets (the 10 are: the 8 largest SMU's in the district, the sum of remaining SMU's, and all Office Products Business regardless of SMU). Jan 9

4. Decide to seriously track applications on orders beginning July 1 (on an after-the-fact basis). Jan 9

5. Decide to have the SMU's be the field's & SMU's primary voice to engineering for issues in the beyond 12 month timeframe. Set up a Mktg/Field Product Committee to facilitate this with representatives from all SMU's and areas, and chaired by a newly created field product marketing manager. Jan 9

6. Decide to formalize the preparation of both the FY86 US Area P&L by SMU, and the field's FY86 worldwide systems volume plan by SMU. Jan 9

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KEN OLSEN
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CORP. PLNG STAFF:
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WES MELLING
IVAN POLLACK
RON SMART
SMU PLNG CONTACTS:

BRUNO D'AVANZO
*WIN HINDLE
MKTG FINANCE STAFF:
BRUCE RYAN
JACK SMITH

E.C.

FEB 19 1986

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Interoffice Memo

TO: see "TO" DISTRIBUTION

DATE: WED 19 FEB 1986 9:28 AM EST
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

MESSAGE ID: 5301004337

SUBJECT: CALIFORNIA TRIP FINDINGS

****
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****

There are three things that people are concerned about in California:

1. They don't have a clear story on the family of workstations, from the PC, that would compete with the AT workstation, the RT workstation, including the excellent high-end workstations we have today.

2. There is no simple party line that explains that we can, in one network, support easily, efficiently, and nicely, MS-DOS, UNIX and VMS.

3. It appears that the customers want the 8800 and not the 8650.

KHO:ml
KO5:S4.31
DICTATED BUT NOT READ

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Copy to John Sims - This is a brilliant memo - Could we apply it to Management Education? W.m.

d i g i t a l

Interoffice Memo

TO: see "TO" DISTRIBUTION

cc: see "CC" DISTRIBUTION

DATE: FRI 31 JAN 1986 4:25 PM EST
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

fill in E.C.

MESSAGE ID: 5299199467

SUBJECT: PEDAGOGY

****
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****

If a traditional professor was introducing a course on flying to a group of new students, he would stand behind a high stack of text books and explain that, before we let you sit in an airplane, you have to have the basics. First, there are six, two-semester courses that you have to take, and here are the six textbooks. (Of course all written by myself and, therefore, half are in mimeograph form).

The first course is on the physics of flying, the second on the mechanics of an airplane, the third on flying skills, the fourth on aircraft electronics which covers the twelve radio systems on an airplane, the fifth on weather; and the sixth, which is the biggest book of all, is on the laws, regulations, rules, and traditions of flying.

If you are diligent, you might be part of the top 25 percent of the class, who is allowed to sit in an airplane during the last semester of their senior year.

However, flying is taught by thousands of entrepreneurial, starving pilots, who are trying to collect enough flying time to get a commercial pilot's job. With their motivation, the pedagogy of flying has developed to a fine art. They are careful never to overwhelm their student with the complexities of the physics, mechanics, radios, rules, etc. Their survival and food on their table is dependent on convincing the students that they can fly, that it is easy and fun, and that any complex subjects can be learned easily, a little at a time, as you need them.

This technique is obvious and simple. They immediately sit you in an airplane and, very quickly, get you to fly (more or less) a step at a time, hopefully in an organized way, they will say: "Oh, by the way, study this before we fly next, and we'll talk about it when we get together." Or they will say: "The weather's too bad to fly, let's spend the next couple of hours going over some of the other things you should know."

The professor's method sounds so business-like, but is really

there to demonstrate his own importance. The aircraft instructor's method is there to make teaching efficient, economical, and fun and to sell the idea of flying.

I think our working and communications marketing suffers from the professor's problem.

When I look at our books, literature and approaches to marketing, it seems to me that we are motivated to show the world how much detail we have, how many parts we have, how many pages of literature we have, and how complicated the sytems are that we have developed. We have certainly done a good job of intimidating our sales people and our customers. They are indeed convinced of how smart we are and how complicated the subject is. I would much rather see an approach where we, with our general literature, convince people how easy it is to understand, and how simple it is to put together. If they have almost any specialized problem, we have the solution for it, but for simple networks, it can be done blindfolded.

I am sure we will overwhelm the world with how smart we are and how complicated networking is during DECworld. However, I think we would sell more networks if we convinced them of how simple and easy it was.

If we, with great flare, and with camers and television, had our Treasurer hook up a rather complex, but simple, network while blindfolded, we could make a big step in convincing people how easy our products are to connect.

Convincing people of how simple it is might devastate our pride, but it might do wonders for our sales.

KHO:ld
KO5:S3.82

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E.C. Ken Swanton talk file ~~Ken Swanton talk file~~

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!___!___!___!___!___!___!___!
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Interoffice Memo

TO: see "TO" DISTRIBUTION

cc: see "CC" DISTRIBUTION

DATE: FRI 24 JAN 1986 9:29 AM EST
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

MESSAGE ID: 5298497082

SUBJECT: TODAY'S WOODS MEETING/FEBRUARY WOODS

I think today's WOODS meeting went well. I think you should be proud of what was accomplished, particularly when we compare the attitudes of a year ago.

However, I do want to be sure that we incorporate into all of the business plans, the plans from all parts of the Company that should be part of those plans.

At the February WOODS meeting, I would like to review all of the services to be sure their planning is incorporated into the business unit plans.

Each of the services: software systems generated, software support, field service, special systems, sales training, CSSE, storage, P&SG, should understand that they are a service to the goal of getting an excellent product to the customer and making the customer satisfied, and that all the goals to accomplish this are incorporated into the independent business unit plans.

At the February WOODS, I would like to, one at a time, go over each of the services and have them review their contract, schedule, budget, and plans for each independent business unit. I would like their goals for each independent business unit to be clear.

KO5:S3.62
(DICTATED 1/23/86 BUT NOT READ)

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E.C.

Interoffice Memorandum

To: ROBERTA BERNSTEIN

cc: see "CC" DISTRIBUTION

Memo: 5298152820MIL99
Date: Tue 21 Jan 1986 9:43 AM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO10-2/A50

Subject: MEASURING STAFF

You asked how we should measure staff. I say we measure staff on how well they get the company to be organized so that every project has someone responsible, and so that every project has a plan and a budget and is reviewed. This is particularly important for product projects and marketing projects.

Let us use the Executive Committee WOODS on Wednesday and Thursday, January 22 and 23, to pass judgement on the staff for those projects we review on these days.

For each marketing project, is there a person responsible for the dream, a person responsible for the hardware, a person "or persons" responsible for the software, and a person responsible for the marketing? Is there one person responsible for the overall project including pricing, discounts, profit, numbers, and business plans?

Or, does the staff believe that the business success is only a function of the will of the Sales Department who has a fixed, immovable yield-per-man which they randomly assign to projects of their whim, and therefore, they take all responsibility for numbers?

Or, does the staff expect the Executive Committee to pick numbers and take responsibility for the myriad of details and the myriad of dreams and creativity involved in good projects?

At the end of each day of the WOODS meeting, let's pass judgement on the staff by what we say during those two days.

KO5:S3.54
(DICTATED 1/21/86 BUT NOT READ)

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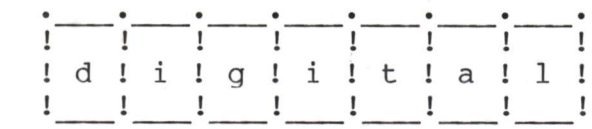
F.C.



Interoffice Memo

TO: see "TO" DISTRIBUTION

DATE: WED 8 JAN 1986 9:41 AM EST
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

MESSAGE ID: 5296891611

SUBJECT: HOW DO WE RUN THE COMPANY?

****
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A few years ago, we got into the trap where senior people had "rights". They all had the right to insist on their opinion and little responsibility was left with them. I think MSSC is the vestigial remains of the old system.

When people cannot explain pricing decisions they say we argued with it for months, therefore, it must be O.K.

I would like the Executive Committee to lay out simple, clear strategies which will state the policy for pricing and other business decisions. Management's job is to assign responsibility, not to work out compromises between opinions of people who have different goals for the Company.

The Executive Committee meetings have to be shorter and maybe not so often. This means they have to be better prepared. If the presentations are obviously not clear and simple, they should be postponed until they are clear and simple. The staff might collect some opinions ahead of time to make sure the items are done efficiently. Let's assume that when we take a long time it is because the preparation is poor.

The stated strategy, goals, and policy is different than preparation and data. We, of all companies, should prove that we can do it efficiently.

KO5:S3.33
(DICTATED 1/8/86 BUT NOT READ)

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History Budget Budget Jim Osterhoff Task Force ~~Strategy Committee~~

| d | i | g | i | t | a | l |

Interoffice Memo

TO: see "TO" DISTRIBUTION

DATE: MON 11 MAR 1985 12:00 PM EST
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

MESSAGE ID: 5266528454

SUBJECT: REORGANIZING THE BUDGET

****

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****

Before the budgeting program gets any further along, I would like to break the Company into major pieces. In addition, there will be a number of pieces that don't fit into these categories.

The first category is: OEM, Resellers, Small Business, Stores, Dealers, etc. All PDP-11 development will be in this group. A-Z software will also be part of this group, and the products will be, in general, laid out for our traditional customers and our traditional way of doing business.

I want us to decide what we are going to do in MIS, and then after that, fit in our plans for OEM's. Above all, I don't want to drift into OEM's and then try to fit a Corporate MIS strategy around a handful of OEM's.

The new group I would like to form is called MIS and will include the Office and departmental computing and data processing. This group will have only two, (or perhaps three), computing systems, which are: Micro-VAX and VENUS, (and maybe SCORPIO); it will include ALL-IN-1.

Rose Ann would like to be on Committee

The MIS group will sell complete systems, with complete contracts for the whole job, that will include: Field Service, Software, and Software Support all in one contract, sold by one salesman. We will go overboard in simplifying the product line so that every employee, every salesman, and every customer understands what the product line is and so that software houses will all want to write software for it.

I would like Win and Jim Osterhoff to be co-chairmen of a committee that will lay out how we budget these two groups, how we measure them, and how we allocate engineering, manufacturing, inventory, and selling costs, etc. They will pick the members of the committee, but I would suggest that the whole Strecker Committee be ex officio members of this committee.

I would like Jim Osterhoff and Win to spend a few minutes at the Strategy Committee meeting next week to explain what their approach will be to this problem.

KHO:ml
KO4:S8.10
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ED KRAMER	WARD MACKENZIE	JIM OSTERHOFF
JOHN ROSE	PETER SMITH	JACK SMITH

SYSTEMS TASK FORCE:

KC

digital

Interoffice Memo

TO: DAVE GRAINGER
BILL JOHNSON
cc: see "CC" DISTRIBUTION

DATE: THU 26 SEP 1985 4:15 PM EDT
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

MESSAGE ID: 5286465173

SUBJECT: MARKETING OF WIDE AREA AND LOCAL AREA NETWORKS

Please disregard previous memo sent because of margin error.

****
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It now appears that maybe we should have the marketing product line responsible for wide area networking and large scale local area networking be done in Europe. They seem to have the interest and the capability of thinking and organizing in a scale necessary for this job. As a step in our analysis of this will you collect the following data for the Executive Committee and present it at a meeting in two or three weeks. We would like to know:

1. How many companies in the world want to tie their international operation together with wide area networking (some may not know they want it, but they really do)?

2. How many educational campuses, or groups of company buildings in campus form want campus wide networking?

3. How many good size organizations want good size local area networking?

4. If you add up all the dollars that should be sold to these organizations each year for the next 5 years, what does it add up to?

5. Of these numbers, what percentage do you think Digital should look for?

6. If Digital wants this, how many dollars of NOR would that be in one year?

7. How big an organization would it take, and what would be in that organization?

8. Would Europe be particularly well suited for this because they are very good at turning out products and thinking in a large scale, and they have good international experience?

KO4:S12.98
(DICTATED 9/26/85 BUT NOT READ)

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Interoffice Memo

TO: see "TO" DISTRIBUTION

DATE: TUE 24 SEP 1985 2:09 PM EDT
FROM: WIN HINDLE
DEPT: CORPORATE OPERATIONS
EXT: 223-2338
LOC/MAIL STOP: ML10-2/A53

MESSAGE ID: 5286263706

SUBJECT: EXECUTIVE COMMITTEE & EUROPEAN BOARD

COMPANY CONFIDENTIAL

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At the last Board meeting, Arnaud, Dorothy and General Doriot gave me two strong inputs on names:

1. They believe the name Executive Committee should be reserved for a committee of the Board if the Board wants to create one some day. They would like us to use Management Committee or Operations Committee.

2. They do not like the use of the title European Board of Directors because it implies operational control of Europe. They would like us to use European Advisory Board.

Let's discuss these names sometime soon.

WH:da

WH1:S4.30

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JOHN SIMS
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Interoffice Memo

TO: see "TO" DISTRIBUTION

cc: *WIN HINDLE

DATE: MON 16 SEP 1985 12:13 PM EDT
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

MESSAGE ID: 5285459662

SUBJECT: SALES EFFICIENCY

****
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I believe that the efficiency of Sales can be multiplied by an enormous factor if we market and describe our products efficiently. Please hire a consultant to study how our sales people spend their time and propose how we might increase efficiency.

I would like to know what the efficiency would be if we had:

1. A simple product line with few choices.

2. A small number of pieces of literature.

3. Literature told what we cannot do and what products we do not have.

4. A corporate set of literature and a corporate set of products, with a description of how these products solved problems for each product line.

and,

5. If each product line did not generate their own literature to compete with other product lines in the Company.

How much inefficiency is due to the fact that we have limited sales support? How much is limited by the fact that we have an infinite list of software, each of it doing the same thing, with no evaluation of its quality, and no simple list of recommended software that every salesman should push?

KO4:S12.79
(DICTATED 9/16/85 BUT NOT READ)

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JACK SMITH

SEP. 17+18
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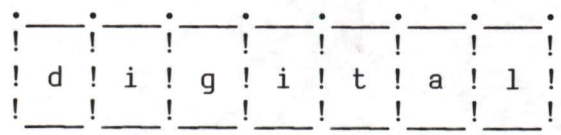

Interoffice Memo

TO: RON SMART

cc: see "CC" DISTRIBUTION

DATE: TUE 10 SEP 1985 9:21 AM EDT
FROM: WIN HINDLE
DEPT: CORPORATE OPERATIONS
EXT: 223-2338
LOC/MAIL STOP: ML10-2/A53

MESSAGE ID: 5284856649

SUBJECT: BUSINESS ENTITIES - MY DEFINITION

A Business Entity is a group focused on a profitable marketing opportunity. The basic requirement for a Business Entity is expertise in a system, a product, an application area, an industry or a geography. The group proposes a Plan covering the market need, the products required for success, the competition, the reasons we will succeed, and a financial model. A Business Entity Plan provides the Executive Committee with a proposed set of investments in products and markets. The Executive Committee will use these Plans to make investment choices. Once approved the plan becomes a guide to the rest of the company's functions in planning their programs and budgets.

WH:da

WH1:S3.68

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CORP PROJECT STAFF:
JACK SHIELDS
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JOHN SIMS
JIM OSTERHOFF
JACK SMITH

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Super memo!

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TO: see "TO" DISTRIBUTION

cc: see "CC" DISTRIBUTION

DATE: WED 7 AUG 1985 3:01 PM EDT
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

MESSAGE ID: 5281440575

SUBJECT: NEXT WEEK'S BOD PRESENTATION OF ENGINEERING BUDGET

When I suggested that the presentation of the Engineering Budget is a presentation of the strategy of the Corporation, and that it be presented in terms of the strategies and needs of the five main markets we plan to go into, the Engineering Budgeting Committee indicated that they made the best budget they could, considering the little help they got from marketing. They suggested that they ask for inputs, and that they ran the budget passed the marketers and got little criticism.

Jack Smith, quite directly, criticized the person in charge of marketers, because he did not have an organized and systematized set of strategies for each market, with the hardware and software needs, that they could use as a basis for their Engineering Budget.

As soon as possible, let's get this set of plans and set of hardware, and set of software needs, to help our planning process. We don't have time to do a thorough job before the Board meeting, in fact, we have very little time at all, considering vacations. However, please try to make a quick, rough pass, (as much as you can do in a few days), even if we don't have it to the state where it can be presented to the Board. At least it will set the format for a more thorough set of planning inputs that we can develop in the near future.

It seems clear that we want to specialize in Factory, Office, Science, MIS, and Small Business. After we organize a need for each of these, it may become clear that we can't afford to do all of them. It may, also, become clear that there is not enough return promised in some of them to be worth going into.

The weakness of the Corporation has been that we, following our OEM tradition, have offered a number of excellent components to our customers, but never all the details to do a complete job. I'd like us to prepare a chart for each market that identifies the details we need in order to do a complete job, and to be sure that we have a plan that, when complete, will offer a product that we can plug in and will work.

I'm afraid the Engineering Budget offers a complete line of central processors with their equipment, but has no money left to finish the job for any of our markets. If we chart out the needs, we may conclude that we can't do all the central

processors that we desire, and we may not be able to go into all of the markets that we would love to fill. I want to be certain we can assure ourselves, and our directors, that we are going to do a thorough job in those that we invest in. By charting out the needs, we will identify where we can use the same equipment, same designs, and same software in different markets. It would also eliminate the problems the old product lines had wanting to change their equipment requests depending on what order they lost last week.

Please start a chart with a column for each of these areas, and maybe sub-columns for different parts of these markets, and then list all the software, hardware, and other things that are needed vertically in the columns.

We should then estimate how much we will sell of each item, and see how this compares with the total plans of each market area. In this way, we will find out if it is worthwhile to build some of the hardware and software. If a market area desires more equipment than they can justify by the sales of the equipment, it should become immediately evident. We should also be able to see those market areas which have a dream of a simple, elegant solution that they will offer, and we will flag those who just want to offer everything, at the spur of the moment, depending on what the customer wants.

KHO:mt
KO4:SECT11.73
DICTATED 8/7/85 BUT NOT READ

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Interoffice Memo

TO: see "TO" DISTRIBUTION

DATE: MON 22 JUL 1985 2:29 PM EDT
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

MESSAGE ID: 5279831904

SUBJECT: SUMMER PROJECTS

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There are several critical projects which I am trying to get done this summer:

ORGANIZE BUSINESS UNITS AND MARKETING GROUPS

1. I'd like to get our business units and marketing groups organized so that they layout plans to optimize the products they have to get the products they need, and to layout plans to get a large percentage of the business which they should have. I'd like them to have the feeling of control, and to show the initiative necessary to accomplish it, and not be limited by staff who have other goals.

   Part of this is well underway in our marketing approaches for fast results, and the next step is to get the six or seven major business groups to fill out plans to get 50% to 80% of the market in which they are in. We'll have a Woods meeting laying out how we will organize these groups in order to give them the feeling of initiative, and competitiveness to accomplish this.

CORPORATE MARKETING

Win and Dick Berube are getting together for me ten of the brightest marketers, none of whom will be vice presidents, to see if we can formulate the Corporate pitch around networking, and how it ties all of our products together.

Bill Strecker and Sam Fuller are organizing a Woods meeting on types of computing. I believe VMS type computing is the major contribution we have, but, if we are going to grow and offer a complete line of computing, then we have to analyse what these types are, and how we can offer them to our customers. Right now, most of our engineering budget is products competing with the 8600, and not specializing on things like UNIX, fast datarate computing, and so forth.

RESEARCH

I asked Sam Fuller to organize a two-day Woods meeting on how one does research. At one time, people who did research on products were the ones who were expected to follow it through to the end which developed good managers, and broad engineers. Now research is isolated and often sets their own goals, drops projects when they feel like it, and does not believe that we get all we should have out of research. I'd like to layout a definition, as we used to have, as to just what research's contribution was to the Corporation, and how we, the Corporation, decide on the projects, decide when they should be terminated, and how far the group will go toward completion.

