OFFICE OF THE DEAN
SCHOOL OF ENGINEERING AND APPLIED SCIENCE

WASHINGTON UNIVERSITY
SAINT LOUIS, MISSOURI 63130

July 2, 1965

Mr. Kenneth H. Olsen, President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts

Dear Ken:

The PDP-5 is here and being put into operation. Everyone concerned is delighted with it.

I want to express my personal gratitude for the gift. A more formal expression will be forthcoming in the Fall at some kind of small dedication ceremony to which you will be invited.

Again, many thanks.

Sincerely,

Bill

WILLIAM N. PAPIAN
Associate Dean, Engineering

WNP/t

NCR THE NATIONAL CASH REGISTER COMPANY • DAYTON, OHIO 45409
DATA PROCESSING • ACCOUNTING MACHINES • CASH REGISTERS • ADDING MACHINES • SUPPLIES AND SERVICE

INDUSTRIAL PRODUCTS DIVISION
THE NATIONAL CASH REGISTER CO.
660 MADISON AVENUE
NEW YORK, N.Y. 10021
PHONE (212) 421-0610
1167

June 28, 1965

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

The Industrial Products Division of NCR is making available a number of NCR 310 computers. These computers have been in service for periods of 1 to 3 years and can therefore result in large savings to your company.

In addition to the normal application, these can also be used as a test unit to check out computer peripheral equipment.

Along with this letter, I am sending a specification sheet. This will be helpful to you and others in your organization for evaluating the equipment.

In the near future, I plan to be in your area. Perhaps I could call ahead to see if it would be appropriate for us to get together. Meanwhile, if there are any questions, I would be pleased to hear from you.

Very truly yours,

D. L. Scanlon

D. L. Scanlon
Eastern Regional Sales Manager
INDUSTRIAL PRODUCTS DIVISION

DLS:ly
Encl.

NCR 310 COMPUTER SPECIFICATIONS

The NCR 310 Electronic Data Processing Computer is a desk size, highly flexible, multipurpose, stored program device with data processing capabilities equal to that of many large-scale computers. The large (4,096 12-bit words) magnetic core memory with its high operating speed (60,000 instructions per second) makes the NCR 310 a powerful processing tool. The 310 has a full complement of logical and decision-making instructions, and uses single-address logic for most cases.

A 1,000-character-per-second NCR photoelectric reader for punched paper tape, and a 110 character-per-second paper tape punch are supplied as standard equipment. Optional input-output equipment includes:

1) 24-column Lister

2) High Speed Printer
   680 LPM alphanumeric
   940 LPM numeric

3) High Speed Paper Tape Reader
   600 CPS with supply and take-up reels

The NCR 310 is a parallel, single-address computer. Its 4,096 12-bit word memory has a storage cycle time of 6.4 microseconds. Instructions require from one to four cycles and thus range in execution times from 6.4 to 25.6 microseconds; average execution time for an entire program is approximately 15 microseconds per instruction.

KEVIN McLOUGHLIN
250 PARK AVENUE
NEW YORK, N. Y. 10017

KEVIN McLOUGHLIN has specialized in developing new concepts and techniques for administrative management since 1954, when he joined the Advanced Development Department of International Business Machines Corporation, with the specific assignment to investigate the needs of EDP customers for assistance in this area.

A professional consultant since 1946, he returned to that field in 1959, to provide counsel and instruction in the use of these new principles and methods. He established his own firm in 1961.

From 1941 to 1946, Mr. McLoughlin served as an officer in the United States Navy's Pacific Ocean Fleet. Earlier, he had wide experience in industrial and design engineering, production control and manufacturing. He holds a master's degree in engineering.

His approach provides a new vantage point from which to plan the systematic operation of a business, and promotes greater skill and cooperation in using information and paperwork systems to direct and control operations.

Mr. McLoughlin's approach has been favorably received in both management and technical circles. It is considered by many to be a distinct and much needed step forward in the science of administrative management.

* * *

June 28, 1965

Mr. Olsen:

I am available during July, August and September for short fact finding, review, evaluation, planning, coaching and consulting engagements.

