

HOW TO JUSTIFY THE HIGH PAY OF VICE PRESIDENTS

To justify the high pay of Vice Presidents it is clear that the job must be filled with hassle and conflict and must devour his stomach lining. So, it is important that they arrange their jobs to encourage all the conflict possible and make as much frustration as possible. To demonstrate how we do this, let's consider an organization of sixteen groups divided into four groups of four, under four Vice Presidents who report to one senior Vice President.

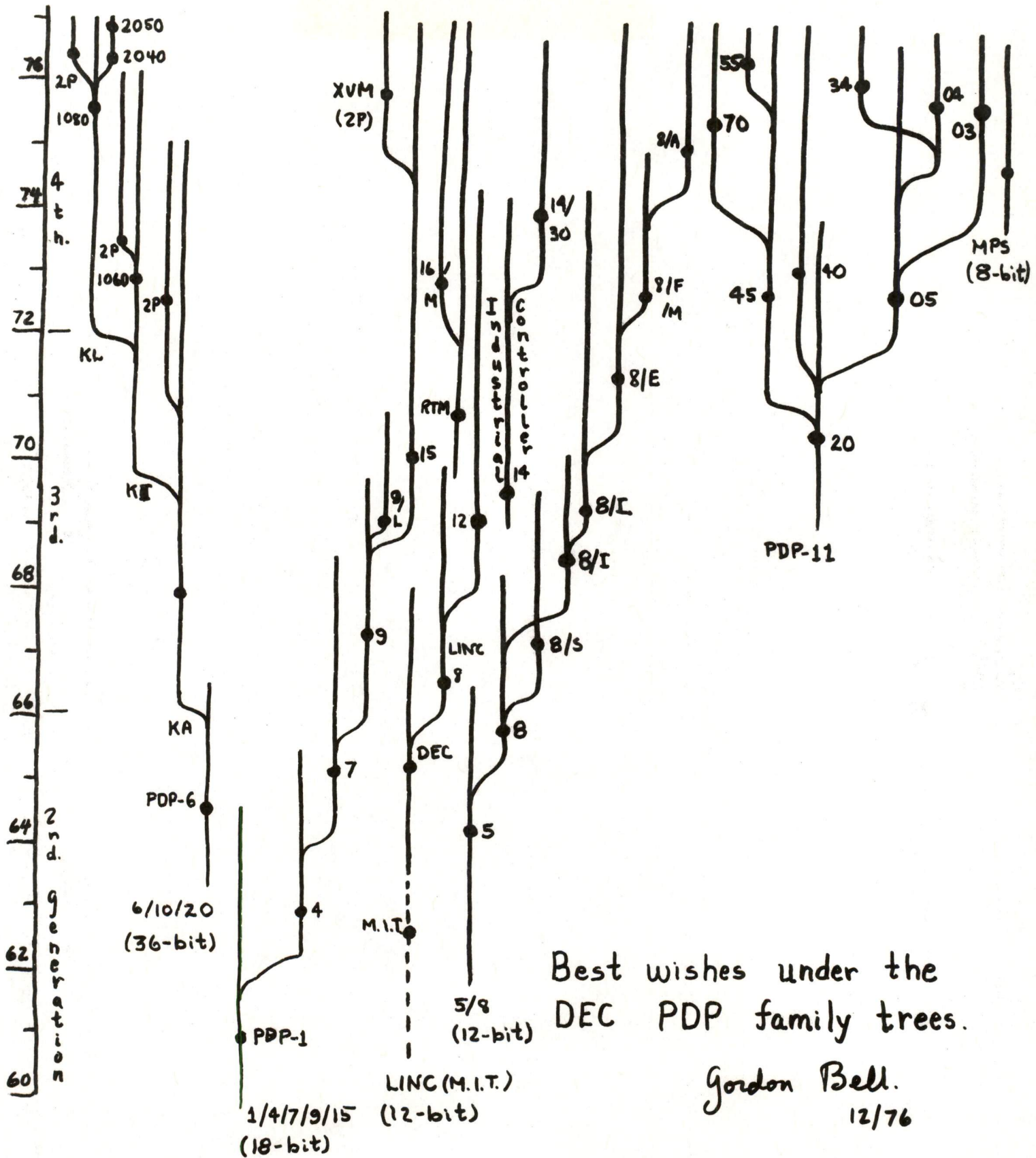
The obvious way to make strategies, plans and budgets would be to have each of the sixteen groups propose their own. They are experts in their own history, their own technology, their own markets. These strategies and budgets could then be reviewed and accepted by a higher group but all the work is done by the individual groups.

Now the problem with this obvious, easy way is that it almost eliminates the need for a Vice President. All the work is done by the group, it is approved and reviewed by a larger group and the Vice President only has to do mundane things and criticize technicalities.

If you want to generate a lot of hassle, you create budgets, plans and strategy by getting all the Vice Presidents together with the senior Vice President and have them layout plans and budgets for each other. It's a great way to create hassle because none is an expert in the other's area, although he won't admit it. They then compete with each other for the total budget pie and none of them are interested enough to spend the time to become expert in any one area.

What can further compound the frustration and hassle is by each Vice President getting his group leaders together to work on each other's budgets, plans and strategies. They too do not have the time or interest to become expert but they are very happy to hassle, get involved and take part in the discussion because they too are dividing up a piece of budget pie.

Meanwhile, the experts within the group sit around wondering what is being decided, first by the group leaders, and secondly at the Vice President meetings. They know they are being analyzed by people who don't sympathize or understand the problem. But, of course, they are willing to pay this price because the hassle generated is what justifies the high pay of Vice Presidents.



Best wishes under the
DEC PDP family trees.

Gordon Bell.
12/76

Win Hindle
ML5-2/A53

* d i g i t a l *

TO: OPERATIONS COMMITTEE

8

Hastory

TO: AKEN OLSEN

DATE: THU 22 JUL 1982 3:47 PM EDT
FROM: DAVID MENDELSON
DEPT: CORPORATE MATERIALS
EXT: 223-2173
LOC/MAIL STOP: ML1-4/P69

MESSAGE ID: 5170201522

SUBJECT: MEN'S ROOM CONVERSATIONS

Ken, I ran into you today in the men's room on 12-1, and I've been kicking myself ever since. For some time I've had a fantasy that if I ever had your ear for 30 seconds, there is something I wouldn't lose the chance to say. Yet, when the opportunity arose, all I seemed to be able to talk about was the miserable weather in the Berkshires.

So, I'll try to put it in writing.

I've worked for Digital for 5 very busy and, on the whole, very satisfying years. A little over a year ago, I was found to have an advanced metastatic cancer. Keeping body, family, and faith together over the past 16 months has been possible at least as much because of what I haven't had to worry about as what I have had to do.

The Corporation's comprehensive health insurance program has enabled me to seek out some of the finest medical care available, care which to me individually would have been otherwise prohibitively costly. Perhaps equally important, I have not had to face the prospect of leaving behind a legacy of debt, a prospect which would sincerely have broken my spirit long ago.

Our disability program has enabled me to get through those months out of work without having to be concerned with the mundane but devastatingly real issues around groceries and mortgages and day-to-day financial stability.

Our life insurance program is a key element of my family's longer term security, a security I feel particularly keenly. With all that I can't or won't be able to do for my wife and daughter, this is at least something I needn't feel guilty or badly about.

All of these have been and are important, but something else has been happening at the same time, something less policy related, something less predictable, less enforceable, the thing I wanted to share with you.

Work has always been a central part of my life. I take immense pride in where I work and in the job I try to do. It has been difficult to come to terms with physical capacities that fall short of what my mind can still do.

As I've met other cancer patients who work elsewhere, a frightening theme has emerged. Time after time I have seen capable people subtly or blatantly isolated, written off, and scrapped by their companies and

co-workers. My experience has been so much the opposite that I have to comment on it.

Virtually everywhere I've turned at Digital I have found support. Managers and co-workers have accommodated by needs for flexible schedules, flexible assignments, flexible commitments. In return, I have been able to work, to feel productive, to be productive. Most weeks I can believe I earn my pay.

The point of this is that I am not an exceptional or remarkable human being. You preside over an organization which, above and beyond its business purpose, instills and supports a set of exceptional and remarkable human values. It is too pervasive in this company to be an accident. However you may measure the success of this enterprise, be assured that my family and I measure it in ways more enduring than our annual report.

I have been given the gift of dignity. I am deeply grateful.

And there is no way I could have said all of this in 30 seconds, anyway. But I feel better for having said it.

digital

INTEROFFICE MEMORANDUM

TO: Dennis Burke
John Leng
Larry Portner
Dick Clayton
Bob Puffer
Brad Vachon

SUBJ: Arriving on Time

DATE: September 28, 1972

FROM: Win Hindle

DEPT:

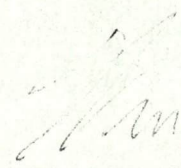
It is most annoying to arrive at 8:15 and try to make several phone calls before an 8:30 meeting, only to find the people you are calling have not arrived. The same holds true between 12:45 and 1:00.

I would like each of you and your managers, to take positive action to assure that people in your groups arrive on time. Some managers feel uncomfortable with this issue I know. To me it is a courtesy to other employees to be here on time. Those who are not here are inconveniencing those who are here trying to get a job done.

It is time to work this issue more strongly. I want you to have your managers and supervisors identify the chronic offenders and change their habits. I want the supervisors visibly here and checking on things at 8:15 so they can see what is going on.

Let's solve this problem and change the attitudes now.

ra/



April 3, 1973

- (1) No computers are sold from the division. Yes, I mean to exclude CPU's, 8M, 8F, 8E, 11's, etc., from the group. Any other components, unhooked together are fair game, including memories.
 - (2) No software sold with the components, only minimal diagnostics (test routines) where appropriate.
- . Please have the systems groups, less CPUs, buy the components from said division as most favored OEMs. A good deal of our customers will switch.
 - . I personally think we are premature in doing this. Pricing is only one area to be concerned about. Issues such as marketing, sales, distribution, quality, service, etc., must be addressed. I'd hate to see us swing our OEM base to lower prices while we are in a period of short supply. I understand the issues thoroughly, however, I'd like to have the operations committee argue this one out philosophically before we move too strongly on the mail order/components approach.

/sc



Win

INTEROFFICE MEMORANDUM

TO: Dick Clayton
John Leng
Larry Portner
Bob Puffer
John Holman

DATE: September 13, 1973
FROM: Win Hindle
DEPT:
EXT: 2338 LOC: 5-5

SUBJ: Customer Commitments

It is timely to re-state two DEC policies:

1. No commitments should be made to a customer for a hardware or software product that has not been demonstrated to work. Exceptions to the policy may be made by the Operations Committee. Special Systems (one of a kind, specially quoted systems) are exempted from this policy.
2. Announcement and prices of new products must be approved by the Operations Committee.

If you have any thoughts or questions about these, let's discuss them.

ke

STATEMENT OF A SALESMAN'S ACCOUNT RESPONSIBILITY

(Digital Equipment Corporation Policy)

Account responsibility means;

The salesman assigned such responsibility therefore has primary responsibility for managing DEC's total business relationship with the customer.

To properly exercise this responsibility, the salesman is responsible to:

1. Represent the entire company by selling all of the company's products and services that assure DEC will meet the customer needs in a manner that is profitable for DEC.
2. Mobilize and coordinate DEC's internal resources required to sell to or support the customer and to do this in such a way as to make any internal DEC negotiations or hassle invisible to the customer.

The salesman will never use the customer as a lever to apply direct pressure on internal groups.

3. Fully recognize the resource limitations and responsibilities of every DEC support group, so that, in managing the account, he works within the constraints of that group. All commitments must be made with the proper approval of the group that must meet that commitment.
4. Assure that no commitments are made to customers without a clear commitment from the internal group who will meet that commitment.
5. Maintain his role as primary DEC representative and coordinator after initial installation. His account responsibility is a continuing responsibility for a specified customer.
6. Maintain an account plan, which is originated annually and establishes objectives for the year in terms of: product business volume, problems to be solved, service contracts to be established or renewed, and other relationship goals which are agreed to for that account.

DEFINITIONS

- . An account is any defined customer organizational unit. It should be defined at a high enough level to assure customer coordination. Usually it will be a full location (site) for a business entity, but it may be several sites, whole multi-location customers or a discrete department, if consistent with our rules for organization.
- . A customer is the person (or persons) responsible for buying a DEC product and other DEC products and services associated with that activity or business. It includes all persons who may influence or affect this business in this account.



INTEROFFICE MEMORANDUM

TO: Dennis Burke
Larry Portner
Bob Savell
John Leng
Ed Kramer
Bill Hogan

DATE: February 16, 1972

FROM: Win Hindle

DEPT:

SUBJ: Punctuality

I am concerned about punctuality, not yours, but the people in your group. My observation is that work actually begins here now about 8:45 rather than at 8:15. To me, punctuality (or lack of it) is just a matter of habit that can be worked on and corrected. I think that being here on time is a matter of courtesy to one's fellow workers who want to conduct business for the first half hour of the working day.

The tough part of discussing punctuality is that we do not want to offend the people who are here every day on time, nor do we want to offend those who are legitimately late because they have gotten in late from a trip the previous day. The people we want to reach are those that come in 15 - 30 minutes late every day. I would like each of you to work with your managers on this issue to observe who arrives late and leaves right at 5. This is an individual matter that each manager and supervisor must work individually with his own people.

bwf

digital

INTEROFFICE MEMORANDUM

TO: Operations Committee

DATE: March 29, 1972

FROM: N. Mazzaresse

DEPT:

SUBJ: State of the Union Message

I have tried to put together a collection of thoughts on my major areas of responsibility. They are not exhaustive but rather represent a "stream of consciousness."

I have written it in the hope that it will be of some help to the new administration - I would like to discuss this and other things with each of you.

Enclosures: 4

Brad's group is in good shape and he manages it well. On the plus side:

1. He has developed a strong group of managers: N. Wells, J. Holman, D. Nelson, A. Peters, G. Butler.
2. I believe that Brad will be ready to assume more responsibility during next year. In particular, in the engineering project management area.