KHO:mt
KO4:SECT11.34
DICTATED 7/22/85 BUT NOT READ

"TO" DISTRIBUTION:

*WIN HINDLE	JIM OSTERHOFF	IVAN POLLACK
JACK SHIELDS	JOHN SIMS	RON SMART
JACK SMITH		

KC

d i g i t a l

Interoffice Memo

TO: BILL JOHNSON

cc: see "CC" DISTRIBUTION

DATE: TUE 5 MAR 1985 3:15 PM EST
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

MESSAGE ID: 5265923043

SUBJECT: CORPORATE GOAL RE: SYSTEMS CONTRACTS

****
CONFIDENTIAL - DO NOT DISTRIBUTE OR COPY
****

It is a Corporate goal to quickly get into the position of being able to take the whole systems job, with one contract, from one salesman, that will include everything, including: installation, serial lines, and networks.

Will you come to the Kitchen Cabinet Meeting on March 12th, with the manuals Field Service now uses for installation of ETHERNET and serial lines, and an outline of the manual that you propose?

This manual should be one of our most important selling documents. We should make it look so simple that everyone falls in love with it. What they should fall in love with is the idea that anyone can do it and everyone can remember how it works.

The appendices should be in a separate volume. In it we should list what we do for special cases, such as: what do we do if the customer already has IBM cables, or, has telephone wires that aren't twisted and were installed in the masonry a hundred years ago? This volume should also tell how we hook up to data switches, which we, and many of our customers use, but which we don't want to call Digital's standard anymore.

It is important that we, first of all, outline and then write the simple Digital standard which assumes we use our wire, our connectors, our techniques, our computers, and our gadgets. It is only when this is done we can write the appendices for special cases.

We should assume that new installations of serial lines or ETHERNET deserve all new wiring, and we should write the manual accordingly. Anything else should be considered a special case. One thing is certain: we are never going to sell our approach if we sell all the exceptions. We can only sell our approach if we explain how simple, clean, effective, inexpensive, easy-to-understand, and easy-to-remember it is.

A good way of presenting the installation handbook might be by

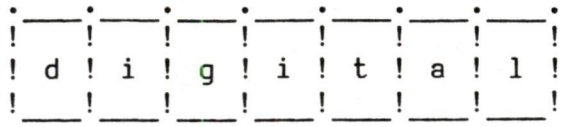
giving the name of the individual in charge of each chapter, and what his schedule and outline will be.

KHO:vrh
KO4:S7.79
(DICTATED 3/3/85 BUT NOT READ)

"CC" DISTRIBUTION:

KAMLAKAR AJGAONKAR	RALPH DORMITZER	*WIN HINDLE
JIM OSTERHOFF	JACK SHIELDS	JOHN SIMS
JACK SMITH		

Copy to: Ron Smart
K.C.



Interoffice Memo

TO: ROSE ANN GIORDANO
BOB HUGHES
ED KRAMER
WARD MACKENZIE
PETER SMITH

DATE: MON 4 FEB 1985 3:44 PM EST
FROM: WIN HINDLE
DEPT: CORPORATE OPERATIONS
EXT: 223-2338
LOC/MAIL STOP: ML10-2/A53

MESSAGE ID: 5263091956

SUBJECT: MANAGING THE COMPANY

**** CONFIDENTIAL - DO NOT DISTRIBUTE ****

I have been thinking about the discussion at your last meeting concerning market segmentation (geography, product, application, channel, and industry) and "running the company" by that segmentation. The other senior managers do not believe we should pick just one segment but should view the company along several dimensions. I would strongly urge you to accept the view that we are currently not going to choose a "primary focus", but are going to continue to drive the company along a number of dimensions with no one of them predominant.

What the Company needs now is your expertise in assuring we engineer the right products and provide the programs in the Field that will promote maximum sales. Therefore, I suggest you change the focus of your one-day WOODS to focus on how to do this.

I believe Engineering and the Field want and need your help. The Company needs all of us working together to meet the external challenge in the marketplace.

WH:em
WH1:S2.30

K.C.

d i g i t a l INTEROFFICE MEMO

TO: KEN OLSEN

DATE: 7 JANUARY 1985
FROM: ROSE ANN GIORDANO
BOB HUGHES
ED KRAMER
WARD MACKENZIE
PETER SMITH

SUBJECT: DIGITAL OPPORTUNITY

Digital is on the threshold of an enormous opportunity. The market for high performance, low/mid range priced products is the fastest growing part of the computer industry today. In approaching this opportunity, Digital has the strongest set of hardware/software/networking products. The Company has achieved a unique position in presenting the most compatible set of system products in the industry within the framework of "one company" with "one strategy". However, we do not believe that Digital is appropriately organized to capitalize on this opportunity and we request a meeting with you to discuss our views.

Digital must carefully select the "segments" where we expect to be unique and in an industry leadership position. We believe that there needs to be a serious and in-depth Corporate dialog to determine the most effective definition of these "segments". Once the "segments" have been determined, we can meld our interfunctional strength to aggressively attack them with a balanced investment plan and appropriate and coordinated implementation programs. With feedback and control this approach will quickly identify "segments" needing management action to insure the attainment of the Corporate Plan.

Although there are tremendous opportunities, the marketplace is becoming increasingly complex. Technology advances continue to reshape the buying patterns of our existing customers as well as dramatically increase the base of potential customers. The opportunity, coupled with this rapid change, provides a major chance for traditional and new competition to carve out and penetrate markets which have traditionally been Digital's strongholds. We need an appropriate Corporate organization structure to focus our resources to compete effectively and responsively for this rapidly growing, but increasingly competitive and complex set of opportunities.

The inherent design of today's Corporate organization structure assumes a homogenous, less complex, slower moving marketplace than the one which exists in reality. It also does not provide a

segmented or portfolio view of our Corporate performance to allow rapid identification of problem areas and the required focused corrective actions. Our current profit problems may be symptomatic of this. Today's structure leads to slower identification of difficulties and the need to adjust for Corporate Plan deviation by arbitrary top down budget adjustments. In the current structure, top down functional budget cuts provide no understanding of the affect on our strategic plans and the ability to achieve appropriate interfunctional balancing.

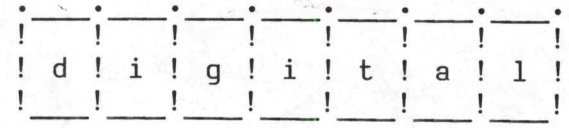
Although strong functional organizations exist, there is no means in the current structure which assures implementation of strategic "segment" plans. Simply put, today's Corporate functionally driven structure is ineffective in addressing the complexity of the markets and competition we are facing.

It is the view of the Marketing Vice Presidents that the Company must move to a Divisional structure. Our definition of a Divisional structure is one where a business plan and strategy is built to insure profitable market penetration of Digital's targeted "segments" with a clearly spelled out interfunctional plan, including definition of required investments and implementation programs. This approach would enable us to marshall the strength of our functional organization and leadership product set to execute focused coordinated programs in line with agreed Corporate objectives. It also would allow us to determine which "segments" are performing against agreed plans and which require management action.

The definition of the appropriate "segments" is the most important decision this Company must make. We believe that this should be a Corporate dialog not biased by the current marketing or functional structure. The issue is not "what to do with Marketing," but "how best to organize the Company."

We are not suggesting that Marketing assume managment responsibility for the proposed divisions. We are suggesting a more fundamental organization restructuring, in which Divisional Managers would assume Corporate responsibility for Digital's performance in the selected "segments". Division Managers should be Digital's best managers. They should be selected based upon their general management skills, independent of their current functional responsibility.

We request to meet with you to discuss these recommendations and how we can assist you in focusing on this most important issue for the Company. We should keep this fundamental decision separate from the shorter term issue of how to optimize FY'85 performance.



Interoffice Memo

TO: see "TO" DISTRIBUTION

DATE: TUE 29 JAN 1985 11:44 AM EST
FROM: CAROL BURKE
DEPT: MKTG/F&A PERS.
EXT: 223-2985
LOC/MAIL STOP: ML03-2/T75

MESSAGE ID: 5262484238

SUBJECT: "OUR TASK"

These are the notes from our January 28th meeting. We agreed to meet February 15 and discuss these segments using the criteria to evaluate them.

CRITERIA FOR EVALUATING THE SEGMENTS:

1. Help make investment decisions
2. One Company, one strategy
3. Customers: Help identify their requirements and needs
4. Decide what to disinvest in
5. Understand market share
6. Beat IBM
7. Help make cross functional trade-offs
8. Achieve profit goals: both short term and long term
9. Understand why off-plan; i.e., Business Model Control
10. Move quickly, adaptability to changing marketing trends
11. Providing customer with expertise (focused expertise)

WHO WILL DO WHAT:

Bob:	Industry
Ed:	Geography
Pete:	Applications
Rose Ann:	Products
Ward:	Channels
Carol:	Marketing (functional organization for Company)

HOW WE WILL DO IT:

- Clearly define the space
- Assumptions about other organizations
- Pros/Cons

"TO" DISTRIBUTION:

ROSE ANN GIORDANO	*WIN HINDLE	BOB HUGHES
ED KRAMER	WARD MACKENZIE	IVAN POLLACK
PETER SMITH		

H.C.

digital

Interoffice Memo

TO: STRATEGY COMMITTEE:

DATE: TUE 22 MAY 1984 3:55 PM EDT
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

MESSAGE ID: 5237268234

SUBJECT: THREE GOALS FOR 1985

Today, I am going to present to the Board of Directors, our three goals for 1985.

I. SYSTEMATIZING PRODUCT OFFERING

Assign a Systems Manager for each group of markets, who will maintain a simple list that will be the family of products for those markets. This document will be the one around which we plan our engineering and around which we lay our marketing plans. It should include both the hardware and the software necessary for each group of markets, and it should be simple enough so that everyone, including the salespeople and customers, can understand it and remember it. It should eliminate the need for ad hoc patching and additions that come to product lines because they have not been planned ahead.

There will also be a Systems Manager for each product system. It is his job to, at all times, maintain a systems plan which will assure that all the components and all the software are necessary to make that product useful, saleable, understandable and simple.

II. AUTOMATION OF SALES

We have been automating office, factory design, and software generation for a long time with very good results. Automation never eliminates people. Automation does force us to change the way we are doing things, which allows computers to take out much of the drudgery and to make the jobs more interesting, more satisfying, and much more productive.

We often do not use the word automation, we use the word aided because it is more descriptive. We have computer aided design, computer aided factory, and perhaps we should have the computer aided office. For this major project in 1985, maybe we should call it computer aided sales.

The efficiency of our company and other companies is growing so fast during the recession and largely through the use of computers, that sometimes it is hard for us to realize. However, sales is still largely people dependent and all our growth for the future seems to assume that sales will grow in proportion to the size of the Company.

There will be two parts to this program. First of all, we will lay out all our products and all our offerings to each market in a simplified format, so that anyone could order our products and understand what he is getting with complete confidence. Technical description is so complete that he will not need the help of the salesperson.

Of course, the salesman will still be important, but the result will be his job will be satisfying and a lot easier. He will always have the information even if the customer will not read it, and even if the customer could get it by himself from the literature.

The second part of the program is to automate inquiries, order processing, order filling, and inquiries about order status and automatic order change making.

When I ask why the turnover in the Sales Department is high, the answer uniformly is frustration in taking care of these items. They want to go out and sell and they have to spend all their time working these problems through the huge organizations and hard-to-find people. This does not need artificial intelligence. It simply means simplified systems, eliminating all unnecessary analysis and red tape, and doing everything with computers.

I want any salesperson or any qualified customer to be able to make an inquiry and place an order from any computer, anywhere, or from a portable terminal hooked up to a telephone. I want his answer to come back as to exactly what serial numbers will be shipped, when, and what will be done with the parts not in stock. Any customer, any salesperson can automatically find the status of that order by telephone.

Computerizing many of the functions in Sales does not mean we will stop our normal function of optimizing the organization. We will continue to review each overhead function, each layer of management, each set of data that we requested from the Sales Department, and hopefully, every job description to be sure that they are absolutely necessary and that the return is worth the cost.

III. RATIONALIZING AND SIMPLIFYING OUR LITERATURE

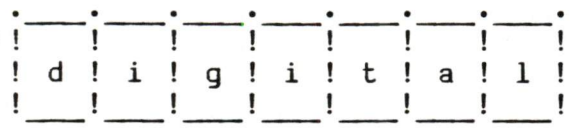
One of the major goals for 1985 is to rationalize, organize, simplify and plan Digital's literature programs.

When we rationalize our Sales literature and our technical documentation, I expect us to put a catalog of literature out once a month that will organize the literature in such a rational format that it will automatically define a program for each technical group and each marketing group.

We would then have a centralized literature distribution organization that will cost a lot of money, but will also save a tremendous amount of money.

I expect this system of marketing and technical literature will force all literature to be in a standard format for ease of distribution and that all documents will be identified by catalog number, and by date, and date of obsolescence.

KHO:blk
KO3:S10.3



Interoffice Memo

TO: see "TO" DISTRIBUTION

DATE: FRI 1 JUN 1984 4:09 PM EDT
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

MESSAGE ID: 5238282793

SUBJECT: CORPORATE 1985 GOALS - JUNE WOODS

I would like to take the two days we had put aside for the June WOODS to discuss our Corporate goals for 1985. The three goals I would like to discuss are:

1. Develop a simple set of standard products for all product lines in the Corporation.

2. Automate sales

3. Automate literature

I would spend the first day discussing our future products. I would like a presentation of the product needs for each market area which sometimes includes more than one product line. I would like to match that with the engineering plans to develop those products.

I would like Jack Smith to collect the data on the market needs, and Engineering's response to it, and the results of the Strecker Committee, and be prepared to present the data necessary for the first day's discussion.

I expect, in most cases, each product line needs one or all of the standard simple set of products that we will be developing. The factory application would need some of these products put in steel boxes and a laboratory might need a slightly different configuration and some ETHERNET versions will be rack-mounted without a cover. But in general, they will be the same products and definitely they will use the same software systems for all product lines.

I expect that, in addition to the standard simple set of products, the OEM group would additionally want to offer a large number of modules and probably a few more central processors. I assume that, at this meeting, we will separate out the OEM Marketing Group and those engineering groups who service them, so that we will look at the whole OEM business and the chips and

I would like Dick Berube to propose, the last half day, a system for automatic literature, and for a catalog which could serve as the only document we send out to our customers.

I would like to spend the last half day on automatic literature. The basis of the automatic literature is going to be a catalog that we will print once a month. This will be a catalog of literature. We will list by market and then list also by product the standard sets of literature that we have for each section. There will be two categories of literature. One is a colored brochure which is expensive and glossy with little information, and a handbook which is relatively plain, but filled with information. In those areas where we have no literature, it will be very clear. There will not be a position for product lines to redo standard product literature because there will not be a place to offer this on the chart.

All literature printed from now on will have a large date on the front cover and on the heel when there is a square heel, so that everyone can tell exactly the age of that literature. This will be stated in the catalog, so customers can tell if the literature they have is out-of-date compared to the literature being offered.

This catalog probably should be magazine quality, and it should be the thickness of a magazine. This should be the vehicle, and the only vehicle, that the Company and all it's product lines use to contact customers. There will be articles about the Company, news items, and ads.

We will send a copy of this to everyone who has ever been a customer and everyone of whom we can find the name that should be a customer.

Each mailing will cost about $1 million. It will probably be the most efficient way to get our message out that we can possibly do.

KHO:blk
KO3:S10.25

"TO" DISTRIBUTION:

DICK BERUBE
ROSE ANN GIORDANO
WARD MACKENZIE
STRATEGY COMMITTEE:
GEORGE CHAMBERLAIN
BOB HUGHES
JOEL SCHWARTZ
BILL STRECKER
SAM FULLER
ED KRAMER
PETER SMITH

Move back

Community Memory X 3090.2005

✓ 10269357	38/B/3/062300402
✓ 10269360	38/B/4/062300406
✓ 10269361	38/B/2/062300415
✓ 10269358	38/B/3/062300385
✓ 10269360 8	38/B/3/062300413
✓ 10269358 3 AV Materials removes	38/B/4/062300388

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✓ 10269360 6	"	38/B/4/062300411
~~10269360 1~~	"	~~38/B/4/062300406~~

~~Was~~ Is any of the Media Cataloged or waiting to be cataloged ??

also time Capsule 10265320 3 @ off-site

I.K4 Compo

9-10

History Friday 4/29 10:30am

I N T E R O F F I C E M E M O R A N D U M

Date: 26-Apr-1988 10:03am EDT
From: Ken Olsen
OLSEN.KEN
Dept: Administration
Tel No: 223-2301

TO: See Below

Subject: ADVERTISING WOODS MEETING

Please read this before the Advertising Woods meeting on Friday, 29 April.

TRACTORS AND COMPUTERS

I am in the market for a backhoe. It is not an important project and I am embarrassed to spend much time on it, but it is an interesting experience.

The other day I stopped at a Ford tractor place and went through their literature rack to get some background information on tractors. They had two kinds of literture. One is a colored brochure with beautiful pictures and glowing terms describing what their tractors would do and the other, black on yellow data sheets which are very plain and just filled with apparently useful numbers.

They have four models which I think may cover my needs, but they seem to be made by different product lines. They seem to compete with each other in who can make the most expensive, beautiful, color brochure and it appears they are more in competition with each other than with other tractor manufacturers. No way would they explain why one Ford tractor would have advantages over another Ford tractor.

Everything in the literature is positive and beautiful. I then tried to study the data sheets. These too seemed to be made by separate product lines even though their tractors were almost identical. They vary from two pages to eight pages and there is no consistency in the way in which the data is presented.

I thought one way of comparing would be to find out what each model weighed so that I could make a guess as to which one had more power and more value. One data sheet had no weights, the next had a tractor without a loader and without a backhoe, the next had a tractor and a loader and the fourth had a tractor, loader and a backhoe. There were all possible combinations and no way of comparing them.

One brochure brags about the wonderful feature of having a 3 point hitch. It goes into great technical detail of what the pin sizes and dimensions of the hitch are, and how much power it has,

but nowhere does it ever describe what the advantages of a 3 point hitch are, and what you sacrifice in order to get it. With all the beautiful color brochures, and the glowing claims made for their tractors which are obviously aimed at the layman, the real questions can only be answered by an expert who happens to know what a 3 point hitch is.

I stopped by the Ford place while going between plants, felt guilty about getting involved with the salesman, and so I didn't talk to anyone. I was afraid that once I did start talking, I would get involved for a long time, and I wasn't sure that the salesman would understand the difference between the models anyway. My guess is the salesman would, first of all, sell only the tractor models which he has had experience in selling, and would not get invovled or feel at ease with the tractor models which he did not have experience with. Then, there is the other type of salesman who I am sure is in this field as in all others, who, once he got hold of you, would spend most of the time telling about his eperiences when he used to sell John Deere Tractors, and avoid all technical issues involved in the present line which he is selling.

If I don't get tired of the whole idea of a backhoe, after trying to figure out the pile of literature I have, I'll try talking to the salesman and see how I do. It takes a lot of nerve, because I feel intimidated by my lack of knowledge about the equipment, and also about the traditions of buying in this market. I don't know if you pay list price or whether you look for a 20% discount. I also have to build up my nerve because I am always embarrassed when they act surprised that I don't know how deep a ditch I want to dig, how heavy a load I want to lift, and I don't even know how high I want to lift the load.

Sometimes I'd like to have you explain whether there is a parallel at Digital with this or not.

KO:18
DICTATED 10/14/85

Distribution:

TO:	Jack Shields	(SHIELDS.JACK)
TO:	Jack Smith	(SMITH.JACK)
TO:	PETER SMITH	(SMITH.PETER)
TO:	Dallas Kirk	(KIRK.DALLAS)
TO:	Ed Kamins	(KAMINS.ED)
TO:	PETER ZOTTO	(ZOTTO.PETER)
TO:	Peter Jancourtz	(JANCOURTZ.PETER)
TO:	Pat Cataldo	(CATALDO.PAT)
TO:	BILL STRECKER	(STRECKER.BILL)
TO:	Win Hindle	(HINDLE.WIN)
TO:	Remote Addressee	(FRIEDRICH @STAR @VAXMAIL)

CC: Ivan Pollack (POLLACK.IVAN)

Forward to: John Sims
Rob Agres
Dick Farnahan

HISTORY

I n t e r o f f i c e M e m o r a n d u m

To: WIN HINDLE*

Memo: 5375766440COR12
Date: Mon 7 Mar 1988 1:24 PM EDT
From: JOHNSON
Dept:
Tel:
Adr:

Subject: WELL WORTH READING. - B.J.