Kevin McLoughlin

MU 2 - 8347

HANCOCK 6-0033

Associated Industries of Massachusetts

2206 JOHN HANCOCK BUILDING • BOSTON 02116

ROBERT A. CHADBOURNE
EXECUTIVE VICE PRESIDENT

June 23, 1965

Mr. Kenneth H. Olsen, President
Digital Equipment Corp.
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

I am most anxious to have a reply to my letter of June 15 which asked for your comments on the chapter on the Massachusetts electronics industry to be used in A.I.M.'s 50th anniversary book for high school students.

Since our deadline is at hand, it would be most helpful if I could have your reply by return mail if possible.

Many thanks.

Sincerely,

Robert A. Chadbourne

Robert A. Chadbourne
Executive Vice President

RAC/ml

FIFTIETH ANNIVERSARY A•I•M 1915 1965

DOCUMENTA

June 23, 1965

Mr. Kenneth Olsen, President
Digital Corporation
Maynard, Massachusetts

Dear Mr. Olsen:

I have been meaning to write you for some time now, but due to an extremely hectic schedule, I have not been able to do so.

I first became acquainted with your company a few years back when I did all the sales promotion and graphic art work on the ADX unit for ITT. At that time I also had the privilege of visiting your facilities and was given the so called "Cooke's Tour".

Needless to say, I was very impressed with your products and your R and D facilities and activities. Since that time I have been engaged in many graphic communications projects for companies such as AT&T, Western Electric, Univac, and many others.

I have watched your company grow and expand rapidly these past few years and therefore feel that there is a necessity for you to develop an effective graphic communications procedure which would properly reflect all the modern technological achievements that your company has been responsible for.

Our services in this area have been previously clarified in detail to your Mr. Atwood, whom I have met on various occasions.

At this point, I would like to present to you some of my basic design philosophies. The main function, I feel, in contemporary communications, is the translation and condensation of ideas or problems into visual forms in such a way as to establish a short cut to understanding. As the complexity of ideas grow and specialized activities increase further, the design functions become more and more important, especially if you consider the new factors of a drastically enlarged range of communication media.

Design is a means of organizing the acquisition and utilization of new knowledge, relating its values to older knowledge, and maintaining control of the fast growing volume of data. This is often referred to as the communications explosion.

It is my sincere belief that the graphic designer in today's society is beginning to and will play a vital growth role in the field of communication.

It is in this area that I would like to carry this discussion further, since the subject is of mutual interest to us.

Looking forward to hearing from you in the near future,

Sincerely yours,

George Rosenfeld

THE THOMSON ORGANISATION LIMITED
Thomson House 200 Gray's Inn Road London WC1
Telex 22269 *Telegrams* THOMSONEWS LONDON WC1 *Telephone* TERMINUS 1234

22nd June, 1965

AIR MAIL

Mr. Kenneth H. Olsen,
President,
Digital Equipment Corporation,
Maynard, Massachusetts,
U.S.A.

Dear Mr. Olsen,

Thank you for your letter. I am, of course, sorry that you do not feel interested in exploring further the possibility of some kind of joint venture here in England. I hope, nevertheless, that on my next visit to the States, probably in 2 or 3 weeks time, it may be possible for me to come and see you.

Yours sincerely,

T. A. Margerison
Scientific & Technical Advisor

HEWLETT-PACKARD COMPANY
1501 PAGE MILL ROAD
PALO ALTO, CALIFORNIA 94304

DAVID PACKARD
CHAIRMAN OF THE BOARD

June 4, 1965

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
Maynard, Mass.

Dear Mr. Olsen:

I appreciated very much the chance to visit with you and see the impressive work which your organization is doing.

I hope you will find the opportunity soon to visit us here in Palo Alto.

Sincerely,

David Packard

DP/mmp

HEWLETT-PACKARD COMPANY
1501 PAGE MILL ROAD
PALO ALTO, CALIFORNIA

DAVID PACKARD
CHAIRMAN OF THE BOARD

May 17, 1965

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
Maynard, Mass.