However, I do have several areas of concern:

1. The definition of the Special Systems business (lo volume production, large system responsibility, software applications) is still difficult as it cuts across all markets and products. There is considerable support for taking total system responsibility for large systems, within the Special Systems group.
2. The software applications group is Brad's major weak point. This is a tricky business, and managing the risk/opportunity is something we still have to learn. I feel at this time we should be very conservative and only undertake contract applications jobs at Maynard, Munich or California
3. I haven't figured out how to do it, but I feel that broader exposure to the corporation's business and operational problems would be good for Special Systems. I sometimes worry that they live too much on their "own island."
4. Many good product ideas and product reliability suggestions exist in Brad's group that are not taken advantage of; perhaps this is a corollary to comment #3.

Advertising & Sales Promotion:

Page 1 of 2

It will be necessary for me to directly manage this area in the short term. I believe that Gene Smith, Chuck Clemente, and Don Allen are all capable, responsive people. I have not worked closely enough with them yet to determine their management ability.

My initial exposure to the group has revealed the following inputs:

1. We're glad that all the political infighting between Gabe and Mark is over - now we can get to work.
2. The group is highly motivated and sees where it is going.

My major concern is that we establish a realistic budget and set realistic goals for FY73.

Ken has often mentioned that he feels his role is to protect groups from one another. A&SP is one of the most vulnerable groups in the company. I think Bill Smith is strong enough to afford some protection but Ken's help is particularly needed here - consider, that Bill must propose campaigns which must please (not necessarily do the job) everyone. Everyone has their own axe to grind and capriciously change their axes from meeting to meeting, witness the minicomputer woods meeting.

I am certain that I am not being too protective in these statements and there is a good deal of objectivity in them.

Bill Smith is an inspiring leader for his people - he knows the business. The quality of the people working for him is high. There is no reason why they should not be successful. If Ken affords them one-half the protection he gave to the peripheral group, I'm sure they will make it! They may even make it without Ken's help.

The major areas of concern in this group are:

1. Their remote location has decreased their visibility and impact on the rest of the organization. They should be returned to where the action is. Although it is true that someone must occupy that space, two years of exile should be adequate.
2. Most of the people are new with DEC. They can run into blind alleys and fight ghosts without close supervision and help.
3. The technical depth and understanding of our product/markets is spotty. Some strengthening here is needed - particularly in small computers. Can we encourage one of our better sales or marketing people to work here for a time?

4. At some point we should pull Trade Shows, Photo, Art, Printing (?) together in one group with A&SP. I believe these groups will get better direction as part of a communications group. Perhaps we should initiate this well after Bill returns.

Bill Long has consistently met his budget (FY71, 72). He is working hard and thinks at hiring and developing strong people (e. g., John Clarke, Wayne Furman, Jim Willis), and in managing his projects more closely (example: new project approval system). He needs continued help and support in these areas.

In the product area I have several concerns:

1. Our real cheap computer cannot be an 8 or an 11. We are competitively vulnerable unless we go to another architecture (PDP-16 or alternative) and push it as a part of our small computer family. Perhaps this is the machine we should build on a chip or two. I have the somewhat neurotic concern that one of our competitors is going to get there before we do.
2. A general comment on our engineering. Have we stopped taking risks? I feel that our smaller competitors seem to lead in technology. Our massive production system and unending committees with infinite checks and balances do indeed prevent large mistakes. Do they also prevent large opportunities from being exploited?

One current example is our conservatism towards LSI, MSI. I feel we ought to have some internal pressure to look at new technology - make mistakes and hopefully sometimes win big. Perhaps Gordon Bell can be our "gadfly!" We are prone to making big investments in areas where we don't know what we are doing (selling large PDP-10's, commercial market, etc.) and balk at moderate investments in new technology. I think our engineers are afraid to take risks.

3. Bill Long hasn't strongly managed D. Ahl. Bill's conservatism would be a good balance for Dave, but I feel he has not asserted himself adequately. The education market is on the verge of really opening up for us and I think D. Ahl has largely been responsible for our success. He does have to be watched as he may tend to overcommit. The combination of E. Kramer managing D. Ahl does concern me as they "are cut from the same cloth."
4. In the new organization the PDP-8 could sink out of sight - I think Andy and Bill are going to have to work hard to keep people motivated to properly exploit the 8.
5. I am confident that with Andy's leadership and the headstart we have that our position in the small computer market is assured.

Industrial Products:

Page 1 of 1

Al Devault is a leader; however, like many leaders he is not objective about the quality of his people. He tends to make emotional commitments and then can't back off of them. He can't be strong enough in dealing with them, "one of the boys." He tends to be intuitive rather than analytical. Perhaps his major strength is his ability to listen to customers and salesmen and define their needs.

Don Chace is one of the better product managers in the company - he needs some training to broaden his view of the business world. He is a very goal-oriented individual.

Particular concerns in the industrial market are:

1. J. Lombardo is not delegating responsibility in his group, nor is he communicating with his people. His knowledge is valuable but I believe he is miscast in a managerial role.
2. RSX-11D is probably understaffed. To reach agreement I think we made an unhappy compromise on staffing.
3. The PDP-11/25 is a key part of the industrial plan - will it exist? When?
4. Fast Fortran is a key need - why does our software turn out mediocre? Our current PDP-11 Fortran is slow and space-consuming. It appears to be too slow for realtime work and too big for problem-solving. It seems as if we developed a compromise solution to a problem which fits neither need.
5. Industrial products will really take off next year as a part of the small computer product line. In the past their ability and capability to influence product developments has been small.



INTEROFFICE MEMORANDUM

TO: John Leng Larry Portner DATE: January 28, 1972
Ed Kramer Bob Savell
Bill Hogan

FROM: Win Hindle

DEPT:

SUBJ: Project Approvals

We have not been doing a good job of keeping the Operations Committee informed of the projects and products we are working on. From now on, all projects must be approved first by myself, and then by the Operations Committee, before they are started. Obviously a small amount of time must be spent in order to prepare a project proposal. The proposal should be kept simple: it should describe the product (hardware and/or software), it should contain a first pass at the schedule and cost, and it should describe the market and forecast the units to be sold during the project's lifetime. If software is involved, there should be a comment from the appropriate Software Manager and Dave Stone, that they understand the product and can do it. Also, the project should be commented upon by one of the appropriate Cross-Company Committees - either the Engineering Committee (for the small, hardware-oriented projects), the Computer Strategy Committee (for larger programs which include software), or the Product Line Managers' Committee (for super major products, i.e., KL10). None of the Committees will make decisions, but their comments should be helpful because I think it is important to expose ideas and projects across the Company before embarking on them.

Then, before the product is announced, the Operations Committee should give final approval on price and announcement date. This approval should be put in the formal project schedule. Again, I want to be in the loop to approve this prior to going to the Operations Committee.

This is clearly a more formal way of operating than we have done before, but it serves as a useful check on all of us, I believe. If you have any questions, please let me know. I expect we will all follow this procedure from here on.

bwf



INTEROFFICE MEMORANDUM

TO: Win Hindle

DATE: December 23, 1971

cc: John Jorgensen
Dick Eastburn

FROM: Ted Johnson

DEPT: Sales, 5-3

SUBJ: PRELIMINARY REACTION TO YOUR PROPOSAL

1. The Regional Managers and I, and Dick Eastburn, have been looking at proposals of recognition, motivation and reward over the last few months and I would like to have the opportunity to discuss this with you in the very near future.
2. I do not agree with you that we have looked at all ways to stimulate PDP-15 sales.
3. I don't feel that this can really be called an experiment. Let's define what the experiment is intended to prove. If you want to prove that, under very controlled conditions, you can get more sales for one product by appealing to greed, and leave other products on a different basis, I don't think we need the experiment to prove that. The implications of precedent and affects on other product sales, on the way we sell to customers, and on the other Product Line Managers who all have very good logical reasons for having their own little gimmick, are much too serious to ignore compared to the benefits gained.
4. Although there is substantial interest in recognition and reward programs to make our salesmen a bit more competitive (everybody agrees that our sales people generally work very hard and I believe try to understand and meet the needs of the company, despite confusing messages and too many changes), there has been negative reaction to the concept of commissions from every source. Field managers are united in the feeling that recognition and reward should be based on performance against goals and we should encourage team selling.
5. I am not prepared to come up with any sure answer to your proposal for such a radical step by January 1st. Before we allow sales compensation to become a fad subject by marketing people, I think we need to address the basic problems in depth with the Regional Managers. I believe there are too many misconceptions, overly parochial interests and subtle motivations and personalities at work here in this entire area.
6. One of the big reasons we have maintained a good direct-salary operation for years has been that we started that way and kept to it. This has enabled us to be unique. I think we have tremendous advantages in cost and management control and would appreciate discussing that with you. I do not want to inhibit any fresh thinking in this whole area but I do not want to frivolously trifle with assets that we may grossly undervalue. Let's look at possible consequences of change both good and bad for the short term and the long term. Perhaps it would be interesting to discuss this with Dick Eastburn, Dennis Burke, Sales Development Group, yourself and myself. I would also like to include Jack Shields because he has some interesting points of view on this subject.

mr



INTEROFFICE MEMORANDUM

TO: Ted Johnson

DATE: December 15, 1971

cc: Stan Olsen
Irwin Jacobs
Ed Kramer

FROM: Win Hindle

DEPT:

SUBJ: PDP-15

I propose a sales incentive experiment to boost PDP-15 sales and profits. I propose that we pay a 1% commission to salesmen for all PDP-15 orders (including MUMPS) received from January 1 to June 30, 1972. We would pay 1/2 of this commission upon receipt of order and 1/2 upon customer acceptance of the system. If more than one salesman is involved in selling a particular system, the branch manager would decide on how to split the commission.

This would clearly be labeled as an experiment in the sales force with no commitment to continue beyond June 30.

I feel this is the only way left to emphasize the importance of 15 sales to DEC profits.

bwf



INTEROFFICE MEMORANDUM

TO: Dennis Burke
Ed Kramer
Bill Hogan
Geoff Shingles
Bob Lane
CC: Operations Committee
SUBJ: SEPARATE SALES TEAMS AND COMMISSIONS

DATE: 15 December 1971
FROM: John Leng *John*
DEPT: DECsystem-10 Group Manager

There seems to be growing interest in the idea of setting up a separate sales force for the 15 with commission incentives to boost the effort.

Before embarking on such a route we should consider the serious implications of having two groups within DEC competing head-on for a customer's business. We'll likely spend twice the effort in getting the same business and will confuse the customer. Furthermore it would seem that, with the very high manufacturing costs on the 15, we would be promoting one of the less profitable products.

Wouldn't it be preferable to apply this approach to our most profitable lines i.e. Logic Products. We could have a combined effort here of boosting sales effort, which has declined to practically zero with the new re-organization, and boosting profits substantially through a product which has low manufacturing costs, very little cash requirements, practically zero after sales support costs and would require no additions to the sales force.

I suggest a flat 2% commission which would make it desirable for every salesman in the field to sell modules and spares to all of his computer customers. In addition it would make being a dedicated modules salesman a very attractive proposition.

One might also try it for TPL for the same reasons.

/c



INTEROFFICE MEMORANDUM

TO: Ken Olsen

DATE: November 17, 1971

cc: Ted Johnson

FROM: Win Hindle

DEPT:

SUBJ: Frustration List

At our last Woods Meeting, we agreed to submit our frustration list to you (Peggy) so that these frustrations were out in the open and the Operations Committee could deal with them. Here is number one:

I am completely frustrated by my inability to get my budgeted sales time from the Sales force. Ted says continually that he is getting this under control, but he never does it. For example, in October, the PDP-10 received 74% of its budgeted time and Modules received 45%, while PDP-11 received 150% and PDP-8 received 142%. Quite frankly I don't know what to do beyond exerting heavy pressure on Ted, and that doesn't work.

bwf

SALES POLICY AND PROCEDURE MEMORANDUM

SUBJECT: Dress and Behaviour.

FILE UNDER: 5-19-01

ISSUE DATE: 10th Oct. 1968

TO: Domestic and International
Policy and Procedure Manuals.

PAGE NUMBER: 1

These notes are intended as reminders and guidelines to DEC company representatives.

Giving thought to one's appearance and behaviour is based on respect for oneself and others. A company representative should command respect and display respect for his customers and his own company. As the point of personal contact with the market, his personal and professional conduct directly reflect on the whole organization.

Rather than setting any specific standards of appearance or manners, thoughtfulness is stressed. Here are, however, some general reminders and guidelines to various aspects of dress and behaviour, some of them which are often noticeably overlooked.

Dress

Avoid extreme or incongruous dress. Conservative business suits, plain socks, tasteful ties, etc. are used, not because business seeks conformity or blandness, but because clothes, like any setting, can blend in or they can make you uncomfortable by their conspicuousness. Good business attire is also sensible and economical, designed for hard trips and hard wear and minimizing the problems of matching. Appearance is a clue to your taste and sensitivity. You don't have to be unusual to be interesting or worth knowing.

Dining

The business lunch or dinner can be a useful business expense. Again, good taste is the hallmark. No one wants to be clubbed by an aggressive sales pitch at mealtime. Neither do they want their time wasted. Being pleasant and gracious is always flattering to your guest and his opinion of you will be high.

Wait at each serving until everyone is served or until the customer begins eating (hors d'oeuvres, main course, dessert). Allow your guest to relax and eat at a sensible pace, neither too fast, nor too slow. Be gracious with the waiter and inconspicuous in handling the bill. Investing in being a pleasant dinner companion has its own rewards.

Humor and Politics

Two areas to watch out for. Distasteful humor, especially that aimed at people, is both dangerous and uncomfortable. Be yourself. Few people are really good at joke-telling and few are as funny as they think they are. A healthy sense of humor, however, is one of the greatest gifts and enjoyed by all. Don't be facetious about any aspect of the DEC-customer relationship. Don't get "carried away" and misuse any rapport which may develop.