From: ERLANG::PATEL "LKG1-2/E19 - 226-7000 04-Mar-1988 0939" 4-MAR-1988 09:42
To: @EXTSTAFF,SACMAN::ABERDALE,SACMAN::JOHNSON,DELNI::POMIANSKY
Subj: FYI

From: DRUMS::FEHSKENS "len - LKG1-2/E19, DTN 226-7556" 1-MAR-1988 16:19
To: ERLANG::PATEL, CAPN::SYLOR, LINSEY::OBRIEN, VINES::BD
Subj: interesting observations on the DEC culture

From: 29881::CROLL "And there goes Seabiscuit! 01-Mar-1988 1600" 1-MAR-1988 16
To: @TIDBITS
Subj: some well-written words on corporate culture

From: OBLIO::HASKINS "Ric Haskins DTN:293-5924 BXB2-1/G13 01-Mar-1988 1455" 1-M
From: SNOOT::DUBE "My name here" 1-MAR-1988 13:28
From: MENSCH::SCHOLZ "Ron..and thanks for all the fish 01-Mar-1988 1320" 1-MAR-
From: MENSCH::YENDER "ATTENTION ALL HANDS" 1-MAR-1988 10:54
From: FSLMTS::FSLMTS::MRGATE::"VENTUR::DECMAIL::65680" 1-MAR-1988 10:42
From: NAME: OLEARY
From: WJO::RINES "TOM RINES, DTN 282-1425, WJO1-2/D14 22-Feb-1988 1137" 22-FEB-1
From: CELICA::SUSSMAN "Corporate Personnel, 251-1277 01-Feb-1988 1420" 1-FEB-19

May I share some thoughts on DECulture:

All peoples think of themselves as the original People. That's good for their survival, for the development of their collective ego structure, their skin toward the outside world.

A culture that is stable is one thing, but even that is increasingly rare. The Tasaday tribe in the Philippines was a hoax. The Amish are being developed out of existence. In the movie "The Gods Must Be Crazy," the arrival of a Coke bottle disrupts the life of the Bushman.

It may be instructive, if a bit startling, to use these examples. Those are some of the parallels I see to our discussions of Digital's culture. DEC, the culture, is spoken of in tandem with Core Values, in the same tone as one might speak of Moses coming down from the mountain carrying the stone tablets or in the same way Australian aborigines chant about Dreamtime.

This tells me something about where Digital is, historically, in its cultural self-reference.

We are at a time when the precepts of the Founders are harder to discern. There was a time when everyone heard, shared, and created the precepts at the same campfire, so to speak. (In this case, it was the same parking lot, the same bar, and the same woods meeting.) Then they were transmitted by word of mouth, oral tradition,

legends, parables, folklore, (memos) that served to elaborate, refine and reinforce the Message. This was the culture.

And fewer of us are carriers of the culture. There are the elders of the tribe, those of the First Generation, who have known no other way of life than the one of Digital. They are the Original People. There are the people who were close to them, like those who went on the Long March with Mao. They lived it and lived to talk about it.

There are those who don't know if they lived it or heard stories so vivid and appealing that they might as well have been there. At any rate, they have joined their history and memory to those of the Original People, and by extension they have perpetuated the stories.

This went on for some years. I don't want to overdo it, but I don't want to minimize it either.

But something happened, as it does to any culture that cannot remain self-contained. Its points of contact with the Barbarians increased, and it became subject to the influence of forces beyond its control. Its culture became a hybrid as other influences intermingled.

This is precisely the juncture at which psychic, political, institutional and social strain begins to show, and is reflected in all the artifacts of the culture--its music, its architecture, its religion, its crafts...its products and processes.

When someone comes into Digital, we have an initiation rite. We tattoo them: we give them a Badge. This is like knowledge of the secret handshake: it gives them Access to the Network. I believe this is the most coveted perk of belonging to Digital. It is what we guard most jealously. It is what we defend with all our might. It is our most valuable asset, the Ring (as in Wagner and Tolkien).

It is this that marks someone as part of the Society, the Brotherhood, the Family. Everyone else is Other, the outsider if not the Competition.

It used to be, I surmise, that there was a more efficient process of bonding. (Stories abound of encounters with KO.)

Be that as it may, for the past 3 years or so, Digital has been making new Badge-holders of some 25,000 people a year, or 100 a day. I call these people immigrants. I am one of them. And it is increasingly the luck of the draw as to whether these newcomers subscribe to the tenets of the Original People.

What this means is that the culture is not being transmitted in any particular way. The transmission is increasingly two-way. It is my contention that Digital's culture (taken as the Founding Way) is subject at least as much to the Other Ways of the immigrants as they are subject to it.

This means that there are more people very new to Digital than there are who were part of the Long March. For an increasing number of Digital employees, the clock-tower is unintelligible. Some deeper things follow from this:

* The culture is an amalgam. It may be up for grabs.

* There is no systematic, conscious, method of indoctrination/orientation.
* There are more people who might know the words, but not the tune.
* The self-presentation of Digital as a little New England mill town company is quaint, and also perhaps counter-productive.
* We do not have a grasp on our own reality any more. (For example, there is no common knowledge of how many countries Digital operates in.)
* Digital HQ and Corporate functions can no longer get away with the worldviews, mindsets, career perspectives that once served them.
* Because there is less internalized acceptance and agreement on the precepts of the culture, we cannot count on them being exercised.
* The company cannot get away with its official assertions and levels of expertise going unchallenged, either by those who don't know the unwritten rules and pecking order, or by those who know different, and know better.
* Digital's culture is rapidly becoming a polyglot combination of its suppliers', customers', temporary and part-time employees', cultures as well.
* Digital's culture is increasingly taking on some of the characteristics of its competitors' culture.
* Digital's culture is increasingly not that of a little New England mill town company, and there is no way of cycling enough people through the Mother Church (the Mill) to inculcate in them the feel, and the spirit, of bygone days.

All of this adds up to a review of Digital's culture that recognizes its new reality. Some would say the culture has been watered down, that hallowed traditions are in danger of being lost. Some would say it is more dynamic and pluralistic, which is a fancier way of saying the same thing.

Many of the cliches about Digital no longer hold, and yet we hear people saying them.

I happen to believe in some of the features of Digital that are parts of its culture and I want them preserved and perpetuated. I put it in different ways perhaps, but you must allow for my immigrant dialect. I think Digital (the collective super-ego) fosters what I call distributed autonomy. This is, as most of these precepts are, a statement that operates on many levels. Some people call this peer-to-peer communications. It suggests a degree of self-direction, initiative, ability to contribute to an interdependent relationship, honesty, openness, trust, mutuality, self-knowledge, self-respect, generosity: it is a projection of the Founders' ideal.

Not everyone is ready for this, or the consequences of it.

Digital has made a virtue out of necessity. It makes people responsible for managing their own careers and for defining their jobs and for understanding the contribution of their work to the whole--as if that were knowable.

Nobody, no institutional mechanism, is in place to do it for you. This is unnerving for some people. Most simply burrow into their cost center of the moment and mind their own local piece of business.

People who can't function effectively in a setting of distributed autonomy are dysfunctional to basic premises of the company, not only to the premises of its internal organizational behavior, but also to the premises of its external product strategy. Yet there are such people.

How are they acculturated? And how do they act, dialectically, to acculturate others?

There are many examples that could be used. My point is that this is a two-way street. What rubs off is a reversible equation. The culture needs to figure out how to preserve itself even while it is changing.

D-11/10/87 Woods

I n t e r o f f i c e M e m o r a n d u m

To: see "TO" DISTRIBUTION

cc: IVAN POLLACK

Memo: 5363175783COR06
Date: Mon 2 Nov 1987 4:06 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: CORPORATE PRODUCT STRATEGY - NOVEMBER 10 WOODS

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If at all possible, I'd like to commandeer the November 10 Executive Committee WOODS meeting to produce a formal written statement of the Corporate Product Strategy.

I'd like three or four vice presidents from the field to join us, and, out of this, I'd like a formal written statement of strategy.

I. More and more customers and potential customers are committing to non-proprietary or de facto industry standard systems. Are we going to turn our back to these customers or are we going to embrace these de facto standards to get as much of their business as we can? The de facto standards are of course Apple, MS-DOS/OS2 and UNIX.

II. IBM networks have dumb terminals which all our financial customers desperately need to be integrated into our VAX networks.

If we are going to embrace these, how are we going to organize to do so? Are we going to loose them in the organization with no particular manager or among the VMS group or other parts of the company? Are we going to have somebody in charge? Is there going to be somebody that we review regularly and consistently? Are we going to give mouth service to this, or are we going to win with a strategy?

III. Are we solution oriented, or are we architecture oriented? Are we making architectures that we hope patiently someone will figure out how to use, or are we making a list of problems that we plan to solve, what the solutions are and how we schedule, budget and staff to get those solutions.

III. Do we organize engineering in the British way or in the Digital way? In the British way, they dump many projects on the engineering manager who feels little emotional investment and who feels it is below his dignity to get involved in the technical details of the product or the strategy. The company managements seems happy to dump part of the problems on him, but he feels no responsibility when they don't work, because the job is distributed so

informally with so many people that it rarely gets done and no one can be clearly held responsible.

The Digital way of management has produced our most successful, maybe our only successful, products. Someone is clearly responsible. It is a narrow responsibility. He is emotionally, absolutely and completely committed to its success. The leader feels competitive with other parts of Digital and with the outside world.

It might be interesting to review the history of the results when we've dumped a long list of projects on one leader like we do marketing on Pete Smith and desktop on Jeff Kalb.

V. What is our desktop strategy? What are the problems we plan to solve? Are we pushing pet ideas and pet architectures, or are we out to solve particular problems?

I think it would be good if Jack Smith presented all these strategies and then the Executive Committee and the field vice presidents do the approving or disapproving.

KHO:ld
KO:1366
(DICTATED 11/2/87 BUT NOT READ)

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Leave print mode and press RETURN
I n t e r o f f i c e M e m o r a n d u m

E.C.

To: WIN HINDLE*
JIM OSTERHOFF
JACK SHIELDS
JOHN SIMS
JACK SMITH

Memo: 5362573102COR37
Date: Tue 27 Oct 1987 3:20 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: MARKETING BY COMMITTEE AND BUREAUCRACY

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In the early years of Digital, when we ran the Company with a committee which was a combination of the Executive Committee, MSSC and Strategy Committee, I was terribly pained to see that the committee's spirit of interest was much more limited than needed by a ten million dollar company. Everyone wanted to work on the same projects, but no one would get emotionally involved in the rest of them.

We took care of this by breaking the Company into product lines, and miraculously we could simultaneously show great enthusiasm, great management effort, creativity, enthusiasm, and involvement with the feeling of responsibility. The result was absolutely miraculous to see how many details and how many complete programs we could take care of. This was especially important compared to the committee approach where people wanted to take part in discussion with no responsibility and no preparation.

Today we have many good products in which we have invested a lot but which the customers and the sales department cannot buy and sell without help from the Corporation. They need a strategy which is the heart and soul of someone who will worry about it, dream about it, plan and scheme about it 24 hours a day. With committees who make the decision with a lot of conscientious work but with no feeling of responsibility, it's impossible to get this.

We claim we have found the solution--we said we could do it by bureaucracy. We put all the marketing under Pete Smith and Bob Hughes.

Despite how good Bob Hughes and Pete Smith are, there comes a time when a ten million dollar company has more details than they have in their span of interest or energy.

It is clear to me that the reason we don't sell many of the products we develop is not all the result of excuses we often give or not because "Digital doesn't know how to do that". It's because Digital won't assign the responsibility to someone and hold him responsible for the results, and we won't give him the responsibility for making a proposal and then give him a hearing like we used to do with product lines.

If hard times come, it is going to be important that we market

all our products--not just those that the customer can find out about himself.

KHO:ld
KO:1346
(DICTATED 1Ø/27/87 BUT NOT READ)

I n t e r o f f i c e M e m o r a n d u m

E.C.

To: see "TO" DISTRIBUTION

Memo: 5361965433COR03
Date: Wed 21 Oct 1987 1:13 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: SEABROOK STRATEGY AND DESK TOP STRATEGY

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Our society has a ridiculous approach to electric power. We clearly make the utilities responsible for always having enough power for whatever use and whatever growth we may have. But then we say or imply that they have to make every segment of our society happy with any approach they have to generating power. Every approach has a lobby against it.

Some say that it's obvious we can't trust all our power to a foreign country, particularly if they speak French.

Others say it is atrocious to even consider making another dam that would mess up rivers and farms and wood.

Coal is unbelievably messy and dirty on land and in the air.

Oil causes acid rain.

Many people think of many reasons for stopping nuclear power. Most of the reasons are common to all power plants, and if you took their reasons seriously, you'd go without power.

Then, to top it off, there is an MSSC in the federal government that has to make all approvals. It is a politically minded group that doesn't want to offend anybody, doesn't want to take any chances and never wants to get into trouble.

The whole procedure reminds me of the low-end developments within Digital. No one is responsible. Anyone can stop a plan, but no one is responsible for a plan, and the final MSSC committee has no responsibility for any success.

KHO:ld
KO:1326
(DICTATED 10/21/87 BUT NOT READ)

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E.C.

Interoffice Memorandum

To: EXECUTIVE COMM:

Memo: 536176Ø431COR92
Date: Mon 19 Oct 1987 11:49 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-23Ø1
Adr: MLO12-1/A5Ø*

Subject: ECONOMIC STRATEGY

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I think we should redo our strategy and consider the possibility of any major economic down-turn in the U.S. and Japan.

Until we see clearly what the future holds I suggest that we immediately put a hold on all hiring, all building, and all expansion in this country and in Japan.

KHO/ma
KO.1319

Dictated 1Ø/17/87, but not read.

Interoffice Memorandum

E.C. D-12/15/87 Woods mtg

To: EXECUTIVE COMM:
IVAN POLLACK

Memo: 5361765982COR42
Date: Mon 19 Oct 1987 1:36 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: DECEMBER WOODS MEETING

****
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There is an undercurrent of feeling in the Company, that Finance sees its position to make major and minor business decisions, and use their access to data and their right to adjust allocations and overheads, and to distribute costs, to prove their conclusions often after the fact. This leaves the rest of the Company very frustrated and very defensive. It also leaves some of our very well educated, very analytically and mathematically inclined people to feel that Finance is so mysterious and so arbitrary, that it is beyond comprehension. I share some of these fears.

I am always reluctant to ask some of the questions like those I am going to ask in this note, because people are so used to adjusting figures to prove what they want to, that I am sure people are going to try to discern what I want to accomplish by the questions, and will set about to sort out the data so that they can prove I am wrong or to cooperate with me to get what they think I want to get. It has got to the point now where people cannot conceive of the possibility that I ask questions to help us make the right decisions and to discern the truth, and not to push my particular hobbies.

Engineers are told, or left to figure out themselves, that manufacturing cost is the only measure of success on a project. All the other costs that go into the huge markup they have to use, are the result of the capriciousness of Finance, the inefficiency of the Field, or the stupidities of the people who do the configurations.

The foolishness of manufacturing costs only should be clear even to an engineer. Knocking 30% off the manufacturing cost does not improve the cost of selling configuration, and does not automatically cut down the number of mistakes in ordering, and does not make the installation faster and the payment sooner by 30%. In fact, depending upon what they did to cut the 30%, they might even have made the other costs higher.

At the December Woods I would like to have proposed three models for three parts of the Company, and in going through the exercise, I would like Finance to demonstrate that they will be of service in making the decisions. Decisions should be made by those responsible, and Finance should be a help. Decisions shouldn't be made by Finance who ascend more and more into a position of criticizing without responsibility.

As a starter, at the Executvie Committee Woods next week, I would like Finance to say what help, what rules of thumb, and what education, has been given to Don McGinnis as he has taken over the new business unit responsibility for Workstations? Has he been told that the initial price has to be a markup of the initial cost, or the cost after startup is complete? Who gives him the cost figures, and are they covering themselves, or are they assured that the costs are actual costs and does everybody believe them?

If he can buy an off-the-shelf chip for one-tenth the price of the CVAX chip from Hudson; how is he to use this information when he competes with people who use off-the-shelf chips?

Don is laying out business plans for several workstations. We have always lost money in this business. Has he been given help so that he will take into account all the factors involved in making money? When we see his plans, will we be confident that he will make money, or will he be criticized after the fact?

One of his products the new LYNX to be done a year or two from now, has been dropped because we didn't have room in the Engineering budget to design a new one. Let's review this decision, taking into account the cost from the Corporation's point of view, and not just from the Engineering point of view. What would be the total cost of developing a new advanced LYNX, marketing, selling, servicing, inventorying it, etc.? How does that compare with the total cost of buying out someone elses to avoid the engineering cost? What is the cost of testing, verifying, modifying, correcting, and documenting someone elses design? When engineers make these decisions, do they look only at the engineering cost for the inside product and the outside product, or do they look at the total cost for both? If we can't make money on the inside one, is it true that we can't make money on an outside purchased one?

Using this as an example, please identify what we need in the way of a model, so that engineers can understand our business and make truly rational business-like decisions?

At the December Woods, let's create a model with a set of responsibilities for each of the parts of the Company to be sure that we have models, and we have responsibility assigned for each product and each segment of our business.

KHO/ma
KO.132Ø

Dictated 1Ø/17/87, but not read

E.C.

Interoffice Memorandum

To: JIM CUDMORE
IVAN POLLACK
KEN SENIOR
cc: see "CC" DISTRIBUTION

Memo: 5362169783COR83
Date: Fri 23 Oct 1987 2:29 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: "IF YOU WANT CLEAR, SIMPLE ANSWERS ..."

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One of the stories in the unpublished book titled "Sayings of Chairman Ken", says "if you want clear, simple answers, be sure you ask clear, simple questions".

So often we have meetings during which people become more and more frustrated because they do not get answers. But all too often, a question was never asked.

Let's make a rule that, for all agenda items in all decision making meetings, there will be, with the agenda item, a list of alternatives from which the decision will be picked. If there is no question asked or no alternatives presented, put with the agenda item, "no decision expected".

Then, in the minutes, let's insist that for each item the question be stated, the alternatives be stated clearly and the alternative picked be described. If no decision was made, then say that no decision was made because the alternatives were not clear, not complete, not the quality needed or just what happened. Agenda items should not go from one to another until a decision is made on the previous one so it can be written clearly in the minutes.

KHO:ld
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F.C.

Interoffice Memorandum

To: see "TO" DISTRIBUTION

cc: see "CC" DISTRIBUTION

Memo: 5357155468COR54
Date: Thu 3 Sep 1987 11:38 AM EDT
From: IVAN POLLACK
Dept: ADMINISTRATION
Tel: 223-9719
Adr: MLO1Ø-1/F41*

Subject: TASK FORCES

* *
* COMPANY CONFIDENTIAL - DO NOT COPY OR FORWARD *
* *

The Executive Committee believes it is appropriate for greater emphasis to be placed on longer term strategic questions. The Committee has, therefore, established three task forces to assist in addressing the most significant issues facing the Corporation.

It is expected that these task forces will interact with the Executive Committee on a regular basis. Objectives will be to identify issues, develop alternative courses of action and recommend programs for implementation, as appropriate.

1. Task Force to address the end-user segment of Digital's business. Specifically, how do we operate at 30% annual growth and attain a 16% operating profit within three years.

   Membership:

Pier-Carlo Falotti	Ivan Pollack (Secretary)
Dick Fishburn	Grant Saviers
Dave Grainger	Chick Shue
Bill Hanson	Pete Smith

2. Task Force to address how we continue to win over IBM during the next five years.

   Membership:

George Chamberlain	Bill Johnson
Bill Demmer	Jack MacKeen
Larry Goodwin	Ken Swanton (Secretary)
Bob Hughes	Harvey Weiss

3. Task Force to address who are our major competitors (except IBM) in the next five years, and how do we win over them. The task force will be responsible for identifying those two or three competitors.

Membership:

Henry Ancona	Dan Latham
Jim Cudmore (Secretary)	Bob Palmer
Bruno d'Avanzo	Don Zereski
Sam Fuller	

Each Secretary will plan a meeting in the early October timeframe. In the interim, he will set up some time with you individually to provide you with more background and solicit your initial thoughts. With that insight, he will formulate the initial meeting's agenda. A first meeting with the Executive Committee will then be arranged for late in Q2 to review the task forces definition of "the work" and to insure it is in sync with the Executive Committee's expectations.