Dear Mr. Olsen:

Thank you very much for the phone call confirming a visit with you on Monday, May 24th, at your plant in Maynard.

I will plan to arrive at 9:30 am, and look forward to seeing you at that time.

Sincerely,

David Packard

DP/mmp

HEWLETT-PACKARD COMPANY
1501 PAGE MILL ROAD
PALO ALTO, CALIFORNIA 94304

DAVID PACKARD
CHAIRMAN OF THE BOARD

May 11, 1965

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
Maynard, Mass.

Ritz Carlton

Mr. Packard will call Ken the morning of the 24th 9:30

Dear Mr. Olsen:

Following up our recent exchange of correspondence, I hope to be in Boston Monday, the 24th of May, and I would like to stop by for a few minutes to say hello, if that should be convenient.

Yesterday, Mr. Kenneth Sinclair, who is a director of our English subsidiary, visited me in Palo Alto. He is looking into computers to be used in the automation and control of the British Sugar Industry, and I suggested he might find it beneficial to see you when he is in Boston next Monday, May 17th. He will call you or your secretary when he arrives.

Sent Mr. Sinclair literature on all computers, FLIP CHIP catalog and A-D cat.

Sincerely,

David Packard

DP/mmp

cc: Mr. Kenneth Sinclair

April 14, 1965

COPY

Mr. David Packard
Chairman of the Board
Hewlett-Packard Company
1501 Page Mill Road
Palo Alto, California 94304

Dear Mr. Packard:

We feel quite flattered to hear of your interest in DEC and would very much like to meet and talk with you. I have heard many nice comments about your company, and I plan to take advantage of your invitation to visit you the next time I am in the area.

I would like to extend an invitation to visit us the next time you are at the Sanborn Company. We are just ten miles out from Waltham.

We see our immediate plans and goals quite well laid out before us, and are not now interested in considering making corporate ties, but we would like to get to know you and your colleagues better and I will take advantage of your invitation.

Sincerely,

Kenneth H. Olsen

KHO:ecc

HEWLETT-PACKARD COMPANY
1501 PAGE MILL ROAD
PALO ALTO, CALIFORNIA 94304

DAVID PACKARD
CHAIRMAN OF THE BOARD

April 2, 1965

Personal & Confidential

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
Maynard, Mass.

Dear Mr. Olsen:

During the past few years the Hewlett-Packard Company has become involved in a number of minor ways in the field of digital data handling and data processing. This has largely been in the area peripheral to computers. Over the last year our work in these areas has been considerably increased, and we anticipate this will be a major activity for our company in the years ahead.

In the course of this program our people have been working with your organization in a few areas and we have some of your equipment involved. This first-hand experience has added to the general consensus, which we hear from other sources, that your organization is doing an outstanding job.

It occurred to me that it might be useful for us to explore the possibility of further cooperation, or other involvement with your organization, and I am writing to ask whether you might be willing to discuss this subject with me at some mutually convenient time.

I think it might be most helpful for you to visit our facility here in Palo Alto to see some of the things we are doing, and if that is not convenient, I can stop in and visit you in Maynard some time in the near future.

If you are interested in such a discussion I hope you will let me know the next time you are in the Palo Alto vicinity, and in the meantime, I will call you the next time I am in the Boston area.

Sincerely,

David Packard

DP/mmp

SHARP & OUGHTON INC.
Management Consultants

510 GREEN BAY ROAD
KENILWORTH, ILLINOIS
ALPINE 6-1500

June 4, 1965

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

For the past several years we have become increasingly aware of the problems faced by organizations which manufacture teaching aids, audio-visual devices and related materials for use in the field of education and training. Some of the questions raised by executives of firms producing such equipment and materials - both large and small - have been:

"How rapidly will the school market for overhead projectors and transparencies mature?"

"Through what avenue can I reach the pre-school market with my product?"

"How significant is the trend toward teacher generation of visuals vs. packaged materials?"

"What will the military need be in five years and how can I go about participating in this area?"