Conversations about politics inevitably cause you to state a position. Positions are argumentative and are your personal affair. Remember, you are in a position to influence the customer about your company. Don't clutter up his attitude with emotional reactions to your own personal opinions. Some people can be open and candid about politics and do it successfully. Others can't especially when their views sound opinionated and arbitrary.

Watch it - you're on dangerous ground.

Tipping

The correct tip depends on the place, the service and the size of the bill. Fifteen percent is a good tip at a good restaurant, but it can be too small for a small bill and too large for a large number of people. Your judgement must be part of the equation. Tips were meant to apply to good service. Without effecient or pleasant service, there is no justification for a full tip.

Telephoning

The greatest failings here are:

1. Insensitivity to the listener's possible situation - is he busy, preoccupied, in a hurry, unable to talk privately, anxious to have some privacy, and
2. Lack of brevity. Get to the punch line. Be friendly-- but be brief and to the point. Give the punch line and explain. "George, the reason I'm calling you is....". Think before you talk and don't be casual with your listener's time. You'll always make points if you convey the feeling that you respect his time.

Smoking

If you must smoke during a business call, ask if your fellow participants mind. Some people dislike smoke. Again, smoke in a relaxed, inconspicuous manner. It is better to avoid smoking during a business conversation, especially on a first call. Let the customer set the rules.

SALES POLICY AND PROCEDURE MEMORANDUM

PAGE NUMBER: 3

Driving

No one wants to risk his neck with a speed demon.

Introductions

Make sure everyone is introduced so you show respect to everyone and don't put others in embarrassing and confusing situations.

Above all, be yourself and be considerate. You'll always be welcomed back.

sjr:

TO: Operations Committee

DATE: June 26, 1973

FROM: Andy Knowles

DEPT: Small Computer Products

SUBJ: THE ROLE of the PRODUCT LINE MANAGER TODAY VERSUS YESTERDAY

When I joined the Company in 1969 as PDP-11 product line manager, the job was quite clear to me at the time. Line wise I would be responsible for market planning, product forecasting, design, development and sales support of our new and exciting 16 bit product line. My role with the functional groups was clear; establish the financial, sales and manufacturing strategy and plans, and be there so that the appropriate groups executed the strategy and plans in concert with each other as a team. I considered the job a general management responsibility in the sense that only I had necessary and intimate contact with all phases of the PDP-11 business, namely; marketing, sales, engineering, finance, manufacturing, field service, etc. When it required a judgement call transcending all these functional areas it was clearly my responsibility to make the judgement making sure we had general agreement. I used the PDP-11 steering committee as the prime vehicle. It never bothered me or even dawned on me that functional groups controlling my personal destiny did not work for me. I didn't care. It meant little to me because the identifiable team was there working together. We had common goals. They were clear.

All together there were 7 product line managers, as follows:

- | | | |
|-----|--------|--------------|
| (1) | PDP-8 | Bill Long |
| (2) | PDP-12 | Dick Clayton |
| (3) | PDP-10 | Bob Savell |
| (4) | PDP-11 | Andy Knowles |
| (5) | PDP-15 | John Jones |
| (6) | Logic | Al Devault |
| (7) | TPL | Bob Lane |

Operations Committee

-2-

June 26, 1973

We then, in the ensuing years, evolved the product product lines into market product lines with the field specializing their forces along these market lines. But the rest of the Company stayed pretty much product oriented except for FA&T. Also, the reporting systems did not track the transition from product product lines to market group.

As sales caught up and surpassed productivity the market product lines became more and more sales support driven, did less planning and the organization became polarized with the problems showing up everywhere in the ordering/manufacturing system. As Hendersen states it so well, "Marketing, engineering and manufacturing all tend to take the policies and present character of the other two as a given and permanent constraint. The more successful a company has been in the past, the more the entire structure and company tradition will tend to inhibit a change in style or concept of competition".

Thus we have gone from a great deal of general management to little or no general management (PDP-11/45 being the notable exception). And yet we expect the market product line manager to do "creative planning", "innovative marketing", "run the business" without the tools necessary to do these jobs. In effect we are saying "figure out all those things a general manager is supposed to do, do them and don't worry about some of the key details, others will take care of said details. As we, the operations committee discover the data/details - watch out - you should have had the operations numbers at your fingertips"

I personally think it is hard to be creative, innovative and think rationally when spending a great deal of time and energy covering one's tail. Certainly the atmosphere is negative, not positive in a motivational sense. Somehow we have got to create a working teamwork arrangement again whereby the market product managers devote all their energy to doing their job rather than half doing it and half fighting others. This means getting them not to feel as though

Operations Committee

-3-

June 26, 1973

someone is looking over their shoulder and cooking up hassles. Rather, I'd like to see us look over their shoulders cooking up data which leads to problems which our organization can work on as a team. I believe this is how you get to the desired 12th commandment - "Thou shalt not hassle".

/sc

Digital Equipment Corporation

Sales Plan

I. Introduction

The purpose of this Sales Plan is to document the policies, principles, and philosophy of the DEC marketing strategy. Out of necessity, this plan is based on assumptions about DEC's non-marketing activities and on overall company principles. Many of the points that are made in this plan are merely a written recognition of attitudes that have been in existence for some time. It is hoped that this formal documentation of principles and attitudes will be useful as the company grows.

DEC is participating in a very large industry and temptations occur daily to move in widely diverging paths, particularly in pursuing different segments of the computer market each having its own specialized requirements. The aim of this plan is to adopt formally those sales policies which encourage concentrated attention on particular parts of the market, and that as a result DEC will do a better job in establishing itself more strongly in these markets.

II. Assumptions about DEC Principles

The ideas in this Sales Plan are based on the following assumptions concerning DEC principles.

1. Sound Growth – It is assumed that DEC will continue to grow. It is important to realize that growth is not a goal in itself but is a recognition of what is likely to happen. More important than the rate of growth is that growth takes place on a sound basis; this principally involves diversity of customers, products, and markets. Sound growth at DEC is most likely limited by the rate at which new people can be integrated into the organization.
2. Self-Financing – As long as DEC is able to maintain sizeable profits, growth is not likely to be limited by financial resources. This has proved to be true in the past at times when our growth was very rapid. However, in the future self-financing implies non-explosive growth.
3. Products – It is assumed that new products will be developed principally using in-house capability of DEC engineers. Furthermore, we plan to manufacture major portions of the products that we market. In contrast, some organizations enter totally new market areas by acquiring or merging

a company or by remarketing the products of some other company. This principle of in-house development implies that products which are significantly different from what we are now doing will occur at a rather slow rate which is commensurate with our increasing technical capabilities for the area.

4. Early Profit – It is expected that all new ventures will aim at returning an early profit on the investment in development. Another way of stating this is that we are not likely to go into new endeavors which will require large investments before any possible payoff can occur. The word, "large", of course, means relative to the total size of DEC. There are several important reasons for this principle. The first is that DEC is not yet large enough to take significant investment risks in a highly dynamic industry. Those companies that have entered the computer industry assuming they would lose money for three to five years have almost always done just that and furthermore have usually found that the industry has changed sufficiently during the time period so that they have continued to lose money beyond the three to five year period.
5. Commercial Products – It is assumed that DEC will continue to emphasize and sell commercial products which lend themselves to catalog type descriptions and standard prices. However, it is important to recognize that one of our most important assets in the computer business has been our willingness and capability to do special engineering jobs for our customers. It is important to use our engineering capability for special equipment in commercial business wherever possible. We should further screen the use of this capability so as to assure it will be used for those projects which have a high probability of yielding new commercial products.
6. Government Business – Eventual low profit levels, governmental controls, and excessive customer dependence are major problems in doing business with government supported activities. These comments are directed principally at defense procurement and the Renegotiation Act. Nevertheless, it is important to realize that the government is probably the largest customer for electronic equipment before embarking on a policy aimed at restricting government business. Also government business is normally easy to obtain compared to commercial business. The low profit levels of government business could very easily limit our ability to self-finance future growth and development of new products. The safe course of action which DEC should follow dictates selling only standard products to the government or its prime contractors and being very careful that all products developed have a commercial market available.

7. Uniqueness – DEC will continue to emphasize unique products, technical capabilities, and application know-how. Only by doing this will we be able to continue to command a high profit level on our business. Most of our past uniqueness has been in the product performance area. An equally important area of uniqueness is in the ability to show the customer how to use our products in new areas of application. This is particularly true of computers where until recently we have not had programmers and application specialists.
8. Market Profitability – We will try to select market areas for our products which will be unusually profitable. This is in many cases equivalent to saying we will go into new applications and new products rather than products where price is a paramount customer consideration, such as in an old, established business. It is very important to recognize the difference between merely lowering the price on a product and developing a new way to satisfy a customer requirement at a lower price to him, as the latter course leads to profit to DEC.
9. Customer Loyalty – In all of its relationships with customers, DEC will emphasize the long term relationship. This means that we may frequently recognize moral obligations above and beyond legal contractual obligations to the customer.
10. Application of DEC Products – DEC will endeavor to be a critical user of its own products. This has happened very effectively in the case of modules and they are much improved products because of self criticism. It is particularly important that we develop first-hand knowledge of the use of our computers. This can be achieved in two ways. First, we can use them for internal purposes. We are now starting plans to use PDP computers in our own business data processing, automatic testing of modules, and software preparation. In addition to these experiences, we should be willing on a limited basis to do programming for complete systems for our customers. One normally can be reimbursed for this but it is probably worthwhile even without reimbursement.
11. Current Techniques – DEC new products will continue to emphasize use of available techniques rather than depend heavily on radically new but unproven methods. This means that only a minimum effort should be invested in such fields as microminiaturization until they are available in a more advanced stage of development.

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4. Financial Support of the Market - Is this market supported by government or private industry funds? What is the prospect that this financial support will be increased, and how far into the future is support guaranteed? If the financial support is quite shaky, the risk to DEC of investing time and money in selling to this market is considerably higher.
5. Stage of Development of Market - If DEC can enter a market in the early stage of its development and participate in this development, we are more likely to be in a position to contribute something unique, thus insuring a solid base for future sales. If the market has already reached its peak of development and present activity is confined to refining techniques, it is likely that DEC's influence on the market will be inconsequential and we should not enter the field.
6. Investment Required - In order to investigate and make a contribution to the market, how much money and time would have to be invested by DEC? How many people would have to be committed to the development of the market (or new people hired)?
7. Unique Contributions by DEC - In a market where DEC has especially useful equipment or techniques, the prospect for sales is much higher. Consequently, DEC's effort should be directed primarily to markets where a unique contribution is present or can be developed.
8. DEC Volume - How many computers could DEC expect to sell to the market in relation to the amount of time, money and effort exerted in developing the products and training people? How many different customers could we expect? If the market were confined to a few large users, DEC would have to be careful not to become dependent on one customer.
9. Present Staff Interest - Is there anyone now at DEC who is enthusiastic about working on the new market? Would we have to hire a new man to work on this market, and if so, how long would it take us to find such a man? In line with developing our own people's potential along the lines of their interest, the company would be more likely to succeed in markets where a man is now available to provide leadership.
10. Profitability - Could we expect the products sold in the market to be as profitable as our present products? If the market appears to be geared to a lower rate of profit, it may not be suitable for us to spend time and effort.

11. Type of Customer - Are the customers likely to be military and thus renegotiable? If so, DEC must be assured that the sales to this market can be balanced by non-renegotiable sales of similar products in other markets.

e) OEM Market

A number of advantages can accrue from having a portion of DEC's business in the OEM market:

1. The customer's sales force is an extension of the company's sales force and does active selling of DEC Products.
2. The equipment sold to an OEM customer is repetitive business, thereby making our production and checkout problems simpler.
3. Customer service is concentrated in one location (in the long run such service may have to be expanded to the ultimate customer, thus removing this as a decided advantage).
4. The ultimate customer is, in most cases, aware of DEC and in some instances will deal with us directly in future purchases.

At the same time the OEM market has inherent disadvantages that cannot be overlooked:

1. DEC has less control over the uses and servicing of its products.
2. The business can evaporate rapidly and cause extreme fluctuations in DEC sales.
3. DEC can come to depend too heavily on one customer.
4. The customer may decide to make its own product after several years of buying from DEC.

Taken on balance, however, the OEM market has enough advantages so that DEC should consider this method of entering a market in each of the new market areas investigated.

Even if the OEM sales to one customer last for only a few years, the advantage of multiple sales outweighs the risk of losing the customer. At the same time, the amount of OEM business with one customer ought to be limited to 10% of DEC's annual sales so as to limit the repercussions of cancellations. Thus, before entering an OEM relationship with the customer, DEC ought to assure itself that the total business with this customer will not exceed 10% of annual sales.

*Qualify
Maximum OEM doesn't
cause us to lose sales* → ?

- f) Foreign Markets - Develop like U.S.

*More diversity
Non-rev.
Enter slowly -*

III. New Product Development

a) Principles *rapid*

1. Importance of product development
2. General purpose products mainly
3. Must have a market in mind
4. Sell what we have now vigorously

b) Modules -

Computers needs force new module dev.