EC4:3

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BILL DEMMER	PIER-CARLO FALOTTI
DICK FISHBURN	SAM FULLER
LARRY GOODWIN	DAVE GRAINGER
BILL HANSON	BOB HUGHES
BILL JOHNSON	DAN LATHAM
JACK MACKEEN	BOB PALMER
GRANT SAVIERS	CHICK SHUE
PETER SMITH	KEN SWANTON
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Interoffice Memorandum

To: JACK SHIELDS
JACK SMITH

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Memo: 5359365120COR34
Date: Fri 25 Sep 1987 2:22 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: PRINCIPLES FOR DECIDING ON NEW PRODUCTS

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A. DEMOCRATIC DECISION MAKING

We believe in learning from everyone and we believe that those people within the company with experience on a particular question should always be listened to.

However, decisions are not made democratically. Only those with responsibility for the decisions vote on the decisions, and the proposal is only made by the person who is proposing that he take responsibility for the project.

The proposal is made by the one proposing to do the job. The approvals are made by his boss and his boss and his boss, the Executive Committee and the Board of Directors, because they all have clear responsibility for the decision.

B. TAYLORISM

Scientific management as developed by Taylor and Babbage and a few others did a lot to rationalize, organize and systematize management. However, some stupid things have come as a result of this including what is sometimes called "Taylorism".

Taylor proposed that every job in the factory be broken down into specialty and any one person only do one thing continuously every day of his life. The result is great efficiency because everybody is truly competent and truly expert in that one thing which he does all the time.

Taylorism made an enormous contribution to the mass production which we have seen since Taylor, but it did forget one important thing, the human factor. You don't get the best out of people if they're treated like a machine that can only do one thing.

There are a number of examples where Taylorism has been applied to engineering in American organizations. It sounds so rational. In fact, five or eight years ago, Digital's engineering was fast going this way. There was a plan laid out by which we had experts who would conceive our products, experts who would start products, experts who would go the next step, experts who would finish the product, and then

experts who would get it into manufacturing and so forth. The result was that, for five years, Digital came out with absolutely no new products.

It sounded so rational when it was outlined, it was very hard to argue against the people who had this wonderful vision straight from heaven of how to do engineering, but they never reviewed history to see that it was not a new idea and it never did work before for anyone else.

Since then, when new products have been clearly the responsibility of one group from start to finish,the results have been great.

With Taylorism, no one feels responsible, no one feels ownership and no one has respect for any of the other groups in the sequence.

When one person or one group is responsible, they are motivated to cut out red tape, to get it done quickly and only in the success of the product.

C. EXPERT

In the early years of Digital, we had little respect for experts. RCA and General Electric hired expert market researchers to find out what the customer wanted. Of course, the only things they had seen were IBM machines, and so the experts said the only thing the customers wanted were IBM machines but 10 percent cheaper. The rest of the story is history. Five, eight or ten years ago, we got the idea that we would absolve engineering from responsibility for product decisions if we got marketers to commit to the products before hand, but with people looking for an excuse for failure and documenting who was responsible for the failure, the results were very poor.

In the book "Made in Japan", Akio Morita says:

1. Marketers discover that customers only want what they have seen already and therefore nothing new ever comes from marketers.

2. Sales people don't want to learn anything new and so they only want to keep selling the products they have today (maybe with more features).

3. Finance people want no new products because it involves capital and risk.

4. Engineers are reluctant to do something they haven't seen someone else do.

NOTE: I am not sure that Morita said all of these things. I may remember what I want to remember.

Therefore, new products only come from someone with a real feeling for the market that comes from much experience with a new vision of what the customer wants even though he doesn't

know it, a willingness to take the risk to prove his idea and a willingness to take full responsibility for the risk.

D. TAYLORISM AND STAFF

In all large organizations, the senior people, usually those who used to be creative and took responsibility, get tied up in the red tape of meetings, customer relations, and personnel chores and the management of engineering gets turned over to staff. Staff is never measured by getting a job done, having an elegant product or taking risks, but their job is only to keep peace and not have any trouble or surprises for the boss.

Therefore, staff lays out a line of products which are organized, and there is one for every category. Each one is then staffed and budgeted. People are budgeted like money, because staff cannot afford to allow human motivations to fit into the decision making. New projects are assigned to unemployed groups. Whatever they ask for in terms of staffing, money, and capital is usually given to them, and they know a long delayed schedule is usually safest.

Staff manages things with endless red tape, reports and reviews, some of which are important.

Some groups take forever to get a job done, but they never cause any trouble to the company, the boss, or the staff.

Other people get things done very quickly, and meanwhile, while doing it, come up with a number of new products with very little cost and very little effort. This is very disturbing to the system because, above all, the system is to be followed, the plan is to be followed and so much money is allocated to the slow moving tedious projects so that the system can't handle anything new that is quick and easy and obviously a good product.

E. THE WALKMAN PRINCIPLE

The walkman was probably one of the most successful ideas in modern technology. Morita says he knew better than to ask marketers because they never saw one and therefore they would turn it down. He knew the salesmen wouldn't want it. He asked his engineers and every single one said there was no need for it. He was the only one in Sony who believed in it, but he had years of experience, he knew how to take responsibility and he knew when he pushed it, it would be his responsibility and he knew he would lose his job if it failed.

The test that should be put to any organization is, "is there room for a Morita with a walkman idea where someone says I want to take responsibility, I want to put my job on the line, my name on the line, and I am willing to work all hours and make a complete commitment to prove my idea".

This is quite different from having a thousand engineers filled with ideas that they saw in a magazine that they think

the organization or somebody else should take responsibility for, and they get very unhappy if this creative idea which they saw somewhere else is not accepted by the organization even though it never entered their head to take the responsibility.

F. SOME SIMPLE PRINCIPLES

1. All new products obviously should be within the strategy, tradition and capability of the Corporation.

2. People should have freedom to informally, while doing other projects, invest enough in an idea to be ready to propose it. Sometimes this means making a complete working model and sometimes it just means a vague paper step.

3. Before the project is staffed or committed to the point where it would be painful to turn it off, a business plan should be proposed and approved at least for the first step. This plan can be very simple, very informal and very quick. If the alternative is to go ahead without a plan, people should at least be willing to write down the reasons they would like to go ahead. But if they want to go ahead, they surely must have something written down even if it only takes half a paragraph.

   Every plan, even though it's a half paragraph plan should state the specifications, the costs expected and several checkpoints, at which time the project would be stopped or redone or continued depending on how well the project was going.

G. WHAT WE SHOULD HAVE LEARNED FROM THE PRO PC

We made a number of mistakes in our first PC business, but probably the one most serious mistake, which caused all the others, was that we never had a business plan, we never had a set of specifications, we never had a commitment to dates, we never had a review against the cost, the specs, and the dates. We had an open-ended budget, open-ended specs and changes were made informally without announcement or commitment.

H. "ANYONE CAN SAY NO, NO ONE CAN SAY YES"

A number of years ago, red tape was added in engineering but decision making was made more and more informal to give the top people freedom to change at any time. However, with no clear decision-making policies, we soon got to the position where anybody or everybody felt an obligation to pass judgment on every proposal. It frustrated people who felt they had to have their proposal approved informally by everybody, and there was no one who could say yes.

The worst of all possible worlds is when anybody with no preparation, no background, no experience and above all no responsibility could say "I want to approve that". Then, to top it off, we started committees called PMSC and MSSC which

were filled with people who often didn't do homework, took no responsibility but felt an obligation to veto projects they knew nothing about.

No one would write down on paper a theory of management which said, any proposal is open for veto by anyone in the organization or by anyone in any committee formally set up, or by any self-appointed organization that made arbitrary self-enforced rules about anything in which they felt themselves expert.

If there are any regulatory organizations within the company for things like safety, radiation, and so forth, they should not have arbitrary power. They should instead make a list of rules and specifications and these should then be approved by a higher organization and there should be a vehicle for proposing exceptions to these rules.

We should never have a self-appointed organization making its own rules, pass judgment on their rules, and pass out punishment without further review.

The only possible theory of decision making is to say that, being an open democratic organization, we will collect all the complaints and criticisms from anybody who has them, we will respect committees of experts who do work and when they make a proposal we will include all the criticisms and suggestions and sometimes accept them. But the decisions to go ahead with the project are not dependent on the approval of anyone except the people with responsibility for its success which means those who the proposer works for, the Executive Committee and the Board of Directors.

KHO:ld
KO:1272
(DICTATED 9/24/87 BUT NOT READ)

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Interoffice Memorandum

To: see "TO" DISTRIBUTION

Memo: 5357156Ø8ØCOR58
Date: Thu 3 Sep 1987 11:36 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-23Ø1
Adr: MLO12-1/A5Ø*

Subject: COMPONENTS OF THE BUDGET

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I find I have little feel for how our budget is put together. It is the sum of several different businesses and made up of the cost of 1) maintaining the business, 2) growing the business, and 3) changing the rate of growing the business.

I'd like to have a two-day WOODS meeting for the Executive Committee sometime soon, at which time we will spend all the time on the budget trying to understand our business. I'd like you to start breaking the business down into pieces and mathematically assigning factors to the business. Today, how much we spend appears to be more a function of our confidence than of the actual need; and if this is broken down into pieces with numbers assigned and relationships assigned, we should get a good feeling for our business.

I'd like to break the business down into products and markets and assign a cost to maintaining and growing those that are traditional and the cost of starting and growing those which are completely new to the Company. I'd also like to break the Company into various businesses such as commodity hardware, tools hardware and large systems hardware and in addition into selling, software services and field service.

Each one of these businesses should have components that are made up of three parts which in college we would have described as C = AX + B dx/dt + C d2X/dT2 where C is the cost and X is the size of the Company. The first component is the cost of running the Company at size X. Whatever X is you multiply by A and that is the steady state cost of running that part of the business.

The second part is the cost of growing the business. The dX/dT is the rate of change, and B is the factor that changed it to cost. It costs money to grow, and we've seen in the past that money comes pouring in when we stop growing or contract.

The C d2X/dT2 is the cost of increasing or decreasing the rate of growth. If we cut back on the planned growth for the next few years, d2X or T will have a finer value and it should increase the profit.

This does not describe mathematically the phenomena which is maybe even more important, but somehow we should be able to write it down. If we ship more than we budget, the profit is high, and we pay very little of the formula cost that goes with it. Sometimes we never have to pay that cost and sometimes that cost is postponed to a future date.

The budget never will become a simple mathematical equation, although it probably is approached that way as people use spread sheets. These factors A, B and C might come from the spread sheet factors that are already available.

We should also try to state mathematically our Corporate financial goals. The goals are clearly to increase the profit per share but limited by the future profit per share and limited by the safety and security the Corporation needs and the need to develop people and leaders and to limit the strain we put on people.

Profit per share is made up by multiplying size times profit percentage times dilution. Dilution is made up of asset management, stock options and stock sales or commitments to sell. I'd like to have us make a pass at the mathematics of our budget so all have a feel of how it works.

If we break the Company into pieces, we, of course, will have a manager for each piece who will propose his budget and argue for all the factors.

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EC?

Interoffice Memorandum

To: see "TO" DISTRIBUTION

Memo: 5357146663COR74
Date: Thu 3 Sep 1987 9:03 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: BUDGETING

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For our Friday budget meeting, please tell me what would happen if we did the budget assuming that we will end up in fiscal '89 at a growth rate of 18 percent.

Last year we grew more than we planned and the profits were very good. We also held back on expenses. This year, we planned the same profit and the same growth, and it does not fit.

If we make a plan that fits, the obvious thing to do is to cut back on growth and a little on profit and have a plan that is safe. This not only would be safe but will give more opportunity.

Let's budget less profit for each quarter so the growth rate at the end of '89 is 18 percent and see what the budget looks like.

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Interoffice Memorandum

To: see "TO" DISTRIBUTION

cc: GEORGE CHAMBERLAIN
DICK FISHBURN
BRUCE J RYAN

Memo: 5357Ø54259COR77
Date: Wed 2 Sep 1987 11:Ø6 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-23Ø1
Adr: MLO12-1/A5Ø*

Subject: FINANCIAL GOALS FOR THE CORPORATION

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We now say that we have a list of financial goals, which last year we met quite well. However, if you look at the way we operate, we really have a different goal. I think we should organize our thinking and tell the world that all these detailed goals we've been stating are really components for the major goal, and sometimes these components are compromised to optimize the major goal.

If you look at the way we plan, the way we talk and our ambitions, it is clear that our goal is to optimize the return to the stock holder for both the immediate future and the longer term future.

We clearly do not optimize our planning for return on sales even though we claim this is a key measure and the key measure which many of the financial analysts use. We all say it is a naive measure and return on assets is better, but this is still the one that everyone uses. Total profit per share is clearly the measure, and it is definitely a function of profit asset utilization and growth. It is optimized by increasing profit, increasing growth and decreasing the number of shares.

When we get together on Friday at 1Ø:3Ø to discuss our plan, let's also see if we can't agree on our real financial goals for the Corporation.

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Interoffice Memorandum

To: JOHN SIMS

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Memo: 5351549956COR71
Date: Thu 9 Jul 1987 9:54 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: JOB CHANGES FOR THE EXECUTIVE COMMITTEE

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I'd like to postpone swapping jobs among the Executive Committee. I think it is basically a good idea. I think it's important that we introduce new ideas in areas and we get ourselves trained to do new things.

However, there are a few things I want to do first. I want to make sure that we understand our business, that we have a model for each piece of it and we know how we want to drive these models and how we want to run our business. We'll talk about this at the August Woods.

Secondly, I want to make sure we understand how we want to use finance for helping managers and engineers run the Company.

Thirdly, I think we have to learn to market. Right now, for many parts of the year, we use part time engineers who have given up engineering but without any formal approaches that make sure we do a thorough, complete, professional job. We have not yet faced the question of whether we need a professional marketer to run all the marketing of the Company. I'd like to use the Cheap 6 diskless PC as a demonstration to show us that we can and how we can market a particular product.

When we get these things done, we might then do well considering swapping some jobs around.

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Interoffice Memorandum E.C.

To: see "TO" DISTRIBUTION

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Memo: 5352665573COR68
Date: Mon 20 Jul 1987 2:15 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: CHEAP COMPUTERS AND AUGUST WOODS MEETING

****
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I think we know how to make powerful, time shared computers very inexpensively. If we sold them by mail or by telephone without installation or other services, we could sell them for very little money.

The problem is that the sales time, the hand holding, the waiting, the proposing and the redoing of proposals, and more hand holding very quickly cost much more than the cost of the equipment. Without a huge mark-up, we would starve.

On the other hand, if we could sell the equipment very low but don't, someone else will, and we won't get the business that way either.

Therefore, it is clear that we have to figure out how to sell the equipment at a fair price with a good profit and then charge for the systems integration, the hand holding, the bidding, etc.

For the August WOODS, let's build a model assuming that the equipment costs us nothing, but let's then have a detailed model to include the pre-selling, the selling, the installation, the hand holding from the sales department, software service, field service, the officers of the company, and everything else. From there, let's then make a model that shows how we can sell at a fair price to people who don't need services, charge those people who need a little service, and charge people that need a lot of service.

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I n t e r o f f i c e M e m o r a n d u m

To: JOHN SIMS

Memo: 5349158299CEL87
Date: Mon 15 Jun 1987
From: BEN FORDHAM*
Dept: CORP CONSULTING GROUP
Tel: 251-1289
Adr: CFO2-1/Q14

Subject: SUMMARY & RECOMMENDATIONS OF SR MANAGEMENT INTERVIEWS

As promised we are sending you, attached, a summary of the information we collected in the Senior Management interviews you commissioned. Additionally, please find our suggestions for a process to continue and enhance the dialogue.

Since you will share these data with the BOD on 24 June we will await your instruction on continuation.

We are pleased to be of service and excited about the power of the conversations we've had. Please know that we are anxious to continue in the suggested process.

SUMMARY OF LEARNINGS AND RECOMMENDATIONS PROMPTED BY A SERIES OF SENIOR MANAGEMENT INTERVIEWS

CONTEXT AND METHOD

It was felt that Digital's positive market and product position was an appropriate time for conversations and projections about the future. It was decided to initiate, among very senior managers, a dialogue on how the structures, processes, and strategies of the company might be used to optimize our good fortune. Edgar Schein, and members of the Corporate Organization Consulting Group were chosen to plan and initiate a series of interviews which would serve two purposes:

a.) Start the dialogue, supplying a framework for discussion;

b.) Gather enough information from the managers to suggest an effective way to continue the dialogue.

A question protocol was created of 11 questions. (See attached Appendix A.) A summary of the comments on each is attached. (Appendix B.)

SUMMARY OF INTERVIEW LEARNINGS

MORE PARTICIPATION

All expressed a desire for more people to be involved in guiding and shaping the company's future. Some expressed it as getting back to Digital's real values, others as a way of avoiding a "power elite", but all wanted participation.

SEGMENTED RESPONSES: A Problem to Integration

Most expressed an unwillingness to comment outside their direct areas of responsibility. They explained it as impossible to evaluate unless a clear corporate direction were first known, or because others more qualified should step up to the job. Most agreed to comment from their view only.

We took this as an indication of respect for others, but also as a difficulty to be overcome before and if "more participation" could happen. No one wants a hardening of the barriers to cross-functional conversation, but all express a need for merging the expertise into common actions.

LESS OPERATIONAL DETAILS AT EXECUTIVE COMMITTEE

It was generally acknowledged that taking responsibility for results away from managers would violate a Digital norm. It was requested that the Executive Committee do less with operational detail. What was intended was allowing committees/managers closer to the detail to bear more responsibility. They differentiated working and deciding the issues from corporate approval. It was also intended that the previous time of the Executive Committee be used to think of the company, market product sets, etc., as a whole. It was felt that as segmented as we are, the Executive Committee should have and share a superior view of the whole.

The suggestion was made most often in the context of discussions about how operational managers could more effectively discuss, evaluate, and finally propose alternatives for consideration by the Executive Committee.

MORE COMMITTEES

No one wanted to diminish the committee structure, e.g., MSSC, PSC, etc. Most recognized the value of the work done there. What was suggested is more committees. Especially critical was the need for a daily operations forum to which issues of importance could be taken. This was coupled with the suggestion of "less operations decisions on the agenda of the Executive Committee." Some rework of the Management Committee of the past, but with less people, a clearer charter, and easier access seemed to be common.

PROCESS SUGGESTIONS AND RECOMMENDATIONS

In the light of all that was said and intended, the interviews suggest the following be done:

A.) CONTINUE THE INTERVIEW/FEEDBACK/SUMMARY PROCESS

If questions are asked, answered, and summarized, a body of knowledge can be created and updated that reflects Digital. We believe it to be, in itself, a positive intervention showing interest in the opinions of those who share the company's work and its future. The information that is collected can reveal commonality and/or divergence within the thoughts of managers. This knowledge can guide actions important to the company. Having access to the opinions of others, if presented in a clear and unbiased way, encourages people to allow consensus to grow. If the presentation is accompanied by an absence of posturing and pressure, it can lead to acceptance and respect. The purpose is to broaden, to challenge, and to inform.

We recommend the continuation of the use of unbiased and independent interviewers, whether it is ourselves or others. Interviewers who are knowledgeable, but not prejudiced can add value to the process of sharing. They can listen, summarize, and recognize patterns of meaning in the data. The added value of turning data into alternatives can facilitate and deepen the discussion of the future. We would hope to continue the process since we are also among those who may be called on to assist in the implementation of ideas found valid.

B.) WE RECOMMEND A FORMALIZATION OF THE PROCESS INTO A VIRTUAL CONFERENCE ROOM.

for vague-

Experimentation and experience will modify any method we choose, but networking is a Digital strength. We recommend a facilitated teleconferencing model, supported by Digital technology and consulting facilitation as a goal. A modified "delphi method" of gathering information, adding value, and sharing seems supported by our Digital philosophy and our technological expertise. This will need further planning, but the concept is valid in response to the interview data.

Conditions necessary for, but not sufficiently developed are:

1.) Start with a function (e.g., Engineering) with a visionary statement about our future.

2.) Network to specific people or groups for their internal considerations and response.

3.) Have the data worked (collated, sifted, oganized) and feedback to selected groups and participants. Repeat this process until the data are appropriate for a wider audience, e.g., groups who must respond as a group or who are effected by the direction evolving.

4.) Work through human and computer networking to create alternative scenarios about our future for presentation to committees of, but short of, the Executive Committee.