"Whom must I reach to sell into the industrial training market?"

"What impact will the new teaching methods, equipment and materials have on my traditional sales?" and so forth.

These represent only a small sampling of the questions which have been raised - both by those who are currently producing equipment and supplies for the education and training market and those who view this market as one offering significant prospect for future profitable diversification. These organizations are in need of well-documented, thorough and objective information and analysis in order -

. to have a realistic basis for the planning of products,

- to determine how best to market their products, and

- to provide a sound, objective basis for forecasting the return on invested capital and the timing thereof.

In response to these requirements Sharp & Oughton is undertaking a major, far-reaching research program whose objective is to provide the type of carefully collected and analyzed information upon which sensible, businesslike profit planning can be based. Because of the magnitude of this undertaking we are offering sponsorship of the program to a number of interested organizations at a most nominal fee. Further, because the education and training market is not homogeneous and because some organizations can realistically only participate in portions of it, we have divided the market into eight basic sub-markets - with your organization able to co-sponsor the research incident to only those sub-markets in which you may have particular interest.

Enclosed for your review and consideration is an outline which describes the nature of this research program. May we recommend that you give it your thoughtful examination. The road to profitable participation in the educational and training market requires sound planning - planning that must, at a minimum, be based on authoritative fact and interpretation. This program is designed to provide such required information.

Should you have any questions or comments, please do not hesitate contacting us. We look forward to being of service to you.

Sincerely yours,

David Marder

SHARP & OUGHTON

David Marder/f

C-Maynard
Bob Hansen

Taken care of 6/16/65
by Bob Hansen

TOWN OF MAYNARD

FIRE DEPARTMENT

NASON STREET

MAYNARD, MASS.,

June 2, 1965

Digital Equipment Co.
Main Street
Maynard, Massachusetts

Attention: Mr. Olsen, President

Dear Mr.Olsen:

Would you kindly arrange a time convenient for you to sit down and discuss the problem of summoning a few of your employees from their work to attend to their duties as volunteer firemen. I shall be happy to try to be available anytime at your convenience.

This problem has come to a head as of Thursday, May 27th. We had a box alarm for a dwelling house at 7:50 A.M. Two of your employees are also volunteer firemen and were delayed about an hour getting to work. One was criticized by his supervision and the other was not.

The names of your employees are Thomas Hinds and William Primiano.

I am sure you realize that your fire protection rests largely with such volunteers and without the department your insurance would be much higher. On the other hand if we were to rely entirely upon full time firemen, our taxes would be much higher.

I am sure this matter can be solved by a discussion. We will do our utmost to release these men as soon as possible from any fire.

Yours very truly,

Philip A. Wilson

Chief Engineer

PAW:MTP

P. N. WEHR, JR
RED SPRING COLONY
GLEN COVE, NEW YORK 11542
516 ORIOLE 1-1652

Digital Equipment Corp.
Maynard, Mass:

Trip to Maynard for discussion of employment as Company Treasurer:

Air Shuttle,	5/19/15	$30.00
Hertz Car		14 94
Parking, La Guardia		2.50
Tunnel and Turnpike tolls		2,00
		$ 49.44

P. N. Wehr, Jr.

Invac Corporation

Cordially Invites You to An

Open House

Thursday, June 10th, 1965

Nineteen hundred and sixty-five

From ten o'clock in the morning

to four o'clock in the afternoon

26 Fox Road

Waltham, Massachusetts

Luncheon

12:00 to 2:00 o'clock

Arrived 7:20 6/7/65

VAN DYCK ASSOCIATES DIVISION OF VAN DYCK CORPORATION **SOUTHPORT, CONN. 06490** AREA CODE 203 **259-5253**

Dear Ken:

I was just given a review of the photo survey and graphic analysis which Don Gove and Paul Rawson presented to you last Wednesday. I felt it left little doubt that a well administered and coordinated identity program would pay off handsomely for you over the years.