1. VHF - Need for speed
2. Silicon - Need for
3. Educational

Applications - Literature

c) Computer

1. New systems
2. New peripheral - opportunity for uniqueness lies here
 - (1) ~~LINC~~ Tapes
 - (2) High Density Tapes
 - (3) Mass Memory *Disc + drum*
 - (4) Scopes
 - (a) Line Drawing
 - (b) Flicker Free
 - (c) Projection
 - (d) Film Reading
 - (5) Card Reading and Punching
 - (6) Low Cost Line Printers
 - (7) Paper Tape Reader
 - (8) Typewriters
 - (9) Communication Terminals
3. Hybrid Analog
4. Software

Low cost Core mem →

d) Special Systems

1. Must look for new areas like core memory testers
 - e.g. a) Thin films
 - b) Physics - PEPR
2. Need for specialized components such as fast current drivers

IV Marketing Policies

1. DEC marketing efforts should be directed toward generating long-term customer loyalty. This means assuring that DEC is loyal to its good customers. *Procedure for assuring this.*
2. Marketing effort should concentrate in selected fields and not be diluted by attempts for broad coverage of many fields.
3. DEC should develop customers who appreciate high quality and are willing to pay a premium price for this quality.
4. DEC should attempt to work with a customer in the early phases of his need.
5. Sales engineers should be especially sensitive to the special requirements of each customer.
6. All sales engineers must be able to exhibit technical competence in all phases of the sales process.
7. Application capabilities should be developed in fields which support good customers.
8. DEC will provide computer customer training in:
 - a. Programming
 - b. Maintenance
9. New product development should be flexible so as to meet customer's changing needs effectively.
10. New markets should be found for older products in preference to reducing prices.
11. Each branch office will be equipped for sales and service of all DEC products.
12. New branch offices should be established as soon as these offices are needed to exploit a particular market.
13. Marketing expense information should be readily available and broken down by:
 - a) Product line
 - b) Major customer
 - c) Warranty
 - d) Selling function (i.e. shows, sales literature, customer service, customer training, etc.)
 - e) Branch Office

14. Price should be high enough to permit a quality job to be done and earn a significant return in investment.
15. Frequent sampling of customer satisfaction by management and others will be done.
16. The marketing activity has an important obligation to inform engineering and management of quality, customer attitudes.

V

Rpt.
Sales Organization WRH

1. Sales Engineers
 - a) All who are hired should be engineers by background and training.
 - b) All must be familiar with full product line, though each may have a speciality.
 - c) Training of new sales engineers in DEC techniques and philosophy is vitally important. Typically a new employee will first be assigned to an engineering project for 3 - 6 months.
2. Organization (See attachment 1)
 - a) Sales are organized by small applications groups for specific markets and by branch offices. It is possible for a person to be simultaneously in a branch office and a member of an applications group.
 - b) Applications groups for specific markets will be formed when a particular field appears to provide a significant sales potential.
 - c) Branch offices will be opened in a sequence which depends on availability of sales engineers to staff the office and on the urgency of serving particular customers in the area.
 - d) Customer - sales/engineer continuity should be stressed, particularly in the branch offices.
3. Communications between branch offices and plant must be excellent
 - a) All communication devices (i.e. Bi-weekly, sales literature, On-Line, etc.) should be used.
 - b) Branch office personnel (including a California representative) should spend at least one day per month at the plant.
4. Sales Staff Expansion (see attachment 2)

VI

Financial aspects of sales plan (see attachment 2)

VII Plan of Action for Next 12 Months

1. Hire 4 Computer Application Engineers by 1 May 1963.
2. Assign 2 present DEC engineers to branch office work by 1 July 1963. This probably means hiring replacements in present work.
3. Hire 1 new module application engineer by 1 July 1963.
4. Hire 4 new field service technicians by 1 June 1963. (Assumes 2 present technicians will move to engineering etc.)
5. Hire 1 new technical person for training.
6. Open Munich Office.
7. Open San Francisco, Chicago and Ottawa offices before September 1963.
8. Formalize the evaluation of new markets such as medical electronics. (Need a good sample of how to do it).
9. Include the multiply and divide option in the basic PDP-1 system price.
10. Establish a rental plan to be used where we wish to encourage a customer to experiment in unique new applications.
11. Prepare application notes and demonstration of the scope.
12. Provide the engineering department with the desired characteristics from a marketing standpoint of the next computer by 1 April 1963.
13. Develop a formalized field office maintenance reporting system to minimize the communication problem with the customer.
14. Control delivery commitments on computer systems by careful quotations particularly when large engineering content is involved.
15. Initiate job cost system for sales department 1 April 1963.
16. Initiate plan for 1 representative of the California office to visit DEC each month.

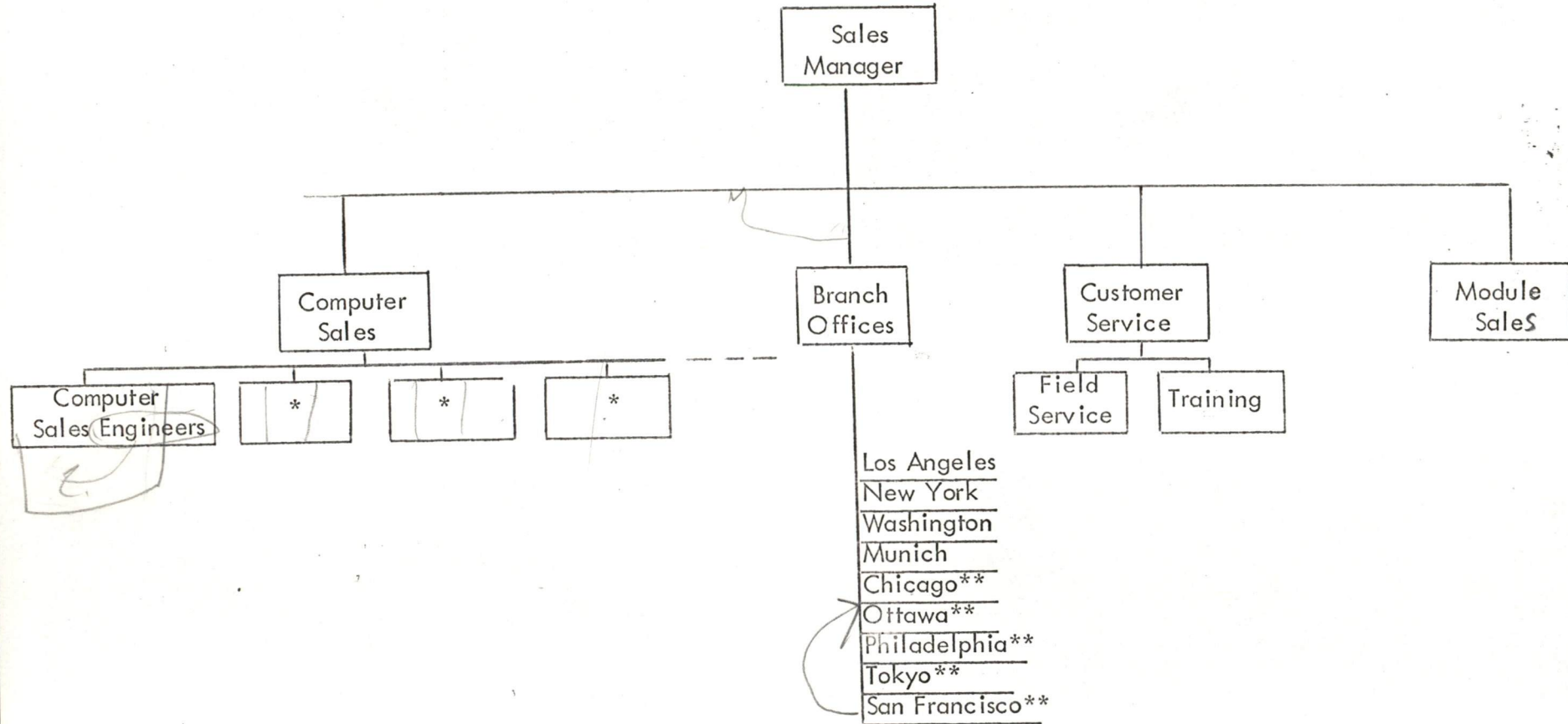
17. Formalize our management review of quality of products and service with customers at least once every three months.
18. DEC should start a physics application group for computers before 1 March 1963.
19. DEC must settle on performance specifications for the new high density magnetic tape system by 1 March 1963.
20. DEC must settle on price, performance and promotional literature for the "DEC Tape" by 1 March 1963.
21. Action should be initiated to insure that DECAL is completed by April 1, 1963.

Harlan E. Anderson

Winston R. Hindle

HEA/WRH/ncs

Basic Sales Organization of DEC



* Application Groups for Specific Markets (*i.e. Physics, Medical*)

** New Offices to be Established.

Total Technical Sales Staff at the End of Each Fiscal Year

	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>
Module Sales	2	3	4	5	6	7
Branch Offices	4	9	14	17	20	23
Computer Sales —						
General	2	3	4	5	6	7
Physics		2	3	4	4	4
Medical		1	2	2	2	2
Process Control	1	2	2	2	2	2
Communications		1	2	2	2	2
Scope Application		2	3	4	4	4
New Areas			2	4	8	12
Customer Service —						
Field Service	6	10	15	22	30	40
Training	2	3	4	6	8	10
Sales Management	<u>2</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>5</u>	<u>5</u>
Total Technical Sales Staff	<u>19</u>	<u>39</u>	<u>59</u>	<u>77</u>	<u>97</u>	<u>118</u>
<u>Annual Sales Costs</u>		\$700K	\$1,440K ^{\$1,180K}	\$2,180K ^{\$1,640K}	\$2,840K ^{\$2,100K}	\$3,580K ^{\$2,610K}
(Based on present ratio of technical sales staff to sales costs)						
<u>Annual Sales Volume Forecast</u>		\$10,800K	\$14,000K	\$18,200K	\$23,600K	\$30,600K
<u>Sales Costs as percent of Annual Sales</u>		6.5%	8.4% 10.4%	9.0% 12.1%	8.9% 12.0%	8.5% 11.7%

MEMORANDUM

TO: Digital Equipment Corporation Works Committee

FROM: Jay W. Forrester

November 5, 1962

SUBJECT: Comments on rough draft of "Sales plan outline" received
November 3, 1962

The following are various thoughts arising from the rough draft of the sales plan distributed by Stan Olsen.

1. Breadth versus depth

I believe there are two extremes in sales approach which should be recognized and a proper compromise between them established. On the one hand is a sales program which I would call broad and thin, which spreads itself over many applications, many products, and a large geography. On the other hand there is the approach characterized by depth and concentration. It is my feeling that the proposed sales plan lies too far in the direction of the broad, thin extreme.

a. Reasons for concern

The broad, thin approach seems to suggest a more casual relationship to the customers. It tends to imply a mass market rather than one in which there are many ties and good mutual understanding between DEC and individual customers. The broad, thin approach would seem to contradict the concept of high quality performance beyond the physical product itself. It implies spreading company representatives very thinly over the many customers in a geographical area. "Selling" is left largely in the hands of the customer to respond as best he can to literature and casual contact with DEC personnel. In the extreme, this means that DEC is not able to take responsibility for the success of the customer's application. It means the customer tends to be "on his own." One unsatisfactory outcome would be, I feel, that price would become too large a consideration in the customer's mind compared to the intangible forms of DEC performance that lie outside of the physical product itself. The broad, thin approach may carry implications of putting emphasis on total sales as such rather than on repeat sales and solid customer satisfaction and DEC reputation.

2. Emphasis on depth

If one were to decide to emphasize depth and concentration, the following kinds of considerations would become important.

a. Sales office expansion

Figure 2 in the proposed plan shows rapid geographical expansion through the opening of additional sales offices. One would want to reconsider this very carefully since it is hardly conceivable that any one of these areas can be handled in depth by a single man.

b. Repeat sales

If one is going to be concerned about depth of penetration one needs to recognize and measure some important variables. Repeat sales become one of the measures of customer satisfaction. One should have some definition of the ratio of new customer to old customer sales and should develop some concept of a desired ratio. One would need to define an old customer, perhaps as one who has been purchasing for more than twelve or eighteen or twenty-four months. One should decide what is the proper basis for the measurement of repeat sales. It may well be the ratio of present sales rate to the integrated total past of all sales since one would hope that all past sales are being instrumental in creating re-buy sales.

c. Sales training

The memorandum specifies in a general way the importance of trained sales personnel. This needs to be spelled out as to what it means quantitatively and organizationally. The organization chart seems to show nothing which is clearly a specific responsibility for the creation of a training program.

d. Sales depth experiment

If the idea of depth in the sales program is to be given any serious consideration an experiment seems justified. Rather than staff all geographical areas thinly, I feel at least one of them should be singled out for treatment in extreme depth. This might be consciously planned toward what is thought to be over-staffing both in numbers and in quality. It is my expectation that we may know so little of the character of the market that what first seems to be overstaffing will in fact still fall in the linear response part of the DEC-market interaction relationship. One needs to know what can be developed in the long term in a market where DEC is providing fully adequate sales and service. My expectation is that such an experiment will show that DEC is not yet large enough to require the large geographical expansion suggested by the memo.

3. Quantitative plans

This present sales outline is an excellent beginning point, as was its intention. However, a great deal of it is non-specific. Therefore, it cannot be evaluated and likewise it does not provide a guide for detailed implementation. There are many general references of the following types:

"Strong home office support staff"

"Application engineers...will be trained extensively"

"Frequent home office contact"

These comments refer to important subjects but until their quantitative meaning and a method of implementation is spelled out, they remain the kind of generalities to which all people subscribe but many may not practice.

Unless there is a formal measuring and reporting system which is kept active and is monitored with the results plotted and circulated, these desirable generalities may remain only hopes rather than actions.

4. Scope of applications engineers

"It is assumed that the applications engineers in DEC's sales department will have a knowledge of the entire product line."

General knowledge of the entire DEC scope of activity is desirable on the part of all sales representatives. However, there seems to be an implication here that these general representatives will in fact do all of the selling. Such indicates a move toward a functional subdivision which I feel is not compatible with the kind of competent person that DEC should present in public. Again, two extreme choices become boundaries between which to steer a course. One alternative is to have salesmen who first and last are salesmen. They have a uniform knowledge of all of the company's products but may not possess great depth of understanding of any one product. Also it is almost certain that they will not have deep understanding and responsibility and authority in non-selling areas such as research and development and production.

Another extreme alternative is to have field representatives that know all of the aspects of a particular product. They know its capabilities, they know how and why it was developed, they know the production schedules and what delivery promises can be expected, and they know a great deal about the customer's application and how and why he will use the product. He can speak with knowledge and authority for all aspects of the product.

If one were to follow either extreme, I would prefer the latter. However, a compromise is probably indicated because there is a problem of matching the expert in a particular product line with the proper customers. Therefore, a general marketing representative is probably needed who will immediately draw in a person better qualified to handle the particular area of DEC activity which the customer wants.