5.) Through networking the responses of the committees (as above) into alternatives for the Executive Committee's consideration, the sub-committees should recommend a single alternative, but present and explain more than one.

6.) Once considered/decided by the Executive Committee the same network can be used to describe and elicit implementation ideas.

This is not intended to replace planning or budgeting processes, but to parallel and enhance them. It is intended as a response to the summarized data from the interviews.

ALTERNATIVES

In the spirit of the presentation method recommended above, we recommend the continuation and development of A and B above as strongest. We believe A alone to be a valid alternative. We await your response.

ATTACHMENTS

APPENDIX A: Questionnaire Protocol

APPENDIX B: Summary of Comments from Interviewees

I n t e r o f f i c e M e m o r a n d u m

F.C.

To: see "TO" DISTRIBUTION

Memo: 5346661297COR67
Date: Thu 21 May 1987 1:03 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: HIGH SCHOOL ALGEBRA OF GROWTH

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I have a friend who went to Harvard who ran a business for many, many years and did very well. After 30 or 40 years he developed one of the most magnificent consumer products I've ever seen, and he just about lost his company. I don't think he ever figured out what went wrong, and I don't think the Board figured out what went wrong. I think the answer is easy.

Through all the early years, he intuitively limited the growth to that which the company could afford. When they set about to grow faster than they could afford to grow, everything seemed to collapse. He could never figure out why he, at one time, could grow without doing arithmetic and suddenly he collapsed doing the same thing he had always done.

Business mathematics is often simple enough to operate with a simple model in one's head with a lot of attention and a lot of intuition. However, there are a number of things that are counter intuitive. Profit of course is one of the most important non-intuitive factors. It is the small difference between large numbers which means you can only figure it out by careful arithmetic.

Growth is also counter intuitive. You can grow a certain amount and it seems to come free and have little strain. You grow more and suddenly the planning has to be done very carefully or you run out of cash and/or profit.

There is a level of growth at which you cannot be self-supporting and there is a level of growth at which you make no profit. It is amazing how few business people and how few financial analysts understand this obvious arithmetic.

We're now in a position of wanting to grow faster than we can afford, and I'd like to make an approximation of the algebra involved. I'd like to make a simple algebraic statement of the cost of growth. I do know that the effects are very important and I know that, in all of this, we are making the assumption that we're maintaining a certain level of efficiency and wisdom.

I'd like each of the components of the field to estimate what it would cost over the period of 1987 and 1988 together to have grown and to grow 0, to grow what we've budgeted and to grow 10 percent more; and from this, with high school algebra, develop

cost as a function of growth.

I'd like our three marketing groups under Bob, Pete and Jerry to do the same thing. I'd like them to estimate what our group would be over any number of years if we didn't carry them out, what would it be if we carried out all their plans and what would it be if we significantly increased their plans? From that, they should each, separately, be able to develop a cost of growth in their area.

I'd like the Strecker Committee to look over all the engineering projects and estimate how many of those we would do and what it would cost if we just wanted to maintain today's size for several years. We'd cut out an overwhelming percentage of the projects and just replace those products which we are today selling and carry out the support. Then, please calculate how big the company would be if we finished all the products we are now financing and we got a reasonable share of the market with each one of them. We could define reasonable as either what we think we'll get or what percentage we need to justify that effort. Then, from these points, develop a simple equation of the engineering cost of growth.

Manufacturing is, in a sense, a little more complicated, because efficiency increases with volume for a while, and then the cost gets high and, after a while, the cost gets very high. Let's keep our algebra to linear equations, so let's assume for manufacturing that one point is where we grow to optimize manufacturing and then what it would cost to grow something like 30 percent beyond that. From this we ought to get a fairly good feel for the cost of growth.

I'd like then to have John Sims and Jim Osterhoff estimate what the overhead costs are as a function of growth.

I do understand very well that these equations don't explain everything, but when you have an approximation, you are then able to discuss the other factors with a common background.

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To: LARRY CABRINETY
JIM OSTERHOFF

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Memo: 5339451912COR76
Date: Tue 10 Mar 1987 9:27 AM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: COMMODITY BUSINESS

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I would like to start a commodity division. Tell me what the costs and return on investment would be if we assigned only costs attributed to the division and if we sold a million VT320's per year.

Assume we would ship single units in 1/4 cartons by Federal Express from inventory held by Federal Express. We would ship multiple cartons.

A carton would hold 16 units. Discounts would be at 1/4 cartons, 1 carton, or 16, 32, and 128 cartons. No cumulative discounts, only discounts on each shipment.

This business would not be run by MSSC.

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Ken Olsen Talk File

History

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* d i g i t a l *
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TO: ANDY KNOWLES

DATE: THU 13 AUG 1981 8:52 EST
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

SUBJECT: KEN OLSEN'S GOALS FOR 1982

+---------------+
: d i g i t a l :
+---------------+

I N T E R O F F I C E M E M O

TO: OPERATIONS COMMITTEE

Date: 13 AUGUST 1981
From: Ken Olsen
Dept: Administration
MS: ML10-2/A50 Ext: 2301

SUBJ: KEN OLSEN'S GOALS FOR 1982

✓ 1. Make management important at Digital.

✓ 2. Organize Operations Committee so that twelve people do not report to Ken Olsen.

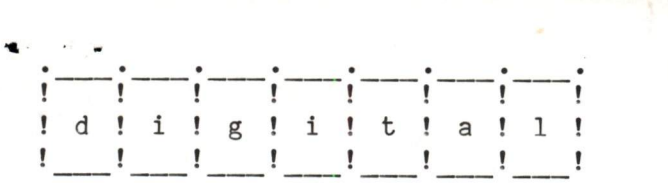
? 3. Organize committees so that they do not take so much of the Operations Committee members' time, and everyone does not have to get involved with everything.

✓ 4. Redo measurements, responsibilities and authorities of European subsidiaries, and clarify worldwide responsibilities of individuals in Maynard.

✓ 5. Develop product differentiation of low-end so that everyone doesn't have to price the same.

? 6. Develop real estate strategy.

KHO/er
KO1:S5.86



Interoffice Memo

TO: *WIN HINDLE

DATE: THU 6 OCT 1983 11:29 AM EDT
FROM: KEN OLSEN
DEPT: ADMINISTRATION
EXT: 223-2301
LOC/MAIL STOP: ML10-2/A50

MESSAGE ID: 5214321072

SUBJECT: NEW YORK TELEPHONE EXPERIENCE AND DIGITAL PC'S

A number of years ago the New York Telephone system was one of the worst in the world. They continuously had wildcat strikes, and the service was terrible. It was clear that it was the quality of the help; operators would work for just a few days and then quit. It was felt that all data pointed to the obvious conclusion, and that was that the black women they hired were incompetent and were not suitable for work. The mother company put Lee Oberst in charge of New York Telephone. The first thing he did was to sit on the operator's stool and play telephone operator for a few days. He immediately discovered what the real problems were. The customers would try to make a call and they'd fail, and they would call an operator, and the operator would fail. After just a few days of this frustration, operators would quit in despair. The problem had nothing to do with their color, their background, or their work habits.

Lee immediately set about to solve the problems. He set up an emergency headquarters and worked twenty-four hours a day identifying the problems and solving them. In doing so he used large numbers of Digital's computers, and he was personally involved with each one of the problems.

He set up a war room, which had two locked doors that you had to go through. In this war room, every time a call wouldn't go through after a certain number of tries, it would flash on the wall and someone was assigned to the problem. If the problem warranted it, a flying squad was sent out to fix it.

He didn't feel the need to sit back and be boss, and make arbitrary decisions from the data presented to him. He got involved enough to find out what the problems were, and he made sure that the problems were solved; he didn't need arbitrary power.

New York Telephone very quickly became the best telephone system in the world. The wildcat strikes disappeared and the staff was cut to a small fraction of its earlier size, because the problems disappeared.

We tend to be good American managers. We sit back, with distance, and draw conclusions about what is wrong, from data. Maybe we should get Lee Oberst in here. He would find out why the salesmen are afraid to sell our personal computers, and he'd find out why

Stores don't have confidence in them, and he'd find out why the customers don't buy them.

Maybe we promise fast delivery, readily available software, and easy-to-buy, easy-to-use, complete-with-software interconnect systems. Maybe we are still promising, and have not convinced people that we can deliver on the promises.

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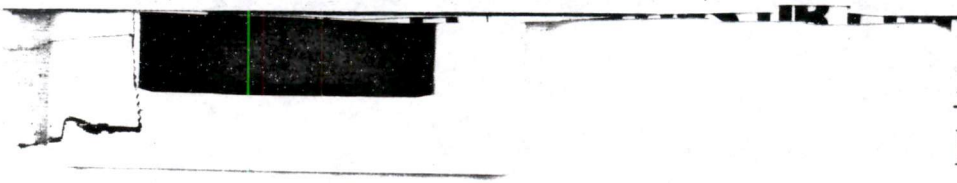

Back on Line

Digital Equipment, Still Led by Founder, Regains Momentum

Olsen Realigns Management And Computer Products; Sales Rise as Rivals Flag

An Autocrat and a Democrat

By WILLIAM M. BULKELEY
Staff Reporter of THE WALL STREET JOURNAL

MAYNARD, Mass.—Gathered in a Digital Equipment Corp. warehouse one day last year, the company's 24 top executives were handed pliers and screwdrivers and told to cable together six different computer systems sitting there in packing cases.

They did it because Kenneth H. Olsen told them to. Mr. Olsen, as the president and chief executive officer since he founded the computer company in 1957, generally gets what he wants. And he wants everyone at Digital to know its products and the problems its customers face.

Mr. Olsen has recently faced problems of his own at Digital. Just a few years ago, critics were questioning his style and calling him a has-been, another entrepreneur who stayed on too long and failed to manage the frequently difficult transition from growth company to corporate giant. But the 60-year-old Mr. Olsen is still firmly in charge at Digital—the largest U.S. manufacturing company still headed by its founder. Moreover, he and Digital are back in favor on Wall Street and are increasingly feared by competitors.

Mr. Olsen's turnaround strategy confounded his fans as well as his critics. Figuring that too many far-flung managers were going in too many directions, he scrapped Digital's widely praised, decentralized management structure. He also centralized design, insisting that all new products use the same basic computing and communications methods—a risky change that slowed development of some new products. At the same time, he kept Digital's widely criticized technical marketing style. "In the past two years, I got no awards, no invitations to speak," he says.

Now, Mr. Olsen is getting compliments. By most accounts, the changes have revived the company. Today, Digital is firmly entrenched as No. 2 in the computer industry (though with sales less than one-

sixth those of International Business Machines Corp.). Digital has revamped its product lines in the past 15 months, sparking sales growth at a time most rivals are mired in an industry-wide slump. And it has opened a wide lead over IBM in letting its computers talk to other computers—an area of growing interest to computer buyers.

Profit Up

All that has begun to lift Digital's financial results. In its second quarter, ended Dec. 31, net income rose 23% to $136.1 million, or $2.17 a share. Revenue jumped 14% to $1.86 billion.

Of course, technological leads are shaky in the computer business, and Digital's newly centralized planning could increase the dangers of missing a new product area. But analysts predict more gains. "Olsen is in this game for the long term," says Stephen Smith, of PaineWebber Inc., who, like most others, was criticizing Mr. Olsen not long ago. "Now, you begin to see the rewards."

Mr. Olsen's personality and his management style are a bundle of contradictions. He is an autocrat who has never named a second in command, who often terrifies subordinates by interrupting presentations, who dictates product designs. Yet he is a democrat who discusses design flaws with repair people on the assembly line, one who created a special engineers' committee that can approve research turned down by executives, and one who pushes employees to disagree.

He was trained as an engineer—he says he learned business theory reading in the Lexington, Mass., public library—but Digi-

Please Turn to Page 18, Column 1

Digital Equipment

1985

Revenue:
$6.7 billion

Net Income:
$446.7 million

Employees:
91,000

Kenneth H. Olsen
president and CEO

Digital Milestones

1957	Founded
1960	PDP-1, first small computer
1963	PDP-5, the first minicomputer
1965	PDP-8, first cheap minicomputer
1966	Sells stock to public
1970	PDP-11/20, DEC's first 16-bit minicomputer
1974	Enters Fortune 500
1977	VAX-11/780, DEC's first 32-bit superminicomputer
1982	Introduces personal computer
1985	Puts VAX design on a silicon chip

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THURSD

Back on Line: With Founder Olsen Still at Helm, Digital Equipment Makes Changes, Regains Spark

Continued From First Page

tal says no American executive since Henry Ford has built so large a company without acquisitions. And he is an egalitarian who is called "Ken" even by secretaries and has banned reserved parking spaces, executive company cars and executive dining rooms.

Technology First

Above all, he has molded his company in his own image—stolid, technical, drab. He always puts technology above quarterly earnings gains or flashy marketing. He concedes that this sometimes makes the company "look dull, boring, uneducated and old." But, he says, it has given Digital a commanding market position now that customers want technically difficult computer networking.

An engineer at heart, Mr. Olsen clothes his balding, bulging 6-foot-2-inch frame in suits that, though expensive, look a tad baggy. Despite efforts to explain computing in words that customers can understand, he frequently lapses into computerese, discussing baud rates and bit paths and communications standards.

Digital, like its founder, often forsakes appearance in favor of performance. While other companies peddle their wares with slick television commercials, Digital disdains them; it prefers technical manuals crammed with software descriptions. While most computer salesmen get hefty commissions, Digital pays straight salaries because Mr. Olsen doesn't want salespeople to push products that customers don't need. And Digital remains headquartered 25 miles west of Boston in the 127-year-old former woolen mill where it was founded.

Renovated mills are trendy now in Massachusetts, but they were just cheap space when Mr. Olsen and two other engineers from Lincoln Laboratories, an affiliate of Massachusetts Institute of Technology, started Digital. Mr. Olsen says MIT provided Digital's corporate philosophy. "There's a spirit of generosity, trust, openness and honesty. And there's competitiveness. Those are the things that should come from a scientist," he says.

Digital prospered making computer parts and large computers. Then, in 1965, Digital introduced Mr. Olsen's most radical concept, the $10,000 PDP-8, which became known as the world's first inexpensive minicomputer. Engineers quickly adapted them as parts of machine tools, electronic typesetters, medical scanners and even the scoreboard at Boston's Fenway Park.

Mr. Olsen remains fond of old computers. He saved many from the scrap heap and formed a collection that later became Boston's Computer Museum. One wall of his own office is lined with aged computer parts. "They're artifacts, like dinosaur bones," he says.

ment machine, moved the lemon to a vacant storeroom, covered it with a canvas and thought, "Whew, I got away with that." But several years later, he came across the machine and idly lifted up the covering. He found a hand-lettered sign that read: "Smith's folly. (signed) Ken Olsen."

Mr. Olsen, an avuncular figure who talks slowly and grins often, views employees with a paternal attitude. Digital has never laid off workers in economic downturns and almost never fires anyone.

A Tough Side

But Mr. Olsen can also be tough. Because he knows so much about technology, he can and does grill subordinates mercilessly. One manager recalls seeing Mr. Olsen "walk up to a guy giving a presentation and hand him his flip charts and say, 'Don't waste any more of our time.' "

At one annual meeting, Mr. Olsen, in a rare move, ceded the podium to a fast-rising vice president for a description of Digital's new office-automation products. When the man droned on too long, Mr. Olsen humiliated him by interrupting in midstream and quickly summarizing the rest of the talk himself.

Despite his prodding, Digital's success led to complacency by the early 1980s, Mr. Olsen says. The product line managers were so busy building and selling their own equipment that they missed new markets. "We had 35 guys running in different directions." He adds: "We had exploited the entrepreneurial way of doing business to its pinnacle. When it became fashionable, we were dropping it."

In the process, half a dozen vice presidents and many other managers quit because their jobs were reduced. The reorganization so muddled corporate reporting that Digital posted a 72% earnings decline in one quarter when Mr. Olsen had expected flat results.

Shifting Gears

But today, business watchers say Mr. Olsen seems to have made the right moves to cope with a maturing company. "A company can't act on every creative idea," says Rosabeth M. Kanter, a Yale management professor who has consulted for Digital and other high-tech companies. "At some point, you focus the company. You harness it."

The need for focusing products became evident when Digital belatedly stumbled into the personal-computer field, a year after IBM's entry hit the market. Digital finally introduced three unrelated products at once in 1983—confusing customers. Digital's computers couldn't run software written for IBM's popular machines. It refused to match IBM's price cuts, wasted millions of dollars on inept television advertising and flopped in the retail market. Today, most Digital personal computers are

semiconductors to miniaturize the VAX design, and it wasn't able to enter the market until last year. Now, however, even Apollo concedes that Digital has become a force in the business because so much software designed for larger VAX computers runs on the VAX station.

An Archrival

Digital also has leapfrogged archrival Data General Corp., a minicomputer company started in 1968 by a former Digital engineer. Six months ago, J. Thomas West, Data General's engineering vice president, contrasted his design with Digital's machines and boasted, "Big, bloated computer companies build big, bloated computers." But Digital's new machines are faster. Mr. Olsen says Data General is "irrelevant—totally irrelevant."

Be that as it may, IBM is hardly irrelevant, and Mr. Olsen is angry that its salesmen are so skillful that computer buyers are willing to wait for promised communications links from IBM rather than switch to Digital. "I know what IBM thinks—they're the messenger right from God," he says. Then he tells a risque joke about IBM's technique of announcing new technology long before it delivers it. A woman, married to an IBM salesman, complains that her marriage is unconsummated. The punchline: "For three years, he sat on the foot of the bed telling me how great it was going to be."

As long as Mr. Olsen remains at the helm, Digital is likely to remain centered on him. A physically fit pilot and canoeist who annually takes two-week vacations paddling on remote rivers near Canada's Hudson Bay, he jokes, "I expect to be around forever." But aides say he is beginning to think about Digital's future without him. Even he concedes, "The measure of my success isn't so much how it goes while I'm here, but after."

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But Mr. Olsen is even more interested in new computers. Despite the march of technology, he remains "a world-class wiring and packaging engineer," one former employee says. Indeed, Mr. Olsen himself designed Digital's sleek, wedge-shaped personal computer, a machine that has never sold well but nonetheless won a European design award.

And he is deeply involved in the details of new products. When Digital designed a new engineering work station, Mr. Olsen determined that it should have a 19-inch instead of a 15-inch screen and how much information it would store. During development, "he'd call us Saturdays or Sundays at home and sometimes he'd drop by" unannounced, says John D. Clark, an engineer.

Delegating Responsibility

Despite his hands-on approach, Mr. Olsen managed to delegate responsibility from Digital's early days—something that stymies many entrepreneurs. To handle soaring minicomputer sales, he created product-line managers, each of whom acted as an entrepreneur responsible for certain markets. The technique spawned 13 years of spectacular growth, and it is cited as a management model in books such as "In Search of Excellence."

In delegating responsibility, Mr. Olsen was always willing to forgive worker mistakes. John F. Smith, Digital's 12th employee and now the vice president for engineering and manufacturing, recalls buying a $7,000 soldering machine, "a huge investment" at the time, that proved unreliable. He says he came in nights and weekends to adjust it so Mr. Olsen wouldn't realize his error.

Ultimately, Mr. Smith bought a replace-

talk himself.

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In fact, Digital had decided in the late 1970s to base most computer designs on its VAX line of superminicomputers. But that delayed development of new products. New companies, such as Apollo Computer Inc. in Chelmsford, Mass., stole some of Digital's bread-and-butter customers—scientists and engineers—by building powerful work stations using off-the-shelf semiconductors.

Digital had to design and build its own

nology long before it delivers it. A woman, married to an IBM salesman, complains that her marriage is unconsummated. The punchline: "For three years, he sat on the foot of the bed telling me how great it was going to be."

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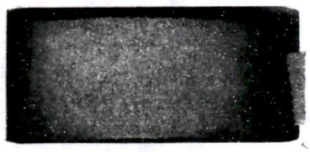

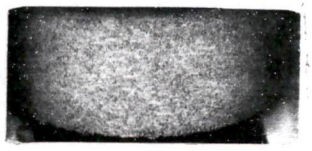

Interoffice Memorandum

To: see "TO" DISTRIBUTION

cc: GEORGE CHAMBERLAIN

Memo: 5330457365COR75
Date: Wed 10 Dec 1986 11:02 AM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: SMALL BUSINESS MARKET

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I did not develop a feeling for the whole market for small business computers at our last review. I would like presented a review showing the complete market for those things now being done and for those things that are to be done by computers in small businesses. Who is the market and what are the needs? Are they best done by direct or indirect sales? If you go along with it, I would like to ask George Chamberlain to chair a committee that consists of Jay Atlas and one or two of his staff, and Jack MacKeen and someone from his staff, to prepare this presentation.