Within the next few days we shall submit a proposal on a corporate identification system for your consideration. It is my personal conviction, Ken, that a program of this nature would be most timely and would offer many basic economies and assistance in your future sales strategy. Best of all, though, it most likely will be self-liquidating.

Many, many thanks for your generous loan of the PDP-8. It was the focal point of our Open House displays. In fact, when asked to pose for press photographs, we used the PDP-8. I'm enclosing a rather poor Xerox of the shot which appeared in the newspaper.

We'd love to have you stop in for a visit when in the area.

Warmest personal regards.

Kenneth Van Dyck

To: Mr. Kenneth H. Olsen, President
Digital Equipment Corporation

KVD/W
Enc.

26 May 1965

VAN DYCK ASSOCIATES SOUTHPORT, CONN.

'Open House' at New Building

Post photo—Brinsko

More than 300 persons attended the open house celebration and 10th anniversary observance last night at the new Van Dyck corporation building, Center street, Southport. Paul Rawson (left), the firm's vice president, and Kenneth VanDyck, president, explain a new Digital Equipment corporation desk top computer to John Orr Young (right), co-founder of Young and Rubicam, advertising.

BRIDGEPORT POST Saturday May 15, 1965

FOR FURTHER INFORMATION CONTACT DON GAMACHE: 203/259-5253

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

5/28

Win –

Ken wants to know if you'd like to play golf Wed. afternoon.

Elsa

Elsa: He was joking we should send the card back with a polite no thank you

6/1 Ken said he was not kidding but agreed to say no. Win

THE NASHAWTUC COUNTRY CLUB

BOX 101, SUDBURY ROAD, CONCORD, MASS.

TEL. 369-6055

May 24, 1965

Mr. Kenneth H. Olsen, President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

You, and one of your associates, are cordially invited to participate in the Nashawtuc Country Club Industry Day to be held on Wednesday, June 16, 1965.

Our Program will consist of golf, with tee off time at 12:00 Noon, a Reception will be held after golf from 4:00 P.M. to 6:30 P.M.

If you find that you are unable to play golf, we would still like to have you attend our Reception.

The Nashawtuc Country Club is indeed proud of its new Club House. We are anxious for the industrial leaders in our neighboring communities to be our guests for the day.

For golf, we will be able to accommodate only the first seventy two-somes who accept this invitation. All others will still be most welcome at the 4:00 P.M. Reception.

Sincerely yours,

Gerard R DeNapoli

Gerard R. DeNapoli

HENRY H. CARLISH
415 CLAREMONT AVENUE
MONTCLAIR N. J.

744-5638

May 23,1965

Mr. Ken Olsen, Pres.
Digital Equipment Corp
Maynard, Mass.

Dear Mr. Olsen:

It has come to my attention you may be interested in acquiring a chief financial officer to supplement your rapidly growing organization.

In the event such interest exists on your part, I would like to submit my own qualifications for such a controller/treasurer function.

As the attached resume indicates, I am a mature, highly experienced financial executive and knowledgeable in the dangers and pitfalls of the Electronic industry, and its many branches over my adult business life.

For the past 2--3 years I have been actively engaged in management and reorganization work representing banks, finance cos., and SBIC's.

I am currently engaged in such a consulting assignment in your area in Braintree, for the next week or two, and would be available for discussion, if you are so inclined. (848-3600)

By coincidence, I have recently had intimate experience with an allied phase of the analog, computer industry and its engineering, lead time, and product development problems and the associated financial problems are no stranger to me.

Believe me, there is very little I do not know relating to the development, personnel, procurement, administration,financing and cost control problems in this industry.

Perhaps you do or do not have need of such a function in your organization, but I am sure a personal discussion would be a fruitful one.

Yours very truly

Henry H. Carlish

HENRY H. CARLISH

415 Claremont Avenue
Montclair, New Jersey
744-5638 (201)

CONTROLLER - TREASURER

* *

... Certified Public Accountant with over 25 years experience as Controller-Treasurer and Administrative Accountantant for large volume multi-division manufacturing companies, national distributing and selling companies, and a large chain store retailer-merchandiser discount operation.