In connection with this you will note the reversal in the last few years of the IBM sales philosophy, wherein they now specialize by customer type to give greater depth of treatment to the customer's problems. A particular city will therefore have several IBM sales offices dealing with different kinds of industries. The representatives in one of these offices are expected to know not only IBM's product and capabilities but also the business of the customer.

5. Timing of sales department expansion

In this memorandum growth is handled entirely in terms of growth in sales bookings. However, the memorandum deals with the sales department. As the planning becomes more detailed the time phasing of activities within the sales department should be given special attention. There are great dangers in building up sales faster than the competence of the organization. The time sequencing of the entire growth process should be identified to see when actual increases in sales become feasible. One should start with personnel acquisition, training, apprenticeship, progression into short term sales and marketing activities, and eventually into longer term activities. As the schedule is laid out it may become evident that much work and much time is required before substantial, safe and sound sales can build-up.

The memo indicates certain reorganization and strengthening of the sales department. This in itself will create turmoil and some inefficiencies. To simultaneously subject the organization to the demands of a higher sales volume will almost inevitably decrease the quality of the effort and push the activity toward the "broad and thin" category. The long term marketing activity and the performance monitoring activity to be discussed later should be put on a sound basis as soon as possible. These will take present good people out of the marketing activity and the hole must be filled before one is ready for growth in the department.

6. Control information needed

Information for monitoring the sales effort is needed. This is suggested on page 3 of Stan's memo. "Current reports on sales produced by each of the sales offices are a necessary part of evaluating performance." This is good although I feel that more than a measure of present activity is needed. One should have a monitoring and constant reporting through independent channels of customer reaction to DEC sales personnel and methods. Total sales are not a satisfactory measure of the sales activity. One should distinguish between re-negotiable and non re-negotiable business, between new customers and repeat sales, and between old and new types of markets. A sales office should be held responsible for the proper balance between these considerations and between current sales and future market developments. Unless these characteristics are measured, reported, and used to bring guiding pressures on sales offices, the sales activity may not contribute as much as it should to the company performance.

7. New products

On page 3 under engineering there is a reference to the reporting of sales department information on possible new products to the engineering department. This brings up the classic problem of sales versus engineering. Where does the responsibility for new products

lie? Where is there enough information about the entire technological process from research to satisfied customer so that sensible decisions can be made? Functional compartmentalization with sales on the one side and engineering on the other seems especially unsuited for operations on a rapidly changing technological frontier. The organization chart shows a man in medical electronics. What are his responsibilities? Is he to specify and develop equipment? Does he have freedom to create products that will fit the medical electronics field? Can he negotiate with and subcontract to engineering? Is he a manager with the responsibility for successful sales in the medical field or is he a salesman trying to peddle the product of an engineering department who themselves do not have sufficient contact with the customer? These questions should be resolved. I favor the business-with-a-business structure in which new products and new fields of application are given to managers who have responsibility for everything that is involved in final success. How to do this is a separate subject to be developed if the group wants to explore it.

The separated sales and engineering departments lead to lowered mobility and diffused responsibility in new product and new market areas. I feel that the formal sales organization should be primarily interested in the established products. New products and new applications areas should be perhaps carried in a separate activity of the company.

8. Organization

a. Market time phases

The present organizational chart breaks down activities by product and by function. This means that in all parts of the organization the long term and the short term activities are combined. Under these circumstances the pressures of the short term will almost always drive out the proper allocation of attention and resources in the long term.

A different form of organization would segregate activity by time phase. Selling established present products would be one activity (which could be subdivided as desired). Development of new products and applications areas for fiscal year 1964 would be another activity. Development of new markets for fiscal years 1965 and 1966 would be another activity. Monitoring of sales department performance and customer attitude would be a separate responsibility within the organization.

If one were to adopt the time phasing form of organization seriously it would be necessary that the best and proven people go into the longer term activities. Their performance will be harder to observe until the payout date comes. Their capabilities need to be known and the organization must have confidence in them.

This implies a "leapfrog" type of organization. People have

responsibility for a specific time period. This is quite different from appointing a group as "long term planners" who have their eye always on the long term. Such an assignment leads to irresponsibility since the planner is not to be responsible for the execution of his plans. By assigning responsibility for a particular time period the early planning gets undivided long term attention and this merges continuously in the hands of the same group into the active sales program at the proper future time. Such an organizational form could also help to prevent stagnation by creating a continuous realignment and reshuffling of personnel.

b. Performance monitoring

In the first paragraph of the memorandum there is mention of the sampling of customer satisfaction. No specific provision for this appears in the rest of the document. I feel that it is very important. Furthermore, it is inherently an inspection and policing function. It is therefore not appropriately done by those whose actions are being inspected. Otherwise, the objectivity of the measure will be lost. Furthermore, the monitoring of performance is a long term type of operation which is easy to postpone. If monitoring is to be effective I feel that it should be specifically provided for in the organization and staffed by one or more people who have no other responsibilities while they are filling that position. It is my present feeling that the position should not be permanently held by any one person but should be taken in rotation by men of outstanding managerial and technical competence within the company who perhaps take a tour of duty here between the management of successive project assignments. Perhaps a six-month tour in this monitoring activity would be appropriate. It would be a time when the man could refresh his awareness of the nature of the company's customers, could get new insights into the character of the market, and could put himself in better contact with the outside world as well as performing the monitoring function. He should be a senior, courageous person who is receptive to critical comments and attitudes from the customer, but at the same time is in a position to achieve corrections within DEC.

c. Sales retraining

Semi-annual sales retraining is suggested in the memo. This like other long term activities should appear as a specific and exclusive responsibility in the organization chart if it is to be real. Sales retraining should have two aspects: one, to keep up the competence of the organization, and another to keep up the development of the individual people. At this point it begins to overlap with our proposed discussion of personnel development. Specific attention needs also to be given to personnel rotation. This should include rotation between the various time phases of activity mentioned above and also rotation out of the sales department into engineering, development, and production. Like other long term plans, personnel rotation is apt to be forgotten or may be done in a way that undermines responsibility. The man should stay with a job long enough

and in such a way that he is responsible for some complete and measurable "package." His early decisions should primarily affect his own later success. A clean breaking-off place should exist before he takes up other duties. Having arranged this organizationally, one should then try to broaden the experiences of the personnel within the company. Much of the confidence and capability that DEC wishes to radiate in the marketplace can only come if the personnel that the customer sees are broadly trained and are competent in many aspects of the company's and the customer's work.

d. Personnel ratios

The present organization chart and the memo did not treat some very important ratios of the sales organization to the company activity. First of all there are several categories of personnel. These can be segregated by ability, by competence to handle various of the time phases mentioned above, by breadth of training, and other measures. What proportions of each of these are required? Should these ratios be related primarily to present sales, to projected sales, or to the integrated total of all past sales? Some activities are directly related to present sales. Others such as, for example, the acquisition and training program *for customer service* must be related to the total of all past sales. These relationships need to be thought through. In general the growth process should be iterative, in which one starts with a desired growth pattern. This desired pattern then would lead to the establishment of the required capabilities within the sales department and other organizations of the company. Actual sales would then be accepted only to the extent that these expansions of capability had indeed taken place. The emphasis would then become one of creating growth in capability to meet planned expansion, but at the same time controlling commitments to the level of existing capability. The inverse of this usually takes place, in which orders are accepted and then capability is expanded. The problems of many companies arise from the fact that some of the capabilities which are required cannot possibly be expanded after the commitments have been accepted without diluting the quality of the performance.

Figure 3 should therefore be greatly detailed into various categories of activity to show how the time phasing of growth would be established.

DIGITAL EQUIPMENT CORPORATION

SALES PLAN

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Digital Equipment Corporation

Sales Plan

I. Introduction

The purpose of this Sales Plan is to document the policies, principles, and philosophy of the DEC marketing strategy. Out of necessity, this plan is based on assumptions about DEC's non-marketing activities and on overall company principles. Many of the points that are made in this plan are merely a written recognition of attitudes that have been in existence for some time. It is hoped that this formal documentation of principles and attitudes will be useful as the company grows.

DEC is participating in a very large industry and temptations occur daily to move in widely diverging paths, particularly in pursuing different segments of the computer market each having its own specialized requirements. The aim of this plan is to adopt formally those sales policies which encourage concentrated attention on particular parts of the market, and that as a result DEC will do a better job in establishing itself more strongly in these markets.

II. Assumptions about DEC Principles

The ideas in this Sales Plan are based on the following assumptions concerning DEC principles.

1. Sound Growth - It is assumed that DEC will continue to grow at rates in the vicinity of 30% per year. It is important to realize that the rate of growth is not a goal in itself but is a recognition of what is likely to happen. More important than the rate of growth is that growth takes place on a sound basis; this principally involves diversity of customers, products, and markets. The advantages of diversity have been illustrated clearly in the case of DEC during the past several years when one of the three major lines of business has temporarily carried the

expenses of one of the other lines of businesses, (e.g., modules supporting computers). Sound growth at DEC is most likely limited by the rate at which new people can be integrated into the organization.

2. Self-Financing - As long as DEC is able to maintain sizeable profits, growth is not likely to be limited by financial resources. This has proved to be true in the past at times when our growth was very rapid. However, in the future self-financing implies non-explosive growth.
3. Products - It is assumed that new products will be developed principally using in-house capability of DEC engineers. Furthermore, we plan to manufacture major portions of the products that we market. In contrast, some organizations enter totally new market areas by acquiring or merging a company or by remarketing the products of some other company. This principle of in-house development implies that products which are significantly different from what we are now doing will occur at a rather slow rate which is commensurate with our increasing technical capabilities for the area.
4. Early Profit - It is expected that all new ventures will aim at returning an early profit on the investment in development. Another way of stating this is that we are not likely to go into new endeavors which will require large investments before any possible payoff can occur. The word, "large", of course, means relative to the total size of DEC. There are several important reasons for this principle. The first is that DEC is not yet large enough to take significant investment risks in a highly dynamic industry. Those companies that have entered the computer industry assuming they would lose money for three to five years have almost always done just that and furthermore have usually found that the industry has changed sufficiently during the time period so that they have continued to lose money beyond the three to five year period.

5. Commerical Products - It is assumed that DEC will continue to emphasize and sell commercial products which lend themselves to catalog type descriptions and standard prices. However, it is important to recognize that one of our most important assets in the computer business has been our willingness and capability to do special engineering jobs for our customers. It is important to use our engineering capability for special equipment in commercial business wherever possible. We should further screen the use of this capability so as to assure it will be used for those projects which have a high probability of yielding new commercial products.

6. Government Business - Eventual low profit levels, governmental controls, and excessive customer dependence are major problems in doing business with the government supported activities. These comments are directed principally at defense procurement and the Renegotiation Act. Nevertheless, it is important to realize that the government is probably the largest customer for electronic equipment before embarking on a policy aimed at restricting government business. Also government business is normally easy to obtain compared to commercial business. The low profit levels of government business could very easily limit our ability to self-finance future growth and development of new products. The safe course of action which DEC should follow dictates selling only standard products to the government or its prime contractors and being very careful that all products developed have a commercial market available.

7. Uniqueness - DEC will continue to emphasize unique products, technical capabilities, and application know-how. Only by doing this will we be able to continue to command a high profit level on our business. Most of our past uniqueness has been in the product performance area. An equally important area of uniqueness is in the ability to show the customer how to use our products in new areas of application. This is particularly true of computers where until recently we have not had

programmers and application specialists.

8. Market Profitability - We will try to select market areas for our products which will be unusually profitable. This is in many cases equivalent to saying we will go into new applications and new products rather than products where price is a paramount customer consideration, such as in an old, established business. It is very important to recognize the difference between merely lowering the price on a product and developing a new way to satisfy a customer requirement at a lower price to him, as the latter course leads to profit to DEC.
9. Customer Loyalty - In all of its relationships with customers, DEC will emphasize the long term relationship. This means that we may frequently recognize moral obligations above and beyond legal contractual obligations to the customer.
10. Application of DEC Products - DEC will endeavor to be a critical user of its own products. This has happened very effectively in the case of modules and they are much improved products because of self criticism. It is particularly important that we develop first-hand knowledge of the use of our computers. This can be achieved in two ways. First, we can use them for internal purposes. We are now starting plans to use PDP computers in our own business data processing, automatic testing of modules, and software preparation. In addition to these experiences, we should be willing on a limited basis to do programming for complete systems for our customers. One normally can be reimbursed for this but it is probably worthwhile even without reimbursement.
11. Current Techniques - DEC new products will continue to emphasize use of available techniques rather than depend heavily on radically new but unproven methods. This means that only a minimum effort should be invested in such fields as microminiaturization until they are available in a more advanced stage of development.

III. Markets

DEC has sold its products to government laboratories, universities, industrial organizations, and private research laboratories. Almost all users of DEC's products have engineering background and experience. In serving these customers we have concentrated principally on excellent hardware quality but have gradually been increasing the services that we provide along with the hardware. An important reason why customers have bought DEC products has been our flexibility and willingness to design special products or variations on standard products to meet their requirements. Our size has made this easy to do and it has been a major asset. Examples of this are very conspicuous in our memory testing business, and in our computer business to a slightly less degree. We have been quite successful in avoiding one-of-a-kind-type designs but still offering special features when required. Products for which true mass production is required are normally sold in markets which are so large as to be attractive to many organizations and thus quite competitive. On the other hand, work which is 100% special for each customer, no matter what price you charge, cannot be very profitable and frequently represents an uneconomical buy for the customer. For the foreseeable future it will be necessary to strike a balance between these two conflicting requirements.

I. Present DEC Markets

The areas of application listed below are the principal ones for which DEC products have been sold.