I refuse to make a simple decision like "yes" or "no" for small business, or direct or indirect sales, because the problem is more complicated. For example: it is likely that we will conclude that to get to the automobile dealers, it will have to be a corporate program with direct selling and a large investment even though the dealers are all small businesses. For most small businesses, it is probably equally obvious that they will have to be sold through OEM's, stores, consultants, and financial auditors.

I would like the committee to outline what has to be done in order to sell to them. We sometimes jump at this because we feel we can avoid the work, but we have to complete the engineering and packaging, and offer something that OEM's, etc., can use quickly and easily with little cost or effort.

We also have to protect those same applications that are done on the network for large organizations that we should sell as part of the networks. These applications need our support and our sales activities and we should not open them up to OEM's.

KO:504
(DICTATED 12/10/86 BUT NOT READ)

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E.C. History

Interoffice Memorandum

To: see "TO" DISTRIBUTION

cc: see "CC" DISTRIBUTION

Memo: 5343875244COR77
Date: Thu 23 Apr 1987 4:55 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: APRIL WOODS MEETING

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At the WOODS meeting next Wednesday and Thursday, April 29 and 30, I would like you to present a chart showing all of the hardware and software you need for the next three years for each of your business plans. I know this is too short notice to do a thorough job but it gives an excuse to add to it, modify it, and to back down gracefully if you are criticized.

When the product lines worked very well for the company, the rules were very simple. Every part of the organization which included finance, engineering, manufacturing, and sales were services to the business units. They laid out the plans and the Executive Committee committed the services to do their part of each plan. This fell apart when the product line managers got carried away with their power and exercised power without responsibility. When we broke up the product lines we threw out the baby with the bath water. We now have centralized planning groups with no responsibility to make the customer happy and there is no vehicle for business units to formally get top level commitments to the things they need to make their business units successful.

We ridicule the Russians and other Communists for centralized planning because, regardless of how smart they are or how hard they work, they can never plan all the details necessary to make the customer happy. It can only be done with small business units. We are fast going to go the way of the Russian planners if we do not have someone planning the infinite amount of infinitesimal details needed to make the customer happy.

After we collect these charts, go over them, review them and understand the cost of being in so many businesses, we can then decide which ones we want to be in and which ones we want to put a bigger investment in, and we will then be in a position to listen to the Strecker Committees proposals for next years' engineering budget.

KO:879
(DICTATED 4/23/87 BUT NOT READ)

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I n t e r o f f i c e M e m o r a n d u m

To: KEN OLSEN

cc: see "CC" DISTRIBUTION

Memo: 5343851073COR07
Date: Thu 23 Apr 1987 10:15 AM EDT
From: JACK SMITH
Dept: ENG/MFG/PROD MKT ADMIN
Tel: 223-2231
Adr: MLO10-2/A54

Subject: RE: FIRST PASS AT ENGINEERING BUDGET

I believe your memo "First Pass at Engineering Budget" is confusing a number of processes we have going.

The STF EC session, scheduled for April 29 & 30 is not an Engineering budget review.

It is a session to provide a degree of understanding at the Executive Committee level of currently approved and proposed product development programs as submitted by the responsible product development PBU's. It is essential for us to understand their reaffirmation of current approved programs and proposed programs is based on their understanding of the evolution of the technologies relevant to their product development responsibilities. It is the intelligence of Digital's Technical Community, offered to the EC, to help them listen, discuss and, in time, approve product requirements from the Marketing, Sales and Product Development submitted business plans.

You have heard me on numerous occasions refer to the STF process as a crib sheet for the Executive Committee as they ponder proposals from Marketing, Sales and Product Development entities relative to product development requirements and investments. Now we could distribute the crib sheet after the test as you suggest. I, personally, don't require this crib sheet as the subject matter is my scholarly avocation. But I would suggest, even with one A+ in the group, the grade point average will result in an F.

In reference to the Chart you requested outlining product requirements, I believe that will be the result of the mid-May Industry marketing reviews. It is my understanding the level of product detail outlined in your memo will be available at that time from the Industry Marketing folks.

As we discussed at yesterday's meeting, our investment strategies, including Engineering Development investments, will be determined by the Executive Committee and I assume 'invited friends' after review of the Industry Marketing business plans in mid-May.

Your memo also made reference to Marketing Business Units. I assumed you were referring to Industry Marketing but you then went on to intermix product, Industry and Applications. Ivan, you and I should visit with Ken and get further clarification here so we can organize the sessions relative to his expectations.

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Interoffice Memorandum E.C. 3/19/87 State of the Company History

To: WIN HINDLE*
ANNE KREIDLER
JIM OSTERHOFF
JACK SHIELDS
JOHN SIMS
JACK SMITH

Memo: 5343166031COR95
Date: Thu 16 Apr 1987 2:24 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: STATE OF THE COMPANY MEETING

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At the State of the Company meeting, I'd like to lay out our plans, goals and objectives for Marketing. At this time, I don't want each individual group to restate the wonderful features of our services and the exciting potential glib things that can be done with the big E or the big S.

Instead I'd like the managers (Bob Hughes, Jerry Witmore, etc.) to outline the general categories of business that we do and plan to do. For example, most of our business today is customized special systems usually designed to some degree or completely by the customer. Let's call this the special systems business, and maybe 90 or 95 percent of our business is this.

The other business I'd like to have each one discuss and maybe reject as part of their plans, but definitely say what their plans are, is the standard products business where the customer has a problem and we have a solution which normally can be sold without using the word hardware or software. If there are other categories, they should be presented too.

For the individual marketers I'd like them not to discuss great, glorious successes and individual triumphs over IBM, but instead to systematize their market and present their understanding of the problems and needs in the market and how many of those they have solutions for and how many of those they plan to have solutions for. Some of them, such as OEM's, might be all special systems and others might be all standard products.

At Board of Directors' meetings and Executive Committee meetings, marketers normally like to present their most charming speaker who will present their most glowing successes and discuss their most challenging potential customer. We definitely don't want to do that at the State of the Company meeting. Instead we want to show each listener that we have an organized, systematized, plan for attacking a market and that the new Digital marketing system has gone beyond the time when we were dependent on banks, laboratories and insurance companies who could solve problems with our equipment that we couldn't even state. We will have a questionnaire for each attendee with a page for each presentation. They will make comments on the understanding of the problems of the market, the validity and quality of the proposed solutions and there will be room for suggestions. We

will not have room for passing judgment on the charm of the speaker, the exciting solutions they have already sold and the exciting war stories they have been involved with in fighting for specific customers.

KHO:ld
KO:863
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I n t e r o f f i c e M e m o r a n d u m

To: see "TO" DISTRIBUTION

cc: IVAN POLLACK

Memo: 5343652872COR86
Date: Tue 21 Apr 1987 10:49 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: NEW SOFTWARE FOR EXECUTIVE COMMITTEE AND BOARD OF DIRECTORS

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We are going to have a formal review of the complete business plan for Aquarius and Argonaut first for the Executive Committee and then for the Board of Directors because they are asking for major investments to back up semiconductor supplies. When deciding on these major amounts of money, we will be forced to look at the overall business plan to see how the two plans fit together and to make sure there are no loop holes in the plans. ///

Our software plans don't have any single huge investments, but there is continuing pressure to add one more semi-major program to our semiconductor work. None of these are big enough to initiate an overall software presentation, but we have completely changed our approach to software over the last year and a half.

I think we should present to the Executive Committee and then the Board of Directors a complete review and complete budget of all our software projects and particularly make note of what changes have been made in the last year and a half or so. The Executive Committee has been involved a little bit with the TP and redundant computing, the data base applications with Cullinet, 32-bit PC, window, PC All-in-1 and hopefully a myriad of applications.

It would be good to organize all our software projects and all of those that have been requested but not yet agreed upon so the Executive Committee can have an overall picture of the major software programs of the company and maybe they'll understand all the complaining about software being so slow at adopting new ideas.

The Executive Committee should spend a full one or two days of Woods reviewing all the new business the Corporation is planning to go into. The list of businesses we're planning to go into is quite different from what it was two years ago and we've never made a formal review of them. The presentation of our software plan might be a good introduction to a full Woods day meeting on company businesses.

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KO:874
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Interoffice Memorandum

To: see "TO" DISTRIBUTION

cc: IVAN POLLACK
RON SMART

Memo: 5342557706COR24
Date: Fri 10 Apr 1987 12:10 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: MORE NOTES ON THE MAY WOODS MEETING

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Bill Strecker is arguing that we shouldn't make a stand-alone VAX PC until we have proved that we can make a useful network VAX. Bill is not necessarily right in his conclusion, but he is very definitely right in saying that we have to have a good 32-bit PC that is priced right, is packaged right and has the necessary software for a networked PC.

For our May Woods, let's break down our presentation into two pieces, one for the networked PC and the other for the stand-alone PC. Let's define the hardware and cost needs, the marketing and distribution questions and the most important one, what are the software and applications for stand-alone and what are they for a networked PC. If we do both, we have to plan, schedule, budget and staff both. We can't fail on the networked PC and we shouldn't start the stand-alone PC unless we are sure we will win with it. If we don't make a stand-alone VAX PC, do we then have to make a PC All-in-1 version to replace the 32-bit IBM compatible PC's?

KHO:ld
KO:842
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I n t e r o f f i c e M e m o r a n d u m

To: see "TO" DISTRIBUTION

cc: IVAN POLLACK
RON SMART

Memo: 5342366593COR04
Date: Wed 8 Apr 1987 2:37 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: DESK TOP WOODS

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I'd like to commandeer both WOODS meetings in May for desk top strategy. The first two WOODS day meetings, I'd like to concentrate on software for our 32-bit PC. I'd like the people involved, both Jeff and Kurt, to identify all the needs in order to win the 32-bit PC business, to document the differences and opinions, and to mail these to the attendees before the WOODS meeting. I'd like to spend two full days going over all the software questions to be sure we have a complete and a consistent plan.

Let's be sure we settle all the issues on software for our VAX PC. Can we leave out large portions of VMS and not hurt the PC user? Can we avoid much of the support and updating that goes along with VMS, if we left out many of the complicated parts, such as clustering? How does the cost of having a special VMS for PCs compare with the cost of having extra memory on each PC?

The last two WOODS day meetings in May, I'd like to spend on the business plans for PC's, the business plans for terminals, and the business plans for workstations. I'd like to review the alternate ways of marketing, selling, distributing, and accounting for these businesses. I'm sure that we can set up to sell our new terminals for $300 each. I'd like to know if we can sell and distribute our PC's with equally low cost.

It seems clear that IBM did not introduce their new PC's to beat the clones. The clones will probably have equal products before IBM gets into production. It does seem, however, that IBM laid out this whole line of new machines to solve a departmental or commercial problem and, therefore, should be taken very seriously by us.

I'd like each month to have a session in which one of Jeff's people tells us how we see the IBM strategy unfolding. With their cheap terminal and their line of PC's, are they setting about to network large amounts of terminals in a very efficient competitive way? Let's have the first session at one of the April WOODS meetings. It probably only needs to be an hour and then we'll update it each month for awhile.

KHO:ep
KO.836
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Interoffice Memorandum

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Memo: 5342249609COR11
Date: Tue 7 Apr 1987 9:51 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: MANUFACTURING IN CHINA

When you meet the very top people responsible for manufacturing in China and when you meet the bureaucrats who make it run, you find they are very competent. They express their goals clearly, and they are normally very well educated. We would hire any one of them.

However, there are problems in manufacturing in China. For example, I found several manufacturing organizations that were working very hard and were doing basically a good job, but the frustration level was high, and sometimes it was fortunate that the frustration levels did not overcome their drive and spirit to get things done. It seems that in this type of political set-up, the very top executive committee believes they are successful, believes that they run a very efficient organization, and believes that they make all the decisions, and that all the decisions are therefore right.

However, within the organization, it turns out that there are innumerable orders, instructions, edicts, and standards delivered by the huge organization of bureaucrats. Now, this in itself would be fine if when the standards and edicts are unwise there was a mechanism set up to challenge them; however, the executive committee believes that the problem should be solved by the people who have the problem, and the people who place the edicts.

However, as in all organizations where the bureaucrats have no responsibility for production, no measurements of the efficiency or inefficiency they generate, and they have only one fear, and that is that there will never be a failure. Production may not get going for months and years after it should have gotten going, production might be level and the cost may be high and not competitive. But the bureaucrats who make all of the infinite number of decisions, have only one motivation. That there never be a failure. If the unit, after it is boxed, ever breaks because the packaging was not good enough, there is no concern for the cost of the packaging in shipping volume, in dollars and in difficulty of assembling.

For example, in this one organization I visited, the company made power supplies and they made memories. The unit cost of the power supplies was very, very high, and the semiconductor components were very susceptible to static discharge and the edict came down that every unit would be wrapped in 3M anti-static plastic bags, with a unit cost of $3.00. This probably was not unwise, although aluminum foil might have done the same job for a lot less. The bureaucrats who have no responsibility for success arbitrarily applied this to power

supplies, which have a unit cost of $25 or $30, and a $3.00 plastic bag, not counting shipping costs, is a big enough percentage that it would take tens or hundreds of thousands of dollars of engineering to save that much cost in the product.

There is no mechanism to challenge this decision, even though everyone believes that anti-static bags on power supplies is nonsense. The bureaucrats made the rule which was valid in one case and absolutely applied it to every case. The executive committee, of course, is way above trivial things like $3.00, but yet they are happy to spend tens or hundreds of thousands of dollars to cut that much cost from the quality or the component costs or the features in a power supply.

In addition, the bureaucrats have no authority for power supplies bought outside, so this one factory is only about 50% utilized because their prices are high. Their competitors on the outside in the free market, don't have the help from bureaucrats, and for $3.00 this company, run by the bureaucrats, loses the business.

It also turns out that within this ministry, make-buy decisions are made without formality and without documentation. When parts of the ministry that do their own manufacturing do not get business, there is no record as to why. It might be that someone heard a rumor that another organization not under their control, has lower prices but better quality and faster delivery, and he can make the decision without documenting these reasons from which he made the decision. Even though there is enormous red tape in the organization and an enormous amount of paper, an enormous amount of record keeping, the classic decision that Western companies have spent so much time writing about the last hundred years is left to the whim of the single individual somewhere in the organization without anyone knowing who made the decision, without him having to document it. The frustration this causes within the organization is enormous, but they have no recourse because of the way this kind of organization is set up. The ministers are above trivia such as make-buy decisions, the bureaucrats are interested only in not making mistakes, and no one wants to document why they made decisions, because there is danger if they have to, even though their reasons may be good, or sometimes they may be poor and should be challenged.

Being a Westerner at a high level and above all of this trivial decision making and decisions that are worth only $3.00 a unit, I of course am able to lecture how we do things well. We, of course, make sure that the purchase decision between the inside suppliers and outside suppliers is done on equal terms. There is component approvals, and both the inside and outside organizations have to use the same approved components. If there are standards of finish on the sheet metal, if there are standards on the circuit boards, or if there are standards with the wrapping, we, of course, apply equally to both sides.

I also explained, when it came to power supplies, I know, without looking because I know Digital makes no mistakes, we insist that when we compare prices on power supplies we assure that they are done on a very equal basis. If one group quotes price per watt, we are sure that it has the same specifications, the same safety devices, and the same quality throughout as another quote used to

justify purchasing somewhere else.

I also explained that we are unusually free of red tape, that we have very little paperwork, and very little justification for trivia, but when it comes to make-buy decisions, I am sure that we treat it with the formality with which this decision deserves. We do not ask for simple things such as three bids to justify purchase because that does not mean that everyone is treated equally, and also it may mean that wrong decisions are made even though rules are followed. I said I am sure, although I have never looked, that make-buy decisions are made with wisdom and for efficiency, and the reasons for these decisions are documented even though they are not as simple minded as the lowest of three bids. I also said that if the decision is made to do things in-house because there are unused people and facilities, then this reason is included and is normally good enough though, and it may not follow the unthinking rules of a bureaucracy.

I also assured them that because any organization I run has to be perfect and would not do dumb things even though I don't have to even look and am above looking at details and would never check on my people, I am sure that if we find outside suppliers can do things cheaper than we can, and if this means skipping the standards, changing or bypassing standards that we used to have, I am sure our organization does not maintain standards that have turned out to be unnecessary as we gained experience with outside suppliers.

I assured them that in an efficient, profit-oriented, goal oriented organization like ours, we have a clear mechanism to challenge standards and bureaucratic decisions. No way would there ever be in any organization I run the situation where a bureaucrat could impose a rule on a different organization without a clear way of challenging this through the organizational mechanism. It is inconceivable that the senior people responsible for a manufacturing organization, would not take interest in the things that are frustrating their people as a highest priority and take care of this for them. In any organization that I run, I am absolutely assured that frustrations of groups is one of the highest priorities of each manager and they never would give an answer that you have to follow the rules, even if they are stupid because we all have to live with the stupidities of the other part of the organization.

When in Asia, I have been introduced as an entrepreneur and I often request that I not be called an entrepreneur because in the United States, the word entrepreneur has come to mean a person who has to answer to no one, but who can arbitrarily force his will and his arbitrary decisions on others. The classic definition of an entrepreneur is one who takes complete responsibility for what he does, and therefore, is always driving for efficiency, for enthusiasm, for productivity and lack of frustration. That is no longer the norm in the United States and so, I do not want to be called an entrepreneur. Of course, I assure people that no one at Digital would ever make arbitrary rules without the responsibility for the results of those decisions.

In any organization that I run, I am sure that if a party is frustrated by decisions imposed on them by someone else in the organization, and if it is impossible for the group on whom it is imposed to work it out directly, his immediate supervisor would take over the frustration and have it solved. If that was not possible, it would go up to the next level, and that we would take frustration as being one of the first responsibilities of any manager.

It is only grossly bureaucratic organizations that allow frustration to continue without raising it to the top and no way would we ever tolerate a manager who agreed with the frustration and said, yes, I've always had trouble with that group, too, because they all know that frustrations have to be brought up high enough to be satisfied, even if they are brought up to the very top of the corporation. Because I hear of none of these, I am sure there are no frustrations in my organization. How people obviously don't always get decisions made the way they plan to make them isn't frustration. Frustration is not having questions raised at high enough a level to get them answered.

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Interoffice Memorandum

To: see "TO" DISTRIBUTION

Memo: 5342246517COR95
Date: Tue 7 Apr 1987 8:59 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: MEASURE OF SUCCESS

We have now evolved to measuring success by the amount of inventory we hold. This is, of course, only a narrow measurement and there is always a price you pay for it. Please develop a measurement of flexibility so that we can always look at inventory and see the cost and flexibility.

We, of course, never want to have inventory which does not contribute to flexibility which is, of course, the problem with unbalanced inventory, and we never want inventory which gives us flexibility beyond which we want to plan. However, in our business, flexibility is important and we can't get carried away with one single, simple measurement and give up flexibility.

Early in our history, we had inventory problems when we only made two or three dozen variations of modules. We paid to have an MIT professor help us plan this, and we came to the interesting conclusion after extensive model building, that inventory can be used to gain flexibility, and to smooth production and that there is a level of inventory which is very economical because it contributes so much to the efficiency and flexibility of the organization. It is too simple to say inventory is the only measure, when obviously we want the optimization of money tied up and flexibility and efficiency.

When we cut down inventory and sacrifice flexibility and efficiency so our numbers would look good, and at the same time, we have money invested at some low rate of return, it is obvious that we are willing to sacrifice efficiency and flexibility, just so that we would look good, not for the actual efficient use of our capital.

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Interoffice Memorandum

To: see "TO" DISTRIBUTION

Memo: 5341459414COR74
Date: Mon 30 Mar 1987 11:33 AM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: HOW TO PICK JOINT VENTURES

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We should be careful picking joint ventures because we can't keep too many going at one time. When we do, we should be careful to be sure that each one meets the following conditions:

1. Someone on their side should be named as being responsible for its success. We should not be responsible for a joint venture when they control most of the red tape and most of the assets.