... Hard driving, efficient shirt-sleeve executive adept at handling personnel conflicts, financing problems embracing fields of banking, government and equity financing, factoring, and collateral financing, and industrial and commercial trouble-shooting.

... Record of community leadership, persuasive, firm, articulate, and able to obtain maximum effort on cordial basis with people at all levels.

... Thoroughly experienced in governmental liaison and familiar with all phases of procurement, negotiation, ASPR regulations, administration of contracts, government financing, and pit-falls to avoid. Professionally competent in forecasting, budgeting, office management systems and procedures, machine and EDP accounting, management reports, cost accounting and related accounting and treasurership functions

R E S U M E

* Controller-Treasurer for manufacturers of electronic components and end equipment under sub and prime contract

1962-1964 Ortho Industries, Paterson, N.J.
Hill Electronics, Mechanicsburg, Pa.

Engaged to reorganize internal cost controls, financing and management procedures on behalf of stockholder interests with view to eventual disposal to other interests. Varied multi-division manufacturers of electronic components and assemblies for leading national contractors and government agencies. Activities covered all phases of cost, overhead control, banks, customer/vendor relations, and management reporting and accounting.

* Controllership experience for multi-million-dollar manufacturer of electronic and electro-mechanical components:

1955-1962 Globe Industries, Inc., Belleville, N. J.

This company has total sales in excess of $12,000,000. As CONTROLLER of the Electronics Division, which manufactures sophisticated electronic communications and test equipment for the Air Force, Navy, Signal Corps, etc., have had a wide range of supervisory and liaison experience.

* Experience in governmental liaison and related finance, accounting, systems and procedures:

Have engaged in all phases of procurement, negotiation, production and administration relating to governmental contracts and sub-contracts. This has included:

- Bank and government financing, submission of progress payments, negotiation of rates, processing of R&D claims, pricing, cost controls.

1942-1955 Fada Radio Electric Co., Inc., Belleville, N.J.

As CONTROLLER-TREASURER of this company (prior to the purchase of the Government Division by Globe Industries, Inc.,) had broad experience in connection with the manufacture of approximately $10,000,000 annual sales of electronic equipment, 40% of which was military.

In addition to other duties, negotiated provisional and final burden rates on government contracts, supported all pricing formulas, administered R&D claims, financing and payment requests and contract changes.

For this and the above company, have become thoroughly experienced in the complexities of governmental accounting systems, procedures, negotiation, renegotiation, budgeting, etc.

* Fully experienced in all corporate accounting systems and procedures, etc.:

For the above companies, have had the gamut of accounting and treasurership experience: accounts receivable and payable, financial reports, budgets, state and local taxes, cost controls, personnel administration, cash flow, sales forecasts, credits and collections, bank liaison, corporate reorganization activities, maintenance activities involving plants as large as 200,000 sq.ft., machine and EDP accounting.

* Fully experienced with chain store operation:

1933-1942 Vim Electric Co., Inc. (Vim Radio)

This is one of New York's largest chains of radio, TV and appliance stores with sales volume exceeding $15,000,000.

As CONTROLLER, supervised 75 in office and warehouse, was responsible for all systems and procedures, credits and collections involving installment sales, etc., credit chain store accounting for inventories, payrolls, commissions, overhead, etc.

* Education and accounting experience:

NEW YORK UNIVERSITY - Graduate, Bachelor of Commercial Science with major in Accounting.

Certified Public Accountant, New York.

Had 4 years experience with J. W. Baer, CPA's, as Junior and Senior Accountant.

* Community activities:

President of Community Council; member of local fund drives - Mental Health, Heart, Cancer, etc. Active leadership in religious and charity organizations.

* Personal data:

52 years old, U.S. citizen, married, 2 children, own home and car, free to relocate and engage in limited travel.

References on request.

THE COURTESY OF AN INTERVIEW WOULD BE APPRECIATED.