- a. Scientific and Laboratory Use-This area of application is typified by our sales to Bolt, Beranek, and Newman, Itek, U.S. Air Force at Bedford, Systems Research Laboratory and others. These people have frequently used the computer as a real time device where they are studying man-machine relationships, automatic teaching machines, medical analysis, radar data analysis, library research, information retrieval techniques, etc. At the time these people made their decision to buy DEC, they did so for two principal reasons; first, they were getting computer speeds in the range of the IBM 709 and 7090 at a fraction of the price; second, they wanted to buy special options and features with the equipment initially and be able to add other options later. Both of their

objectives were basically satisfied by DEC.

- b. Communications - DEC entered this business exclusively through the sale of computers to the International Telephone and Telegraph Corporation. The initiative for the application was clearly taken by ITT and we played the role of a hardware supplier. The sales peak to them has passed, but DEC gained in several very important ways through this affiliation. First, we started producing computers in significant quantities and established the manufacturing organization and techniques to accomplish this. Second, we acquired some experience in how computers can be applied in the field of communications. Third, the company acquired a reputation beyond what we otherwise would have received merely by association with ITT in the eyes of their customers. We also gained some recognition by ITT affiliates in Europe. Although the major sales to ITT are probably completed, we now have developed transmitters and receivers for doing communications work. We also have potential sales to Bell Telephone Laboratories, RCA Communications, and Standard Telephone and Cables, Ltd. This general area of computer application was described recently by IBM as one of the two which are still limitless.
- c. Process Control - Our entrance into this market has been similar to the communications market except that it is on a smaller scale and in an earlier stage. Our initial affiliation is with the Foxboro Company and is progressing quite satisfactorily. We are playing a more active role in the marketing with them by conducting tours of our facilities for their customers. For the most part these are customers who have never heard of DEC prior to their visit here. In addition to selling computers to Foxboro, we are free and willing to sell computers to other systems manufacturers for process control, such as Leeds and Northrup. On occasion, we will also make special purpose systems which we sell directly to customers in this field of application. This business is almost totally non-renegotiable and holds great appeal for DEC.

- d. Data Collection - The sale of computers to Jet Propulsion Laboratory and Beckman Systems have typified this area of application. It is almost 100% renegotiable business using the computer as a special purpose device for doing such things as receiving teletype relayed reports from a satellite and recording the information on magnetic tape for later analysis. There is much business available in this area, particularly if one is willing to take complete system responsibilities including programming, system operation, hardware design, etc.

- e. Hybrid Analog Digital Simulation - This area of application is typified by our sale to Minneapolis-Honeywell. They bought from us principally because of hybrid research work conducted by MIT with the TX-0. However, these applications are likely to be military, and we should attempt to sell standard commercial products for them, which means selling to the prime systems contractor. The obvious candidate for this is Electronic Associates, Inc., the largest analog computer company, which is presently evaluating five digital computers and will presumably standardize on one for incorporation in hybrid work. DEC has also sold one PDP-1 in this area of application to United Aircraft, and direct sales to the end user instead of to a company like EAI appear to be possible.

- f. Physics - Here we have sold computers to MIT for use in analyzing bubble chamber photographs. Our oscilloscope and light pen have been key factors in this application, and we have also designed a special purpose digital system known as PEPR to be used as an accessory with the PDP-1. In addition to these two parts, MIT has designed special optics equipment to go with this system. Each of the three parts are about equal in size and are all required to implement the MIT technique. We have also sold modules to several European atomic energy installations which have been used by the customer to build

special purpose digital devices known as the Hough-Powell System for reading bubble chamber photographs. Several duplicate installations are possible for both of these techniques for analyzing bubble chamber photographs. As a second physics application, we have now sold a computer for controlling an accelerator at the Atomic Energy Commission of Canada. There are several similar installations possible at places like Yale, University of Minnesota, University of Rochester, etc. The third physics area of application is control of nuclear reactors, and we are currently preparing a proposal for this application to the AEC of Canada. All three applications appear quite general and also appear to offer international opportunities. We should go much further in understanding the application of our products in these areas so that we can anticipate the needs of the field and strengthen our position. This necessitates assigning one or more full-time people to the applications of our products in the field of physics.

- g. Test Equipment - This market is best represented by the memory testing systems that we have been building so successfully. The size of this market is ideal for DEC. It is large enough to be profitable and to offer repeat sales opportunities, but it is small enough so that it is not attractive to enough people to make it highly competitive. In addition to memory testers, we have sold many of our module products for use in special test systems, such as, the system that IBM made for the Mercury program.
- h. Special Systems - Most of our modules have been sold to customers who make special systems out of them. There are several reasons why people buy our modules for this work. First, the modules are easily available. Second, they have a reputation for working and for being easy to use.

Third, many module customers could not afford to have as large a design effort supporting their own production of modules as DEC provides. Fourth, many module users are government, educational, or research oriented and try to avoid producing things that they can buy from reliable sources. Some users, such as IBM, Bell Labs., RCA, etc., who obviously are large enough and, indeed, do produce modules for use in their own products, frequently find it easier, less expensive, and quicker to buy modules from DEC.

- i. Education – Since modules are the building blocks of computers, an excellent way to teach computer design technology is by laboratory use of modules. This has represented a sizeable module market, principally in military schools. There is definitely a commercial market to schools and universities for the same type of instruction, but the market will probably be slower to develop.
 - j. General – In addition to the above market areas, DEC products have been sold in unique situations that do not fit a particular definition. Some of these customers are University of California at Livermore, Geotechnical Corporation, and United Gas Corporation. It is important that some part of our marketing capability be reserved for general customers who do not now fit into system categories. Out of this group may emerge eventually new categories that are in the embryo stage of market development.
2. New DEC Markets – The market areas listed in this section are those which are new to DEC but for which some commitment has already been made. In general, we have not yet made any significant sales in these areas.
- a. Medical Research – Here we have loaned on a one-year basis a computer to Massachusetts General Hospital for use in their research laboratories. They are now teaching in-house courses in programming at the hospital and also at Harvard Medical School. In addition, we have started

renting time on our PDP-4 in Maynard to Yale University for use in brain wave averaging. We are now preparing a proposal to Bolt, Beranek, and Newman for a PDP-1 equipped with teletype facilities and a very large memory for use in patient record keeping at Mass. General Hospital.

- b. Computer Aided Design - This is an MIT research project aimed at developing computer programs and hardware to do automatically more of the design; it is intended to be compatible with the concepts of the APT program. The SKETCH-PAD program is also included in this development. Our commitment in this area involves the development program for a line drawing and circle drawing oscilloscope. A good description of the objectives of this research is contained in the MIT Reports on Research, January 1963 issue.
- c. Analog-to-Digital Conversion - DEC has incorporated analog-to-digital conversion equipment into systems and has sold modules for analog-to-digital conversion purposes. We have a continuing development effort in this area and it represents a significant potential market.

3. Markets to be Evaluated - The following general market areas appear to be somewhat compatible with our product capabilities and should be evaluated as potential areas of interest for DEC.

- a. Drug Research
- b. Automatic Control
- c. Printing Business
- d. Oceanography
- e. Geosciences
- f. Hotel and Department Store
- g. High Schools
- h. Engineering (Small computer for small company concept)
- i. Teaching Machine Use
- j. Business Applications - (Secondary use perhaps)
- k. Materials Testing - (Instron Machines)

4. Market Evaluation Techniques - Before expending time, effort, and money on a new market for our products, DEC must evaluate that market based on the following criteria:
 - a. Market Characteristics - What is the most realistic estimate of the total number of units that can be sold in this market? Over how many years will the sales last? How many organizations are likely to buy? What kind of products will be needed in the market?
 - b. Market Saturation - How many units have already been sold and how many companies have already committed themselves to a portion of the market? If the competition has already committed itself to cover the market and DEC has nothing unique to contribute, the company should not concentrate its efforts here.
 - c. Saturation by DEC - Is this a market which DEC can potentially saturate? If not, what percent of the market could DEC realistically obtain?
 - d. Financial Support of the Market - Is this market supported by government or private industry funds? What is the prospect that this financial support will be increased, and how far into the future is support guaranteed? If the financial support is quite shaky, the risk to DEC of investing time and money in selling to this market is considerably higher.
 - e. Stage of Development of Market - If DEC can enter a market in the early stage of its development, and participate in this development, we are more likely to be in a position to contribute something unique, thus insuring a solid base for future sales. If the market has already reached its peak of development and present activity is confined to refining techniques, it is likely that DEC's influence on the market will be inconsequential and we should not enter the field.
 - f. Investment Required - In order to investigate and make a contribution to the market, how much money and time would have to be invested by DEC? How many people would have to be committed to the development of the market (or new people hired)?

- g. Unique Contribution by DEC - In a market where DEC has especially useful equipment or techniques, the prospect for sales is much higher. Consequently, DEC's effort should be directed primarily to markets where a unique contribution is present or can be developed.
 - h. DEC Volume - How many units could DEC expect to sell to the market in relation to the amount of time, money and effort exerted in developing the products and training people? How many different customers could we expect? If the market were confined to a few large users, DEC would have to be careful not to become dependent on one customer.
 - i. Present Staff Interest - Is there anyone now at DEC who is enthusiastic about working on the new market? Would we have to hire a new man to work on this market, and if so, how long would it take us to find such a man? In line with developing our own people's potential along the lines of their interest, the company would be more likely to succeed in markets where a man is now available to provide leadership.
 - j. Profitability - Could we expect the products sold in the market to be as profitable as our present products? If the market appears to be geared to a lower rate of profit, it may not be suitable for us to spend time and effort.
 - k. Type of Customer - Are the customers likely to be military and thus renegotiable? If so, DEC must be assured that the sales to this market can be balanced by non-renegotiable sales of similar products in other markets.
5. OEM Market - A number of advantages can accrue from having a portion of DEC's business in the OEM market:
- a. The customer's sales force is an extension of the company's sales force and does active selling of DEC products.

- b. The equipment sold to an OEM customer is repetitive business, thereby making our production and checkout problems simpler.
- c. Customer service is concentrated in one location (in the long run such service may have to be expanded to the ultimate customer, thus removing this as a decided advantage).
- d. The ultimate customer is, in most cases, aware of DEC and in some instances will deal with us directly in future purchases.

At the same time the OEM market has inherent disadvantages that cannot be overlooked:

- a. DEC has less control over the uses and servicing of its products.
- b. The business can evaporate rapidly and cause extreme fluctuations in DEC sales.
- c. DEC can come to depend too heavily on one customer.
- d. The customer may decide to make his own product after several years of buying from DEC.

Taken on balance, however, the OEM market has enough advantages so that DEC should consider this method of entering a market in each of the new market areas investigated.

Even if the OEM sales to one customer last for only a few years, the advantage of multiple sales outweighs the risk of losing the customer. At the same time, the amount of OEM business with one customer ought to be limited to approximately 10% of DEC's annual sales so as to limit the repercussions of cancellations. More important than the exact percentage is the degree to which this interferes with DEC's ability to meet its production, engineering support and service obligations to its regular customers. Thus, before entering an OEM relationship with a customer, DEC ought to assure itself that the total business with this customer will not exceed 10% of annual sales.

6. Foreign Markets - Almost all the areas of application described above also exist in the areas outside the United States. We should develop these for two principal reasons. First, sales in these areas will help to offset government sales of the same products in this country. Second, we may amortize our engineering investment over a larger number of production units. Other technical companies, such as High Voltage Engineering, Electronic Associates, and Foxboro, have significant portions of their sales outside the U.S. (e.g. 25 to 50 percent of their total sales.)

IV. New Product Development

The importance of new product development in the overall growth of DEC cannot be over-emphasized. Today DEC is still selling almost all of the original products that have been developed. Very few have been obsoleted or superceded. If one looks at the sales growth of any particular model, it is most likely to be less than the overall growth of the company. In addition to these observations, we must continually realize that we are in a very dynamic industry where changes occur rapidly. We must continue to aim for short development times to meet market requirements. One of our greatest strengths in the past has been our size and flexibility to make new products on time scales that large companies could not meet.

Our development effort should be regarded as a precious commodity to be used where it does the most good. We are continually tempted to develop one-of-a-kind products requested by specific customers. We should examine all new product ideas including circuits and systems to see if there is any potential for repeat sales. This is a principle which must be administered with considerable care since a major asset we have available for our customers is flexibility to do special things. For example, development of one special module type which permits large sales of our standard modules might very well be worthwhile.

Most of the new DEC products in the past have been developed in response to customer needs and requirements. This is basically very desirable but has one potential pitfall. Those potential customers who are more aggressive and articulate in describing their needs and selling us on meeting their needs may dominate our development capacity. These same customers are not necessarily the most profitable nor representative of an ideal market for DEC. Because of this, we should have a broad application of our new products in mind when we set about developing them. The Sales Department must play an important role in uncovering customer requirements when they are still in a nebulous state. Filtering these requirements and bringing them to the attention of the Engineering Department is a key task.

Specific areas of product development which are underway or need to be started are the following:

1. Modules

- a. VHF Modules - These are needed principally to broaden the line and to extend the applications for which our modules can be used. The initial area of application will probably be in the field of physics for time interval measurements. The sale of these particular modules is not likely to be great in itself but their existence will continue to spur the sale of our standard, less expensive modules for use in systems having both requirements. The technical problems are sufficiently challenging that success will be a technical achievement as well as a market opener. The time involved in this development has considerably exceeded the original expectation and every effort should be expended at completing it in the near future.
- b. Silicon Modules - Recent developments in silicon transistors seem to indicate that they will be significantly less expensive than the germanium types we are now using. Hopefully, they will have other advantages, including better reliability and tolerance to elevated temperature environments. If a new line of modules could be developed using these transistors, thus achieving lower selling prices and the other advantages while preserving DEC normal profit margins, then we should begin an aggressive development program. This is a very serious decision, due to the fact these new modules would not be directly compatible with our existing signal conventions. This program might serve as an ideal vehicle for making other changes to bring our module line up to date. They might also serve as the basis of a new computer design.
- c. Educational Modules - The silicon modules listed above may also serve the educational market. The requirements are principally for lower cost techniques which can be used in engineering departments at universities, and perhaps high schools, to demonstrate logical techniques. This could

be a totally different technical approach if it met the other requirements of low cost and simplicity.