2. It should be clear that this person would take care of all the red tape, all local problems, and all problems with their country and their organization.

3. It should be very clear that he has both the responsibility and the authority needed for success.

4. We should supply the know-how and sometimes funding but they have to supply all the things that make the product a success.

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Interoffice Memorandum

To: see "TO" DISTRIBUTION

Memo: 5340169564COR90
Date: Tue 17 Mar 1987 2:23 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

cc: GEORGE CHAMBERLAIN
IVAN POLLACK

Subject: MARKETING DISCUSSION AT WEDNESDAY'S WOODS MEETING

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I'd like to spend much of Wednesday morning discussing marketing. I found with traveling that the sales people have very little product information, very little strategy information and very little competitive information from marketing. This was partly because the sales organization originally wanted to prove that they could sell without any help from marketing and partly because marketing is kind of an orphan within the company. It is something we do when we run out of things to do in engineering, but we're lacking a systematic approach to it.

For this meeting, please think of how we would organize two check lists that we can use to help marketing people to get organized, review their plans and then to check on their plans afterward. One is what things have to be included in the plan for product marketing, department marketing, industry marketing competitive product information and for strategy information.

Then prepare a second check list for us that includes all the above items and and any others you can think of, then we can make sure we organize to get all of these things covered.

I believe our stock is going down today because IBM is claiming great success with the 9370 and we don't think it is right or necessary to answer them.

We had several long engineering meetings on the 9370. We decided it wasn't a particularly powerful competitor and we analyzed all its weaknesses and decided then that we'd done our job and we never told anybody. This was very useful information for the field. No one ever told the field that broadband was not the highest priority marketing goal of the corporation. No one has ever told the field of our relationship with Cray. No one has ever analyzed the very, very successful NCR tower project and told our field operation what it's strengths and weaknesses are and what our competitive message is.

We are exceedingly successful in making up special systems. We have the parts and the people who can make elaborate special systems that no one else can touch. We've ended up doing this because our people have no information about simple products so we leave that for the less competent competition.

I have asked George Chamberlain to analyze the poorest performing

25 or 50 percent of the products and see if there has been any marketing done for these. It is my guess that these fail because we never told anything. This includes things like DECtalk, CD-ROM, IVIS, etc.

We're also reluctant to tell the field what the advantages of one product are over another. We only tell the advantages of each product and then the salesman has to make up what the differences are between products.

Part of the marketing plan should be a review of our messages. We go through the almost religious ritual of an announcement, but then we never check to see if the message got across. I think that most of the messages we presented this last year have not gotten across to the field or to the customers. One of the saddest ones is the local area clustered message. We gave this to reporters who weren't listening and we never gave it to our sales people.

I believe most marketing effort and money is spent on house organs. These contain largely reproductions of the same material that every other house organ produces should be done only once, and they contain stories of successful customers that do not include the information which is sales people and marketers really need to sell products.

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Interoffice Memorandum

To: see "TO" DISTRIBUTION

cc: PAT CATALDO
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Memo: 5339076478COR44
Date: Fri 6 Mar 1987 4:16 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: MARKETING WOODS MEETINGS

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I think we should cancel all product, R & D and future technology Woods meetings and concentrate all Woods meetings this spring and summer on marketing. We will survive without TP, but we will not survive without marketing.

People in the field see no strategy and no clear message for corporate networking for the factory, laboratory, engineering, etc.

What should I say? What should our salesmen say? What should we teach when a customer wants to pay to be educated about our strategy? Do we have our strategy written so that everyone understands it well enough and tells each customer the same thing?

The 'one company, one strategy, one message' plays great in Japan. They love one protocol, one architecture, one software system and one network, but no one can tell them what it means.

We have good components. People look forward to more components but they don't expect the strategy from Maynard.

No one seems to expect Ed Services to be part of the strategy. Like the sales department, they have to make up their own.

Let's make Ed Services a key part of all our marketing strategies and Woods meetings. The job is not done until Ed Services has the strategy in their plans.

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Memo: 5338949573COR70
Date: Thu 5 Mar 1987 8:49 AM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: CORPORATE STRATEGY

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We are doing very well with the first level Corporate strategy for the whole company, but it is mainly limited to architecture and not to those things which the customer sees. We have no standard or stated policy on quality of design, looks ergonomics, serviceability, ease of use and those things that make the customer want to buy our products. We have much disagreement, much back biting and much difference of opinion on the importance of these standards and what they mean.

We often do not realize that we are a big company, that we do not have to follow everybody, and that even those companies bigger than us do have to follow. In architecture we know we will only survive if we set goals and standards. In the area of quality and following other companies, we allow freedom or anarchy.

We do not have a clear policy on Ethernet, PBX, broadband, ISDN, twisted pair, single coax, 4 coax, and many other items.

Because we have no policy on quickly improving our products and making them better and cheaper, our engineers tend to go off and follow the things other people are selling. It not only weakens our Corporate strategy but confuses our sales people, dilutes the use of our resources and potential to grow, and means that our products take forever to get improved, if at all.

We are afraid to tell the world about things that are black and white such as ISDN, PBX, MAP, etc., because we may offend someone. The result is most of our own engineers do not understand the weakness of those things which are alternatives to our strategy. None of our sales people understand, and the world does not understand what we are offering.

This Spring, I think we should put a major effort into clarifying our strategy in those levels above architecture and make sure we use all of our resources to sell our corporate strategy and save all the energy we use in arguing over the pennies it costs for quality.

KO:719
(DICTATED 3/5/87 FROM JAPAN)

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Interoffice Memorandum

To: see "TO" DISTRIBUTION

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Memo: 5338659947COR85
Date: Mon 2 Mar 1987 11:41 AM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: COMMENTS ON JAPAN

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Things look good in Japan. People are enthusiastic and unusually competent. However, I see a number of things that worry me about our engineering and marketing. Therefore, I would like a formal review of our marketing plans, our sales plans, training emphasis, and R&D investments relative to our corporate strategy. I see little connection between the corporate strategy and marketing as seen from Japan.

They are setting up a major part of the ACT to sell broadband. This is apparently a new marketing push from B.J.'s group, and it will take a big part of the ACT investment. Why in the world are we marketing broadband which is the enemy? It is the strangest logic to say we will invest, document, market, sell, train and teach broadband as a way to somehow sneak people into real Ethernet in which we invest little and do no marketing.

There is no clear factory strategy here that they can see from the States except to push MAP, and to train, teach, document, and invest in it, with the hopes that miraculously we will end up selling Ethernet, even though we invest little in Ethernet.

I walked through a computer room and was very embarrassed. I later walked through a large discount store, in fact a whole street of discount stores that sell Japanese home electronics, and every one was packaged better than our computers.

Why in the world do we have to put crooked paper labels all over the back of our equipment? None of the consumer equipment has it. Why do they have to be crooked, and why do they have to be so cheap?

The consumer products have better cabling than our large size computer and disk cabinets.

The Star coupler box was shorter than the HSC box and looked like it came from a different manufacturer.

Every disk looked like it was made by a different manufacturer.

Some people are saying that we invest too much in packaging, looks are not important, the feel of quality and the look of elegance is not important, just the price and time to market. However, when you are in the field, it sure feels like the

reputation of quality, the image of quality, and elegance of good design is very, very important.

We have an ugly hodgepodge of 15 pin connectors, 25 pin connectors with 25 pin cables all over the place. If I were a Japanese company, I would wipe Digital out of the profitable part of the Ethernet business by quickly making a nice looking set of products that look like they were made by one company, and turn the engineering that Digital uses in making broadband and MAP products into making low cost, high production, good looking, modern, efficient Ethernet components.

KO:710
(DICTATED FROM JAPAN AT 12:20 A.M., MARCH 3, BUT NOT READ)

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To: see "TO" DISTRIBUTION

Memo: 5337277275COR13
Date: Mon 16 Feb 1987 4:30 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: CORPORATE MESSAGE

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We've done well with our development of one message and one strategy for the Company. However, there are areas in which we still have been reluctant to limit ourselves to specified and documented strategies and messages.

Many of our market groups are reluctant to specify a strategy because they find it's easier to ask the customer what he wants and then try to adapt a system to his needs. These people are approximately as successful as a customized automobile shop, and there's a little localized success. But only a company who wants to have a simple strategy which is sold to everybody will ever have a car name plate which is well known such as Ford or Chevrolet.

We also suffer because the field has set a challenge for themselves to prove that they can sell without strategies, messages, and help from the marketers. They've really done quite well, but this approach does not lend itself to having one strategy and one message.

In the field, we are still having people who make up their messages, but they are not correct and don't fit in with the products we offer or the strategies we claim. We still make presentations to the customer which show no inclination toward a corporate message. If we're going to succeed on the path on which we've started where we have a corporate message and we all work behind it, we better go after those areas in which we still have no message.

We still have people in the field who have never heard of the possibility that we would encourage Ethernet in the factory. They think the corporate message on MAP is the answer to factory, and they will quote all the reasons Ethernet won't work.

We have people in the factory who will offer a lot of alternatives to doing Office because they don't have a corporate standard approach to Office which is so simple it catches people's imagination.

We still don't have a simple corporate strategy and message for the laboratory. We're afraid that if we don't keep it vague we may loose some business for people who wouldn't be happy with the corporate standard message.

I suggest that we can no longer afford to have people in the field make up strategies and messages, and we have to have a written message and strategy for all departments.

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Interoffice Memorandum

To: see "TO" DISTRIBUTION

Memo: 5337673271COR20
Date: Fri 20 Feb 1987 3:24 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

cc: DOM LACAVA
JACK SMITH
BILL STRECKER

Subject: MARCH ANNOUNCEMENT -- "CIM FOR THE FACTORY"

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Our March factory announcement has to be a grabber. It has to be simple, it has to be one that people can understand, and it has to be consistent with my statements on MAP.

First of all, we should have an acronym which is ours that sets us apart from the rest of the world. I like "Standard Industrial Network" as a name, but the acronym, even though catchy has some negative implications, and therefore, we should find a better one.

Then I think we should simplify our message, get it across so that all of our people, all the press people, all those at the announcement, and all those that read about the announcement, will understand just what we offer.

For example, we might say:

"Digital announces new computers for Standard Industrial Network." Today Digital introduced and demonstrated two new computers for use on the factory floor that are used as cell controllers for factories networked with Digital's MAP or Digital's SIN network. These computers are ruggedized and designed specifically to tolerate the severe environment of a factory, and to make it easier to integrate factories with computers.

"Digital's standard industrial network consists of two components, which are Ethernet and Baseway controllers or team computers. Ethernet has been the industry standard for open networks since the late 70's. It is now widely used in all parts of industrial organizations in the factory, the laboratory, the engineering departments, and the office. It is elegantly simple, and yet because of it's modular nature, it is possible to build the very complex network necessary to integrate a whole organization.

"When a whole organization is integrated, it is important that the network never fail. In the SIN network, robots, machine tools, and controllers are isolated from the main network by MicroVAX Baseway cell controllers, so that any component that is not up to standard or that fails, will not ruin the network.

"Digital believes that it is very important that the same network

be used throughout the organization, including the factory, so that parts of an organization that have to work together on projects such as a new product introduction that incorporate many parts of an organization, can easily work together as a team and share data.

"The new Baseway cell controllers shown today, are based on the Baseway computers first built for General Motors in 1980, and which should have been sold to hundreds of factories since then. These new Baseway computers are easily installed, expanded, and replaced. They tolerate the environment found in most factories, and they fit into standard factory enclosures.

"The new Baseway cell controller are used with the cells of robots and machine tools. They are sometimes managed by people, and sometimes managed solely by the cell controller and the network.

"There are two models available. One which has a hard disk, and another one which is completely diskless from which the software is downloaded through the network, and the hard disk functions are satisfied through the network so that no disk is needed in the severe environment of a factory."

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Interoffice Memorandum

To: see "TO" DISTRIBUTION

cc: IVAN POLLACK

Memo: 5337468386COR39
Date: Wed 18 Feb 1987 2:02 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: ENTREPRENEURIAL ACTIVITIES IN AN ORGANIZATION

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I have been trying to influence my friends at other companies to allow more entrepreneurial activities within their organizations. They normally don't see the need for this because they have all the staff and all the controls anyone could ask for, and they feel that they themselves run each of the activities.

However, when projects don't work out as planned, they do not have the time, the energy, the knowledge or the skills to make sure the plans do recover and that they are successful.

We might be worse off than they are because we think we are entrepreneurial. But let's be sure that we do always have someone in charge that has a plan and a program, that the plan is measured, that we know and they know if the plan is in trouble, and that they feel this overwhelming obligation to make sure they get the results even though at the first pass they did not.

Most companies spend most of each Board meeting going over the sales results and financial results in great detail. I often find this boring, repetitive and not very useful. However, one thing is for sure, the Board does walk away with a feeling for which projects or which products are not selling well and how their results compared with the projections. This puts enormous pressure on the management to straighten those out. They may not have entrepreneurial groups assigned to each one that would allow them to take care of them, but they sure do feel the strong obligation and often succeed.

I am afraid we have the entrepreneurial groups but we never, at the Executive Committee meetings or the Board of Directors' meetings, review the results. Therefore we have developed the attitude that the announcement of a new marketing plan or a new product is the end goal, and the so-called entrepreneur feels little obligation to start over again, redo things, or make the thing a success from an entrepreneurial sense because we have never gotten the entrepreneurial message across to him.

"IN DIGITAL THE ANNOUNCEMENT IS A GOAL; THE RESULTS ARE NEVER LOOKED AT".

I'd like to summarize once every six months for the Board of Directors (and Executive Committee) the results of each of our product announcements, and to the Executive Committee alone,

those products which we canceled or postponed and never announced such as IVIS.

At an Executive Committee early in March, I'd like to have George Chamberlain and Jack Smith review all the products and programs that have been announced during calendar 1986 in simple, concise form and with the name of the entrepreneur in charge of each one. Then I'd like the Executive Committee to make recommendations on how we will present this at the Board meeting on the 16th of March.

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Memo: 5326765364COR96
Date: Mon 3 Nov 1986 1:11 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: ORDERING SYSTEMS

Back in the 70's, we lost control of the VAX and ended up with an exceedingly complex ordering system with many, many line items, and very difficult configuration planning. With the 8600, we simplified it so that they were relatively easy to order and deliver. We have lost it again with the Nautilus series machines, and now we have systems with a hundred line items.

I would like Jack and Bill to come to the Executive Committee to lay out the plans for simplifying the orders. I know some people argue that the advantage of doing business with Digital is that everything is special and you can order any combination of any thing. However, that almost ruined our reputation in years past, because of the impossibility of the customer ordering everything correctly, and we for delivering everything correctly.

It appears that our growth might be limited in the immediate future by our ability to deliver on all of these complicated orders. I would rather loose a few orders because we didn't offer every possibility on every order, than to loose some orders because we couldn't keep things straight or couldn't get all the parts together.

Please propose all possible alternatives to simplify the product lines. Some of them may be bolder than we want to approve, but let's propose them.

For example, let's have only two cabinets. For the big systems, let's have the standard cabinet, and for the small systems, let's have only 60" cabinets instead of 40" and 60" cabinets. When a customer buys a cabinet, let's include all the line items that he is going to need, even though sometimes he doesn't need every single one, so it only takes one order number.

If we were going to keep in inventory the six standard systems with one order number for each, how much of the business would this take care of?

Could we make the ordering so simple that people could make the order in a matter of minutes, and not make any mistakes?

KHO:mc
KO:403
DICTATED ON 3 NOVEMBER, BUT NOT READ

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Interoffice Memorandum

E.C. History

To: see "TO" DISTRIBUTION

Memo: 5326456370COR16
Date: Fri 31 Oct 1986 10:52 AM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: ORGANIZATIONAL ARCHITECTURE, PROTOCOL, AND NETWORKING

****
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Here is a first, rough pass at a document on architecture and protocol for organization. Please note things that are left off and make suggestions for a more thorough document. I would also appreciate it if you could summarize the points with simple one line statements.

30-Oct-1986 08:44

DRAFT

TITLE: ORGANIZATIONAL ARCHITECTURE, PROTOCOL, AND NETWORKING

COMMENTS:

In an organization, everyone should have an understanding of organizational architecture and organizational protocol. When an organization is set up with a formal architecture and when there's an understanding of what the formal protocol is, the organization then has freedom to make exceptions for efficiency or expediency.

Exceptions can be made, and indeed have to be made, because in an organization so much of the useful work is done informally by the people involved, especially in the modern world of electronic networking. However, the foundation of the company has to be based on formal organizational architecture and formal protocol, or frustration and chaos will result.

In the same sense, every man should know traditional manners, and he should practice them even on his wife at dinner, entering and leaving the car or airplane. No manners is not freedom. Freedom is having manners and then using them when appropriate.

ARCHITECTURE:

Architecture is the way that something is built, whether it be a building, a computer, a software system, or an organization.

Good architecture is simple so that the user immediately has a feeling of how things are put together, so that he understands how to use the building, the computer, the software, or the organization. He gets confidence that it was well thought out by competent people, and he has a feeling he can find his way through. Good architecture allows the addition of features that make the system elegant because of the adornment, features, and excitement that is added on top of the simplicity.

PROTOCOL:

Protocol is a code that prescribes adherence to a correct etiquette and precedence and procedure in the interaction between people and organizations. For example, you don't send a young junior person to work out his problems with an old cranky vice-president.

NETWORKING:

Networking is the exchange of information or services or workloads between individuals or organizations. Sometimes with computers and wire, and sometimes only with people.

Networking appears to be in conflict with the traditional organizational architecture and protocol. Traditionally, communications and decision making and conflict resolution in organizations was accomplished at the appropriate peer level between the two organizations. Generals spoke to generals, colonels spoke to colonels, captains spoke to captains, and lieutenants spoke to lieutenants.

This appears to be in conflict with our ideas of networking, but it's not, and it's important that it be understood. Everyone knows that the real resolution of problems and the real communications is done between sergeants. The rules of protocol and architecture do not say that all information and all problem resolution has to be done at the officer level and between peers, but what it does say is that any problem not resolved or any communications not accomplished at one level, is immediately passed up to the next level for resolution. There is no problem too small for the general or the top man to solve if it does not get resolved in the lower levels. Every military officer or every manager in business has the responsibility for any problem or any lack of communication not being taken care of by networking in his organization.

FREEDOM AND CREATIVITY:

We, like the American military, would like to give each of the individual workers and managers the freedom to use his own expertise and his own knowledge and judgment and enthusiasm to solve problems. Sometimes this is misunderstood to mean that everyone should have complete freedom to make all decisions on every subject. Normally, freedom to create means that most things are done for us so that we can concentrate on the real problem. For example, every military organization who said they believed in freedom to allow creativity, therefore, every soldier could take part in deciding what uniform that army would wear, and everyone would have a say as to what the menu will be for the

next day. Of course, the army would come to a complete halt, nothing would get done, and it would be a full time job for the whole army to come to agreement on the uniform and each days menu. Freedom comes by having unimportant things taken care of by others. In the army, the menu is hopefully taken care of by one expert, and uniforms are decided once and for all by a committee of the most senior people in the army, and then everyone follows the rules.

In business, we sometimes fall into stupid concepts. We sometimes believe that for marketers to be creative, they have to make decisions on which color black ink, what size paper the literature or memos will be printed. The level of frustration and delays and the money and time invested in working for a unanimous agreement on one color black ink and one size paper can destroy productivity for years. Protocol says that questions like this should be taken care of by the highest level of the corporation because it is so important. They should ask for inputs on which color black ink and which size paper, and which kind of binding should be used, and then, like the army deciding on uniforms, they should make a decision that will last approximately forever and allow the marketers to spend their creativity on understanding the product rather than picking black ink.

It is also clear that every group shouldn't design their own building. Designing a building can wipe out a group for two years, and normally when the building is done, that group or at least that manager, won't be in the building. They have a commitment to do the job for which they were hired, and the building is relatively unimportant, and it should be done by professionals who can use the same design for everyone.

It is also clear that the person or group responsible for building building, cannot be held responsible for every wish and every whim and every change made by the group who is going to use the building. This person, who is usually junior to the vice president who is getting the building, is often destroyed by the problems of following the orders of someone much senior to him, and the obligation to do what's wise, economical, and consistent. Protocol says that the user could document all of his requests, and if these are approved, that's what he will get. He also can request changes, but no way should a vice president use his position to pressure someone junior to him to make continuous changes or added features which are blatantly unwise. Organizational architecture and protocol are normal common sense. Those in the middle of it, get caught up in the need to get something done, and don't use common sense. The reason we have an Executive Committee and a Board of Directors is to make sure that projects are proposed and that they are proposed rationally and business like and that they follow obvious protocol.

PROJECT CHANGES:

Assume, for example, that we have a group that has 20 software projects. At the beginning of the year, they are budgeted, staffed, scheduled, and a review system is set up to make sure they get the job done. During the year, new ideas come on new businesses that the company would like to get into, and there are

things that people forgot to put in their original requests. For some reason, the natural tendency is for each person who needs new software, many of which are major expenses and huge projects, to go to the manager of the software group and try to talk him into it. He already has 20 projects staffed and budgeted, and before the year is half over, there are 10 groups, each of whom is absolutely frustrated on the verge of quitting, because they haven't been able to talk this manager into adding their project. Each person feels that his project on top of 20 is such a small percentage. Surely he should see the wisdom and the need for the good of the company, of doing his project, but every day there is another one and they total about 10.

The frustration in a situation like this is so debilitating that there must be something wrong, and of course, there is. The original budget, plan schedule for this software group was approved by the highest level of the corporation. Common sense says that any change to it, anything that was forgotten, any new business that we decide to go into should be proposed to that same organization with a plan for staffing, for financing, and for review, and a promise of return to the corporation, and then a change made to the plan of that group. Protocol says that changes to plans or addition of new businesses should always be brought to the Executive Committee or the Board of Directors.

Sometimes networking leads to such informality that we don't show due respect for each other or for the organization.

If one of our kids brings home a friend for dinner without notice, we always make do and never know the difference. But if each of the kids each brings two people without notice, we'll take everybody out to Pizza Hut and have a family meeting and say that from now on, there is a certain protocol in bringing people home for dinner.

EXECUTIVE COMMITTEE AND BOARD OF DIRECTORS:

The Executive Committee and Board of Directors play an important part in maintaining order and a business like, unfrustrating atmosphere. Normally, there is a tendency for managers to feel that they will tie the Executive Committee and the Board of Directors up with giving them the sales results for the last period, and that they tire before we get around to anything of substance. The senior committee of the company, and the Board of Directors, can make a very significant contribution if they are used well.

Most important of all, the Board of Directors give us a reason to prepare our plans in a logical, formal, concise, understandable way. The reason we hate to do this, is we would like to have the freedom to change our mind all the time without having to write it down. We would like to have jobs added on without changing budgets. We would like not to admit we made mistakes, and we would like to have access to all the resources of the company without the formality involved in being fair to every other part of the company. However, it is this formality that is forced on an organization when they present plans to a senior committee. It forces obvious business like communication and understanding between parts of the company, and therefore, eliminates the

absolute, the devastating frustration and misunderstanding that comes about when one tries to do complex projects with informal communication.

There is a normal tendency to want to withhold information because it would limit our freedom. But any tendency towards secrecy probably means that we are trying to impose our wishes on another part of the organization without the clear planning and documentation necessary to do it without misunderstanding. Sometimes we fear that our ideas will not make sense if we have to document them.

WHAT A BOARD OR AN EXECUTIVE COMMITTEE SHOULD HAVE:

There are a lot of ways of hiding information from the senior committees of the company. One way is to include all the data in vast printouts, and this of course is as useful as no data. The data should be analyzed and processed in a way that the Board or Executive Committee can have a complete picture of each business the company is in, how much is being invested in each piece, and what return is expected, how well we have done in the past, the immediate time interval, and what we promise in the next time interval. All changes should be presented. Those changes that are small and insignificant are either brought up in summary or are passed over very quickly. Those of import are gone over in detail.

Now it's clear that the usefulness of this procedure is in the preparation. If a plan is worked out in such detail and with such care that it is readily understood by a Board, one can be assured that it is understood by the preparer, and by the rest of the organization and usually it makes sense.

It's amazing how when Boards are allowed into the key questions of a corporation, how their intuition and sense can contribute. They can tell when people are ill prepared, when they are going into things which don't make sense, and they are very suspicious of those officers who hide things or cannot explain what they are doing.

A Board or a senior committee often can take a much broader view than someone in the middle of the fray. Someone might propose what he thinks is a bold proposal to standardize a networking within the United States. He might feel that that is an enormous task and in itself more challenge than he could be asked to take on. However, the Board wouldn't be sensitive to that at all, and would just insist on the corporation standardizing on networking for the whole world, and just insist that the corporation do it that way.

It may seem logical to someone responsible for literature and manuals, that he has to have consensus or unanimity among everyone involved in marketing in the corporation. It is clear that he will never get unanimity and he will spend the rest of his life in frustration and inefficiency. It's obvious that if he ever presented that idea to the Board of Directors, they would throw him out on his ear. It's obvious that if he wanted to solve the problem, he would just tell everyone he is preparing to go to the Board of Directors, and that he would present a plan

and list those people who would like to be exceptions to the plan. It is clear that no one would want to be exceptions, because they have to have a different color black ink or a different shape paper, and that immediately before the thing was presented, there would be unanimity. When people don't want to bring plans for their part of the organization, one would almost conclude they enjoy the frustration and inefficiency that comes about in trying to work things out in a stupid way.

The Board should ask the President, and the President should ask the Vice Presidents, and the Vice Presidents should ask for all of their managers, and all the way down to the bottom, that everyone who manages or supervises be sure that each one of his people has a goal, a plan, a budget, and a measurement system. It might be that there are a number of people who don't have these for various reasons, but they should be clearly listed. Without this simple bit of protocol, managers very easily fall into the trap of feeling that they have the title of managing someone, but they have no responsibility, or they have the title, but someone else is really running the project. By this system, the corporation should immediately be able to tell which people do not have goals, budgets, and measurements.

KHO:mc
KO:390

ADD:

When the Executive Committee approves a plan for a business unit, common sense protocol says that the Executive Committee is the only Committee that can turn off that plan. It seems obvious that the Engineering Budget Committee should not be able to abolish that business unit simply by concluding that there was a better use of that engineering money some other place. They can, of course, recommend that action to the Executive Committee.

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F.C.
History

Interoffice Memorandum

To: PETER SMITH

cc: see "CC" DISTRIBUTION

Memo: 5336968368COR42
Date: Fri 13 Feb 1987 2:03 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: PASSION

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We tell different stories to explain how we change from a Corporation being in the doldrums four years ago, to one being filled with enthusiasm and being quite successful. They are all true, but there is one that we often don't mention, and it might be the most significant one of all. I would say it is passion for elegance.

For years, we had the Corporate strategy of DECnet, VAX, VMS, and Ethernet, but it just did not catch the imagination of our organization, and even less, our customers. We formally agreed on the strategies, we stated them and we documented them, but we had no passion.

At that time, we approached every situation by first listing all of the problems, all of the alternatives, and all of the inconsistencies, variations, and compatibilities, so that with every problem, there was no passion for the strategy, no enthusiasm, and we overwhelmed the customer with how complicated it all was, and they saw no vision, no mission with Digital.

By the time we told the customer all the possible ways of doing networking, when we listed all the advantages of putting networking on the twisted pair that was already in the wall, explained in detail the theory of collisions in Ethernet, explained the advantages of a PBX and the beauties of broadband, discussed how many years it would take to adapt all the equipment the company already had in their operation, and explained to people the intricate, detailed, complex rules of the application of Ethernet, our customers were lost and we were bored and tired.

Maybe the most important thing that we did to recover from the doldrums, was to sort out from our strategy the simple, elegant approach to networking an organization. The beautiful simplicity. The message that anyone could understand. With this, we got the whole company going in the same direction, and we convinced, and as a result, we got equipment and messages in products in marketing, and we got customers to agree and follow us.

It wasn't easy because the office group wanted to be sure that first of all, we specified that we could do All-In-1 with any piece of equipment, any PC, any terminal that people had gotten

from anywhere, and they, of course, got nowhere. The inclination of most of our engineers was first to solve all of the strange problems that one might run into in networking, and many of them showed a fear and distrust of this simple message because it might mislead the customer.

However, the passion for simple elegance, easy to understand systems caught on within the company and caught on with the customers. Results have been magnificent. It's only with this simple passion, for a simple message, that we were able to take care of all the details that were needed by the customer. We didn't mislead them with that passion. We were able to take care of them.

President Kennedy has been criticized severely, but he indeed was a leader. When he said we would put a man on the moon in ten years, everyone rallied around him, and we indeed put a man on the moon in ten years.

Kennedy undoubtedly didn't invent the idea himself, and undoubtedly, for a project that was as successful as that one was, he had technical experts lay out the program ahead of time, and assure him that it was a practical project. But he, in presenting it, did not go into the infinite amount of detail, the thousands of projects that had to be accomplished or to be worked, the infinite number of decisions that had to be made. Instead, he caught the imagination of the country by saying, "We will put a man on the moon in ten years."

That's leadership, and the results are good when it is done with wisdom and managed well. It is not leadership to first overwhelm people with all the problems, all the decisions, and all of the details.

We do not yet have the simple statements, simple goals that are sound and well thought out, that can be supported, that catch peoples imagination and passion, in many of our departmental areas. We do not have it in the factory, we do not have it the laboratory. We, to a degree, have it in the office.

Standardized applications systems can help with the passion or they can make it even more boring than ever. So far, standardized systems are well done, and it appears, are very wise. However, they are dull. We do need simple, grabbing statements from our market groups that will develop passions with our own people and our customers.

Our message for the factory could be the elegance and beauty of Ethernet in the factory (if you want to build MAP, we will support you with the knowledge and products we have developed for Ethernet). Our message to the laboratory could be the beauty and simple elegance of Ethernet, and then list all of those devices we connect through by way of serial lines, by way of Ethernet, and then, as exceptions, list those we tie into through BI, maybe CI, and maybe some day, XI. Extol Ethernet, sell serial lines on Ethernet, and sell exceptions, where needed, for higher speed approaches. Convince people we offer everything they need by hooking Ethernet to their cages of special devices, or to their very high priced data collecting, scientific devices. In the

office, we could sell the simplicity, the easy to understand networks using Ethernet, and hook them up in simple ways using serial lines and Ethernet.

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Interoffice Memorandum

To: BILL HANSON
WIN HINDLE*
JACK SMITH
cc: JIM CUDMORE
IVAN POLLACK

Memo: 5323945276COR53
Date: Mon 6 Oct 1986 8:37 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: LOW-COST MANUFACTURING WOODS

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I'd like to make low-cost manufacturing a corporate goal. Our corporate strategy people believe we can't do it. I am sure we can if we take every component of the company that has to work together as a team and make sure everybody does the best, the lowest cost job possible.

I'd like you to put a team together and to have a Woods meeting to discuss the results, probably in November.

IBM and General Motors apparently really messed up their goals to be lowest cost manufacturers. It appears from the outside that the boss said by edict we will be the lowest cost producer regardless of what it costs us and they can never get a return on their capital investment on which there was no constraint.

I'd like this committee to truly find out what we can do that is wise that will not sacrifice quality.

I would like to have Frank McCabe chair the committee and should include Ron Payne from purchasing and a number of people with appropriate low-cost high production experience. I would not put any of our computer scientists or engineering staff members on this committee. It definitely should include Dick Yen probably Dick Gonzales and probably Dorothy Terrell.

So often when we talk about low-cost manufacturing we talk about moving manufacturing from one plant to another. I would make this the very last of possibilities to be considered and be sure we concentrate on all the other things first.

Let's start on the new low cost terminal to make sure it is by far the lowest cost that we can possibly make it and let's concentrate on the terminal and not on the keyboard just because in previous times when the question was asked people immediately concentrated on the keyboard and not the part in which they had responsibility.

Let's also for the study propose one more product for high production. For example a low-cost large tube workstation, or maybe just a low-cost large black and white tube monitor that can go with a VAXmate or a Teammate or a VAXstar.

KHO:ld

KO:342
DICTATED 10/3/86 BUT NOT READ

v Short-Term Active File
Diary - 16 Oct 86
F. McCabe + R. Payne
T. Fs

Interoffice Memorandum

To: FRANK MCCABE
RON PAYNE

Memo: 5323978496COR59
Date: Mon 6 Oct 1986 5:50 PM EDT
From: WIN HINDLE*
Dept: CORP OPERATIONS
Tel: 223-2338
Adr: MLO12-1/A53*

Subject: LOW-COST MANUFACTURING (KEN'S MEMO DTD 6 OCT 86)

I will be away until October 20th as far as following up on Ken's recent message. Please go ahead and collect the appropriate data and I will look forward to discussing it with you upon my return.

WH:da

WH:10.86.1060

V Talk Files

Interoffice Memorandum

To: WIN HINDLE*
FRANK MCCABE
RON PAYNE
cc: BILL HANSON
IVAN POLLACK
JACK SMITH

Memo: 5323944897COR51
Date: Mon 6 Oct 1986 8:33 AM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: PURCHASING AND LOW-COST MANUFACTURING

****
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It is believed that Digital cannot succeed in low-cost manufacturing. It is the ambition of many of our managers not to try. I would like to know why we can't and I'd like to show the world that we can.

It is believed by some of our people that purchasing and component approval procedures are one of the limiting factors. They believe that a low-cost manufacturing program has to be limited by the procedures of component approval. I'd like to reverse this and make our component purchasing procedures a key member in our plan to be a low-cost manufacturer.

Sometime please come to the Executive Committee and explain why we should not be a low-cost manufacturer and also please tell us what components for the new inexpensive display terminal have to come from the U.S. because we don't have parts approved from Far East suppliers and tell us what can be done about it.

Please also tell us what part would our components group and our purchasing department play if we laid out a program to be a truly low-cost manufacturer and still maintain our quality.

KHO:ld
KO:341
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Leave print mode and press RETURN
I n t e r o f f i c e M e m o r a n d u m

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To: HENRY ANCONA
DAVE COPELAND
BILL JOHNSON
cc: see "CC" DISTRIBUTION

Memo: 5336668617COR61
Date: Tue 10 Feb 1987 2:11 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: FEBRUARY 18 AND 19 EXECUTIVE COMMITTEE WOODS (REVISED)

****
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I would like each of you to come to next Thursday's Executive Committee Woods meeting and explain how you make a product out of one of your complex system jobs.

I'd like Henry to explain how he would sell a very large (or small) office system as if it were a product. I imagine that he would take the number of desks that need a terminal, divide it by eight (or 16), get the number of MicroVAX systems then continue to divide by factors to get the DEMPRs or whatever and add up very simply a complete system that would do office for a large corporation. He then would give a list of specials that people probably would want in addition, but the bulk of the job is visualized and could be advertised as simple to understand, simple to order, simple to install and easy to maintain with a small number of spare parts.

I'd like B.J. to do the same type of calculations for someone who would want to replace his 8100's and IBM terminals with Ethernet, VT320's and SNA bridges. If someone told him the number of IBM terminals he wanted to replace, what would he divide that by and in turn divide that by in order to come up with numbers of all the components? Could it be made so simple that a two-page ad could include the whole formula?

I'd like Dave Copeland to do the same thing with the factory. If they had some number of factory devices such as terminals, machine tools, controllers and compacts, how many cell controllers, baseway machines or network devices would it take to make a whole factory?

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F. C. Hinton

Interoffice Memorandum

To: GEORGE CHAMBERLAIN
DICK FISHBURN

cc: see "CC" DISTRIBUTION

Memo: 5335954538COR55
Date: Tue 3 Feb 1987 10:10 AM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: SEPARATE BUDGETING FOR PRODUCTS

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Today our engineering budget is broken down by components, usually with no consideration as to the finished product, and all the groups under Jack Shields are budgeted according to sales by geography. In my drive to change a big part of the company toward product orientation, I feel I will continue to have zero success as long as the budgeting system and the measuring system is based on components and geography.

I therefore propose that we set up a third budgeting system that is based on products. I'd like those parts of the company which are building products to be budgeted by a separate group that will operate on a list of products being developed with their plans, goals, specifications, budgets for dollars, space and sales.

I'd like to meet with you sometime next week to hear how you think we should do this.

I believe we should cut back on the growth of the company if we continue to do all our planning on the basis of components and the field and the customer putting the components together into systems without any product planning, engineering, documentation and marketing. So far we have done well treating all our customers as if they were OEM's who had to take care of the systems engineering and documentation of the products, but I think we're soon running out of banks and other customers who can do systems engineering.

In my definition, a product is often one which is explained, marketed and sold without saying there is a computer in it or software in it. There are exceptions. For example, Baseway in itself can be a product, but even though it is sold as having a computer and sold with software whose advantages and limitations are explained, it is sold as a product with one brochure and one set of order numbers with a small number of options.

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Interoffice Memorandum

To: BOB HUGHES
PETER SMITH
JERRY WITMORE
cc: see "CC" DISTRIBUTION

Memo: 5335849859C0R03
Date: Mon 2 Feb 1987 8:54 AM EST
From: KEN OLSEN*
Dept: ADMINISTRATION
Tel: 223-2301
Adr: ML012-1/A50*

Subject: SUMMARY OF LAST WEEK'S WOODS MEETING

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People worked hard and did a good job last week at the WOODS meeting on products for markets.

However, there was so much detail, it was hard to put things into perspective, and develop a simple sales pitch and set of goals for each department and each market.

I would like each one of you, one at a time, to come to the Executive Committee next Tuesday, and in a few sentences, give the marketing pitch, strategy, and goals for each group.

Win Hindle is spending more and more time with customers. Use Win as a model of an executive who needs a simple understanding of each strategy.

For example, I believe a few sentences could explain how Ethernet and Baseway will solve all factory problems when protocols and interfaces are standard and when they are not.

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E.C. 21-22 Jan 87 Woods

Jan Woods History

Interoffice Memorandum

To: JAY ATLAS

cc: see "CC" DISTRIBUTION

Memo: 5332379575COR00
Date: Mon 29 Dec 1986 5:10 PM EST
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: REVIEW OF SMALL BUSINESS - JANUARY WOODS

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Please come to the Executive Committee WOODS Meeting on January 21, 22 for a short review of small business. We would like to hear what your ideas are for a very limited product line with hardware limited to only MicroVAX's, one or two terminals, one or two printers, one cash register, and one piece of software that would cover all distributors.

Then tell us how you would organize this as an all Digital operation that would have a separate sales force which might have offices in the Digital offices, that would be paid a lot less and be a lot younger than the rest of our sales force.

This sales force would be unique, in that because of the tiny number of products and software systems, each young sales person could be truly expert and they would always have a complete set of products in the back of their car and with DECconnect, they could install the system for the customer blindfolded.

Please also list a new approach to marketing, such as no cold calls, but every city would be overwhelmed with videotapes explaining the elegance of our simple system with it's one computer that comes in eight sizes, which is from one to eight MicroVAXes on Ethernet.

We could also have a mini DECworld which goes from city to city and puts on a very thorough demonstration on a very simple set of products.

Tell us all the markets that also could use a standard set of software and a standard set of products. For example, I believe every department in a company should keep track of expensed inventory, such as maintenance supplies, nuts and bolts in manufacturing, stationery supplies, and could be run by an independent, small business system that would generate a written report for management, but which would never enter into the corporate books. This system might also run the spare parts inventory at each district field service operation.

KHO:mc
KO:562
DICTATED ON 12/29/86, BUT NOT READ

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E.C. History

I n t e r o f f i c e M e m o r a n d u m

To: see "TO" DISTRIBUTION

Memo: 5324068141COR10
Date: Tue 7 Oct 1986 2:58 PM EDT
From: KEN OLSEN
Dept: ADMINISTRATION
Tel: 223-2301
Adr: MLO12-1/A50*

Subject: MSSC AND EXECUTIVE COMMITTEE

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Probably the most key responsibility of the Executive Committee is to maintain the business model of the Corporation. I am afraid that we have let that responsibility slide to the MSSC, and I want to be sure that the Executive Committee takes full responsibility for pricing, discounts and this entire business model of the Corporation.

I would like each major pricing and introduction timing question brought to the Executive Committee before the decision is made and while the different points of view are clear. Policy decisions on what products we refuse to sell in some areas and are willing to sell in other areas should also be Executive Committee decisions.

Secondly, I would like to make the MSSC a Corporate committee. I would like to have the meetings held in the new Building 10-2 Conference Room, and I would like us to alternate the chairmanship between Jack Shields and Jack Smith every six months.

KO:350

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