In general, DEC modules have proven highly satisfactory in use. One of the reasons for this is that DEC is a high volume user of these modules. Our own engineers are quite critical of the design and performance of the modules and represent a convenient and forceful feedback from a typical user. No major new improvement has been made in DEC Modules in the last several years and we should be cautious to avoid falling behind in this important bread and butter area.

2. Computer Developments

The market for DEC computers represents the most general and largest of all the future expansion of DEC. Therefore, it should take a significant portion of our new product development work. The three areas discussed below represent major opportunities for improving our product.

- a. Central Processor - One key goal here is to achieve a more capable central processor which can be sold at lower prices without sacrificing profit. Fruitful areas of cost reduction appear to be larger memories, different packaging technique including more functions on a card, lower cost circuits and components, computers which require a lower percentage of sales cost for marketing, etc. We should be very careful to have in mind specific computer applications when we develop new computer systems. The ability to address directly a larger memory certainly should be emphasized in any new design.
- b. Peripheral Equipment - One of the most important new development areas for the computer market is the peripheral equipment. The opportunity for uniqueness lies principally in this area. Central processors will probably tend to look more and more alike in the future, but the peripheral equipment will make the difference. Specific areas that DEC is now active in are enumerated below.

- i. DEC Magnetic Tapes - These are the low cost, high reliability, simplified tape units that were originally developed at Lincoln Lab. They feature fully redundant recording and a drive mechanism involving no capstans or pinch rollers. They may become an effective replacement for punched paper tape in many applications. They also will feature replaceable blocks of information on the tape.
- ii. High Density Magnetic Tape - This type of IBM compatible magnetic tape features 556 or 800 bits to the inch and is rapidly becoming the standard or normal tape memory technique. This is important because it offers high transfer rates of information and offers continued compatibility with IBM installations, a feature which has been important in the past. Initial plans call for use of IBM transport units. Later we will undoubtedly want to have our own electronics in conjunction with a high density tape transport such as Potter, Ampex, Burroughs, etc., in an effort to lower the cost of high density tape for the PDP-1 and PDP-4 Computers.
- iii. Mass Memory - Many new exciting applications of computers are dependent on the existence of large amounts of rather fast access memory. The only current activity at DEC on this is aimed at integration of a Randex Drum into a PDP-1 for Bolt, Beranek and Newman. We should continue to investigate other mass memory devices such as large discs, removeable discs, (such as the IBM 1311), and other techniques of low cost, large volume memories.
- iv. CRT Displays - The area where we have the most significant head start from any other computer manufacturer is in CRT displays. We currently have developments underway for doing the following: automatic line drawing, automatic curve drawing, and incremental operation. These are potentially useful in computer-aided design and hopefully will reduce the amount of computer time required to keep the scope picture flicker free.

In addition, we are beginning experiments in projection systems in order to create a large display on a flat surface. Many of these new developments will require programming support in order to investigate their usefulness. Perhaps some of this can be done jointly with other research organizations like M.I.T.

Another unique area of CRT work is film reading. We should expand the completeness of the system that we can offer in this area to include camera, eyeball, and program sub-routines.

- v. Electro-Mechanical Equipment - In order to offer a complete line of units, we should continue to improve our card reading and punching, low cost line printer, paper tape reader, and typewriters. None of these represent requirements of tremendous importance. However, a continuing development effort in these areas is vital.
- vi. Communication Terminals - We should continue to develop equipment in this area that will work with dataphone, teletype lines, and other communication methods. One major market area could depend on the existence of these techniques. In other applications the availability of good communications equipment may be a requirement of the system.
- vii. Analog-Digital Hybrid Operation - Analog-Digital converters have played a major role in many of our computer systems. We should continue to develop our knowledge of these converters and our hardware capability to build them, due to their importance in our systems. This should include both higher performance units and lower cost techniques, and perhaps even include shaft encoders. Particular needs exist at DEC for analog multiplexers, sample and hold circuits, generally higher precision elements, operational amplifiers, and level shifting techniques.

- c. Software - We must increase the emphasis that we place on computer software developments. Conventional software such as FORTRAN, and perhaps some simple business oriented software, may indeed help our customers justify a multiple use for our computers. In addition to this, we must develop software which makes the CRT display, DEC tapes, and all other parts of our system easy to use. Software aimed at unique areas of application should be considered an important part of developing new markets. Development schedules, specifications, acceptance tests, etc., should accompany software engineering just as it does hardware engineering.

3. Special Systems

We should continually examine our development work on special systems to see if it can be applied to other customers. Our memory testers were at one time a one-shot job. We should also recognize the need for key components which will allow us to go into special systems like memory testers. The transistorized current driver is a prime example of how a key component spurred the development of other equipment.

Some areas that might develop this way are thin film memory testers, PEPR systems for bubble chamber film reading, spark chamber encoding devices, accelerator controlled devices, non-computer process control systems, materials testing electronics (Instron testing machine), etc.

V. Marketing Policies

1. Long-term Customer Loyalty

The major portion of DEC sales has been to established customers. Therefore, marketing activities should be directed toward these customers in order to generate a long term customer loyalty. In essence, this policy means giving former customers priority over new customers. One way to implement the policy is to give preferential delivery treatment to old customers, another procedure is to build special hardware for old customers but not for new customers. Both of these approaches have been utilized with reasonable success.

By maintaining a ratio of one new customer to three old customers, DEC can establish the balance we are seeking. The new customers should not be selected on a random basis. Rather, they should be companies who appreciate high quality in a product and are willing to pay a premium price for it. One way of achieving this kind of selection is by working with the customers in the early phases of the development of his own new products or service. At this time, special hardware or programming help and other technical support will help insure his success and will consequently insure his loyalty to DEC.

2. Applications Capabilities

In fields which obviously are dominated by quality customers, we should start to develop an applications capability. An example of such a field is physics where the customers are quite sophisticated. During the whole process of working with the customer, including selling and servicing, DEC sales engineers should be especially sensitive to the special requirements of each customer. Having applications specialists will increase the company's ability to work effectively with customers and make suggestions which fit his needs.

3. Customer Training

DEC will provide computer customer training in both programming and maintenance. In addition, we will provide on-site technical support for all customers. This support should continue until the customer is capable of operating the computer, special system, or modules by himself; the length of time that this training entails should not be fixed but should depend on that customer's capability.

4. New Markets and Products

Rather than dissipate efforts attempting to sell to all markets, marketing efforts should concentrate in selected fields which should be selected as outlined in Section III-D. In general, though, it may be said that these fields are those in which DEC has some unique competitive advantage.

After a product has been in the field for several years and met wide acceptance, competitive companies will generally build a similar unit. DEC has experienced this in the case of our PDP-1 computer and our system modules. At this point two approaches can be taken. One would be to lower the price to meet the competition, and the other would be to find new applications for the older products. The latter approach is, of course, most desirable and should be the DEC approach.

Our technical capability in the areas of new product development must remain flexible so as to meet our customers' changing needs effectively. This flexibility has been one strong reason why our customers have remained loyal in the past, and will, of course, be a major factor in attracting new customers.

5. Pricing Policy

The pricing policy is straightforward, it is the price which is high enough to permit a quality job to be done and still earn a significant return on our

investment. DEC prices are always fixed prices and not variable or subject to negotiation.

To insure that our pricing meets these requirements, a cost center accounting system is being established. This system should allow marketing expense information to be readily available and broken down by:

- a. Product Line
- b. Major Customer
- c. Warranty
- d. Selling Function (i.e., shows, sales literature, customer service, customer training)
- e. Branch Office

Control of many hidden costs in the selling process, or at least an awareness of these costs, can be of significant value in planning a sales campaign and in evaluating marketing techniques.

6. Information Flow

There are two types of information flow to be considered here: the first is between the customer and DEC; the second is between the Sales Department and the other parts of the Company.

There should be a frequent sampling of customer satisfaction by the officers and senior managers of DEC. This type of sampling should be done separately from a sales trip and should have customer attitudes about DEC as the sole purpose of the visit. Recent trips of this type have been quite rewarding and revealing.

Within our Customer Service Department, a maintenance reporting system has been set up which will, to a large extent, record on a regular basis any customer dissatisfactions.

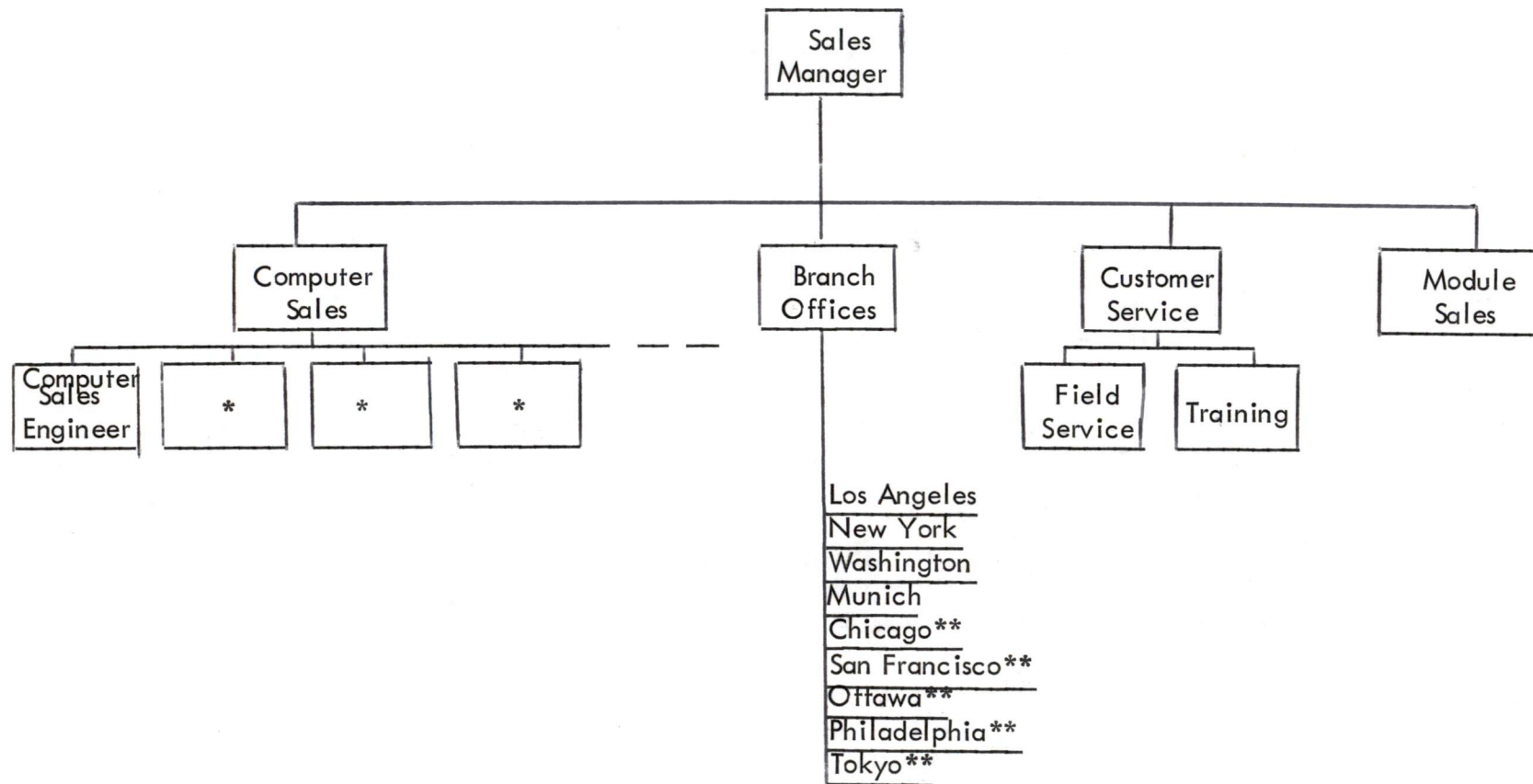
The Sales Department has a very important obligation to inform the Engineering Department and other senior managers of quality and customer attitudes. New ideas are often generated by customers and these should be quickly passed along to Engineering.

VI. Sales Department - Organization and Staff

I. Organization - Four Major Divisions (Chart 1)

- a. The Computer Sales Group is subdivided into a general sales group and into a number of small applications groups, each responsible for developing a specific market area, such as medical and biological research, physics, communications, etc. Each applications group will be responsible for keeping in close touch with its field of specialty by attending conferences related to the field, by visiting specialists regularly and working with them in developing computer applications, and by generally identifying themselves with the field. These applications groups should develop as fields are studied and seen to be especially suitable for DEC.
- b. The Module Sales Group is oriented to applications engineering. In this Group, as in the Computer Sales Group, specific markets may be allocated to individuals. However, the expectation is that Module Applications Engineers will each be flexible enough to cover a number of areas.
- c. All Branch Offices will sell all DEC products. It is expected of course, that individual sales engineers will develop a specialty in particular products. Quite possibly, an engineer in a branch office will also be a member of one of the computer applications groups, especially if the market in that field is concentrated geographically about the branch. The continuity between a customer and a sales engineer is vitally important, and branch office personnel should concentrate on developing close relationships with particular customers. The sequence of establishing new branch offices should remain somewhat flexible so that it can depend on the availability of sales engineers for the branch and on the urgency of serving specific customers in the area.

Basic Sales Organization of DEC



* Application Groups for Specific Markets (i.e., Physics, Medical)
** New Offices to be Established.

- d. Customer Service has the responsibility for field installation and maintenance of computers in addition to providing maintenance and programming courses. It must be kept in mind that the number of field service personnel needed by this group grows cumulatively with the number of computers intalled.

2. Sales Engineers

- a. All sales engineers should have an engineering background and training in order to deal effectively with DEC's technically oriented customers. They should be familiar with all of the company's products before having customer contact, though each individual will tend to develop greater interest and ability in a specific product line.
- b. The training of new sales engineers is critically important to the continued success of DEC. Typically, a new employee will be assigned first to an engineering project, or projects, for a period of 3 to 6 months, depending on his background. This type of training period offers the most direct and effective way to have a newcomer learn the engineering and managerial practices and philosophy of the company. In addition to project engineering, a new sales engineer will participate in the training courses offered to customers.

3. Communications

- a. It is vital to have the branch office personnel in constant touch with the home office and plant so that they are intimately aware of new developments and company attitudes. Just as important is the awareness of the home office of field sales information and customer attitudes. Frequent telephone calls, the Bi-weekly Report, Sales Literature, On-Line, and regular memoranda are all useful in providing this communications link. However, personal contact is essential and regular trips must be made by branch office sales engineers to the home office and vice versa.

- b. Monthly sales meetings will be held in Maynard, generally lasting one day. There should be at least one representative from each branch office (except foreign offices) present at each of these meetings. In addition, representatives from distant offices (e.g., California) should plan to remain in Maynard at least one week since their visits to the plant are less frequent.

VII. Plan of Action for the Next 12 Months

I. Personnel Additions (Refer to Chart 2)

- a. Computer Applications Engineers (CAE)
Four applications engineers will be hired by 1 May 1963.
- b. Module Applications Engineers (MAE)
One new module application engineer will be hired by 1 July 1963.
- c. Branch Office Men (BOM)
Two present DEC sales engineers will be moved to branch office locations and will be replaced by new applications engineers.
- d. Field Service Technicians (FST)
Four new field service technicians will be hired by 1 June 1963, and net increase of two because we expect that two present technicians will move to engineering.
- e. One new technically trained man will be hired for training.
- f. One man for applications and promotion of the CRT displays will be hired.
- g. One man will be hired or transferred to applications training and promotion for laboratory modules (LMM). If a man is selected from the inside he will be replaced by recruiting from the outside.

2. Establishment of Branch Offices

- a. In January the Munich office will be opened with Guenter Huewe taking an active part by May 1st.
- b. A Chicago office will be opened by February 22, with a temporary sales engineer until we hire a permanent man.
- c. By April, the Ottawa office will be opened with a local Canadian as manager.

- d. By June the San Francisco office will be opened probably with Ken Larsen managing it.

3. New Markets

- a. We will establish a formal plan for entry into new markets. Such a plan drawn up by market specialists.
- b. We will establish a rental plan to be used where we wish to encourage a customer in a new market.
- c. Certain areas, such as physics, we will treat as new markets and will organize them in the same manner by having a specialist and a definite plan. The physics group should be started by 1 March 1963.

4. Communications, Information and Training

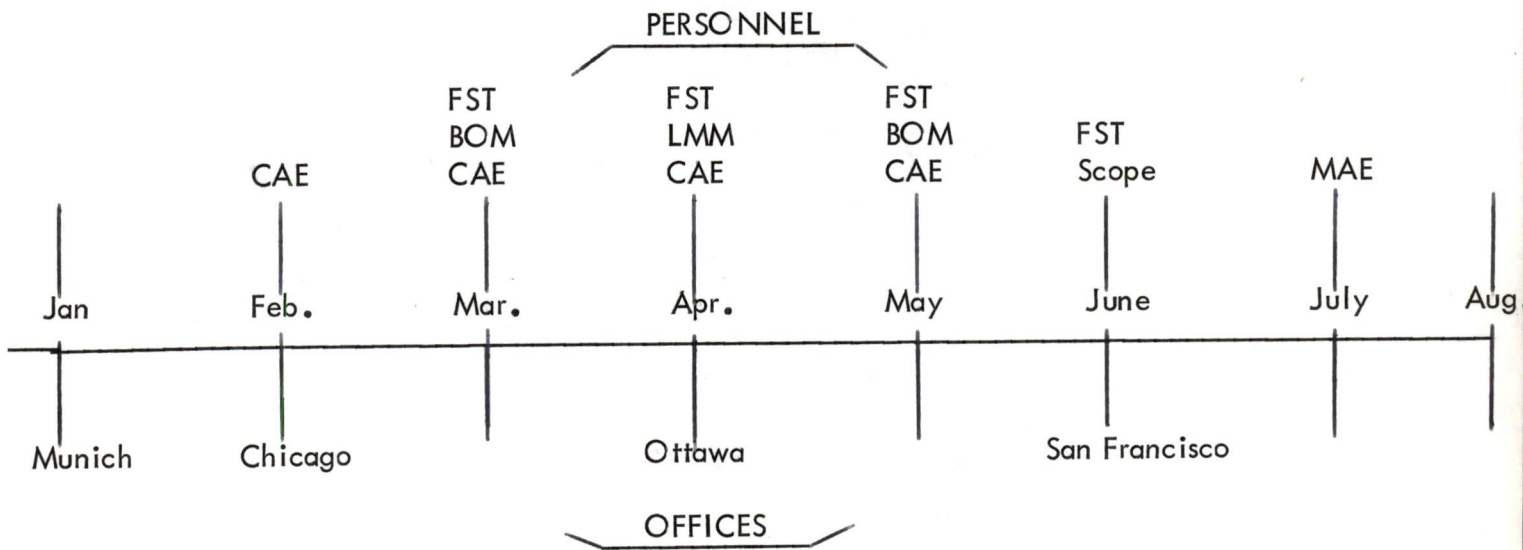
- a. We will install a formal field office maintenance recording system to minimize the communications problem with the customer.
- b. We will control delivery commitments on computer systems by careful quotations, particularly when large engineering content is involved.
- c. We will initiate a job cost system for the sales department for 1963.
- d. We will initiate a plan for one representative of the California office to visit DEC each month.
- e. We will formalize our management review of quality of products and service by planning visits to particular customers at least once every three months.
- f. We will establish a system to allow branch offices to report more information to Maynard, specifically to the Computer Guidance Committee, on possible new products.

5. Specific Hardware Action

- a. The Sales Department will provide the Engineering Department with desired characteristics from a marketing standpoint of the next computer by 1 April 1963.
- b. We will include the Multiply and Divide option in the basic PDP-1 system price.
- c. We will settle on the performance specifications for the new high density magnetic tape system by 1 March 1963.
- d. We will settle price, performance, and promotional literature for DEC tape by 1 March 1963.
- e. Action will be initiated to insure that DECAL is completed and documented by 1 April 1963.

Chart 2

Schedule for New Personnel and Branch Offices



APPENDIX

A. Sales Staff Expansion

Chart 3 is a projection of the number of people required in the various divisions of the Sales Department to assure DEC's growth at the desired rate for the next five years.

B. Financial Aspects

The sales costs, excluding technical publications and advertising, are projected for five years in Chart 3. The projected annual costs are based on maintaining the same ratio of technical sales staff to costs as in 1963. The projection points up the fact that sales costs as a percentage of annual sales will rise for several years before leveling off.

APPENDIX

Chart 3

Total Technical Sales Staff at the End of Each Fiscal Year

	<u>1962</u>	<u>1963</u>	<i>12</i>	<i>New</i>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>
Module Sales	2	3	3	3	4	5	6	7
Branch Offices	4	9	8	12	14	17	20	23
Computer Sales –								
General	2	3	5	6	4	5	6	7
Physics		2	1	1	3	4	4	4
Medical		1	1	1	2	2	2	2
Process Control	1	2			2	2	2	2
Communications		1	1	1	2	2	2	2
Scope Application		2	0	0	3	4	4	4
New Areas					2	4	8	12
Customer Service –								
Field Service	6	10			15	22	30	40
Training	2	3			4	6	8	10
Sales Management	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>5</u>	<u>5</u>
	<i>11</i>	<i>26</i>	<i>22</i>	<i>27</i>	<i>40</i>			
Total Technical Sales Staff	<u>19</u>	<u>39</u>			<u>59</u>	<u>77</u>	<u>97</u>	<u>118</u>
<u>Annual Sales Costs</u>		\$ 700K	\$ 1,180K	\$ 1,640K	\$ 2,100K	\$ 2,610K		
(Based on present ratio of technical sales staff to sales costs)								
<u>Annual Sales Volume Forecast</u>		\$10,800K	\$14,000K	\$18,200K	\$23,600	\$30,600K		
<u>Sales Costs as Percent of Annual Sales</u>		6.5%	8.4%	9.0%	8.9%	8.5%		

January 11, 1963

Prepared for discussion at
Works Committee Meeting
on January 14, 1963

Sales Plan Outline

Assumptions about Company *Principles*

I. Goals and Objectives

The ideas in this sales plan are based on the following assumptions concerning DEC:

- a) Sound growth - Slow and with diversity of customers, products, marketing.
- b) Self financing - Implies sizeable profits and non-explosive growth.
- c) Products based principally on in-house capabilities.
- d) New ventures are expected to return an early profit.
- e) Commercial products principally.
- f) Non-renegotiable business principally.
- g) Develop unique products, technical capabilities and application know how.
- h) Go into markets which are potentially very profitable.
- i) Close customer contact and strong sense of loyalty.
- j) DEC will be a user of its own products (particularly PDP's)
- k) High ethics must prevail throughout the company.
- l) Plans will use current techniques to a large extent.

II. Markets

a) Present DEC Markets

Computer Markets

1. Scientific - Describe a few sales and why customer bought DEC. AFCRL, BBN, ITEK.
2. Communications - ITT
3. Process Control - Foxboro
4. Data Collection - JPL and Beckman
5. Hybrid Analog - Digital - Simulation etc.
6. Physics
7. General - (Miscellaneous)

8. *Universities*

Module Market

1. Government
2. Universities
3. Small Industrial User - *electronics co.*
non-electronics co.

b) New DEC Markets (Some commitment already made, no significant sales.)

1. Medical Research and on line data processing (MGH and BBN)
2. Computer Aided Design (Line drawing scope)

3. *A-D Conversion*
c) Markets to be evaluated

1. Drug Research
2. Automatic Control
3. Printing Business
4. Oceanography
5. Geoscience
6. Hotel and Department Store
7. High Schools
8. Engineering (Small computer for small company concept)
9. Teaching Machine Use
10. Business Applications - (Secondary use perhaps)

d) Market Evaluation Techniques

Before expending time, effort, and money on a new market for computers, DEC must evaluate that market based on the following criteria:

- Generalize*
1. Market Characteristics - What is the most realistic estimate of the total number of computers that can be sold in this market? Over how many years will the sales last? How many organizations are likely to buy a computer? What kind of computers will be needed in the market?
 2. Market Saturation - How many computers have already been sold and how many companies have already committed themselves to a portion of the market? If the competition has already committed itself to cover the market and DEC has nothing unique to contribute, the company should not concentrate its efforts here.
 3. Saturation by DEC - Is this a market which DEC can potentially saturate? If not, what percent of the market could DEC realistically obtain?

MEMO

DATE November 9, 1962

TO Bob Lassen

FROM Win Hindle

Thomas C. Stockebrand will join the company on November 19, 1962, as you know. For the records his home address is 10 Bulkeley Road, Littleton, Mass. Would it be possible to have his badge ready for him on the 19th? (It occurs to me that his last name is long enough so that it might not fit?)

11/9

~~Badge~~

Sign ahead 11/13

DAP 984

Win:
I found this
in my files,
you're a nice guy.
Jm

DEC **INTEROFFICE
MEMORANDUM**

DATE 31 August 1959

SUBJECT West Coast Office

TO Wally Weeton

FROM Ted Johnson

Wally,

I do not have scope leads for my demonstration kit. Would appreciate having these made up and sent out pronto. I am not sure that I particularly like the new Test Equipment power plugs. They do not seem to make it any easier to plug in the individual unit particularly for the first time. I was unable to find anyone at R.C.A. here who had heard of E. S. Warren per your suggestion.

United Research here is considering taking taking on another girl and is interested in sharing her time on a 50-50 basis with me. In view of the demands on the present secretary's time, and my own requirements, I think this might be a good idea. This should go into effect in a couple of weeks and I would like to try this out.

This past week has been a particularly bad time to try to contact anybody. They are either on vacation or too involved. But I have been attempting to make use of the sales contact forms you sent by placing numerous phone calls to the areas of most interest.

On the automobile situation, I plan to get some kind of a car myself, probably this week end. I would like to start receiving payments for transportation beginning September 1, 1959. If it is possible to get an advance for September this would be appreciated.

Ted

Save -

Mellon B-35
Harvard Business School
Boston 63, Massachusetts
19 April 1958

Mr. Harlan Anderson
Digital Equipment Corporation
Maynard, Massachusetts

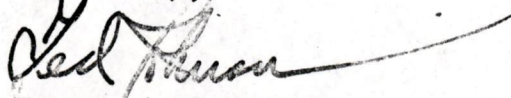
Dear Harlan:

Thank you very much for your letter of 11 April. It has been an interesting and very enjoyable experience to study and consider the problems of your company and I certainly appreciate the time and consideration you provided.

I have enclosed the application form which you sent with your letter. During the coming week, I will call to arrange further discussion of the possibility of employment with you. I regret not having responded sooner to your letter and I wish to express my appreciation of your consideration of me for employment with your company.

I will be looking forward to talking with you on this matter. And I hope that the report provided some measure of interest for you.

Sincerely,



Theodore G. Johnson

History 10-15-20

DIGITAL EQUIPMENT CORPORATION

Maynard, Massachusetts

Subject: Telephone Calls
To: All Personnel
From: Stanley C. Olsen
Date: April 28, 1958

The telephone bill for the month of March for Digital Equipment Corporation came to \$176.42. This is a large telephone bill for a small company. It is suggested that employees minimize long distance phone calls, and those that are made should be kept as short as possible. A phone call to Boston costs 33¢ for the first 3 minutes and 10¢ for each minute thereafter. This means that a 20 minute phone call costs the company \$2.20. It costs 17¢ to put a three minute call to Lexington.

It is assumed that all employees will pay for personal out of town calls. Miss Pontz will take payment for these calls. For expensive calls like those to Boston, one might do well to ask the operator to keep track of the charges.

Signed Stanley C. Olsen
Stanley C. Olsen

Approved Harlan E. Anderson
Harlan E. Anderson

SCO/jef