Conover-Mast Publications, Inc.
205 East 42nd Street / New York, N.Y. 10017 / (212) MU 9-3250

May 7, 1965

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
Maynard, Massachusetts 01754

Dear Mr. Olsen:

On June 1st, some of the senior members of the staff of INTERNATIONAL SCIENCE AND TECHNOLOGY will conduct a conference in Boston on Communicating with Technical Men. I would like you to be my guest at this conference.

Let me say something about why we are holding this conference. Our company began publishing its interdisciplinary magazine for the technical community more than four years ago. Since then, its staff has had a chance to learn a great deal about effective ways to interest and to influence this important -- and difficult -- audience. My thought is that management men in sales, marketing, and advertising will find it worthwhile to hear something of what our people have learned. At the conference, therefore, members of the editorial and business staffs of the magazine will describe the communications techniques which have proved most useful in their work. Many of the techniques I believe, can be applicable to communications problems in marketing.

I am enclosing a formal invitation with the detailed facts about the conference. Since we have to limit the attendance, I would appreciate early word on whether you can join us; there's a reply card attached.

Incidentally, we will hold similar conferences in other major cities. In case it is more convenient for you to attend in another city, there's a list of other conference dates on the back of the invitation. When you return your card, simply let us know if you'd prefer another city.

Sincerely,

B. P. Mast, Jr.

B. P. Mast, Jr.
Chairman of the Board

May 7, 1965

Mr. Kenneth Larsen
Digital Equipment Corporation
2450 Hanover
Palo Alto, California

Dear Mr. Larsen:

During the month and a half that we have been attempting to use the PDP-4 Computer, we have been unable to perform any useful task. A combination of machine malfunctions and lack of information as to the use of the programming packages has rendered the system useless.

During that time, several of us have spent our efforts toward attempting to discover the intent of the programs supplied by Digital Equipment Corporation. We have found that the almost complete lack of documentation, coupled with ambiguous operating instructions, has made our job so far unsuccessful. Our difficulties not only apply to the Fortran package, but also to the floating point package and the arithmetic subroutines. Little problems such as the extended assembler not really being extended have been small, but annoying.

This project is spending Government funds which have been designated to advance man's knowledge of physiological processes. It is neither our intent, nor that of the National Institutes of Health, to assist the Digital Equipment Corporation in preparing programming packages which satisfy the specifications we have read in your advertising brochures. My experience with DEC programs at Livermore should have been an indicator of the type of problems we would develop by leasing this system, but the improved quality of the manuals gave me false assurance.

Most of our work is now being performed on IBM machines at several installations in the Bay area. The growing responsibility which the Data Facility has to the medical investigators in the Institute is requiring us to purchase blocks of service bureau time.

Therefore, I find it necessary to request that the Digital Equipment Corporation terminate our lease agreement on May 21, 1965, unless we are able to do useful work with the Fortran package, the extended assembler, and the floating point routines. We have selected this date as it will mark a one month effort by the DEC programming staff to de-bug and document the Fortran programs.

I want to thank you for all of the help which you and your local office have given to us, and especially the excellent maintenance service which we have received. I hope that you will find it possible to convince the Maynard people that adequate documentation of programs with flow diagrams, commented listings and directions for customer use, are as important to the success of DEC as providing excellent hardware.

Sincerely,

RESEARCH DATA FACILITY

Jerome A. G. Russell, Director

JAGR:acb.
cc: Mr. Ken Olsen- DEC, Maynard, Mass.

Copies sent to Rod Belden
Les Hartman
Dave Fellows
Jack Ridgway
Nick Mazzarese
Win Hindle
Mort Rudermann

on May 11 ecc

99 Pleasant Street
Cambridge, Massachusetts 02139

May 4, 1965

Mr. Kenneth Olsen, President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Ken,

Thank you for the time you took with me yesterday to discuss DEC. I have asked Elsa for another appointment to obtain more information on the following subjects:

Ken - Fri 3:00 Elsa

DEC's future in applications programming (beyond a basic software package).

The function of the Sales Department--the criteria of their success and what their duties in DEC are.

How further growth and broadening of DEC's product line will effect the ideals of loose organization.

How DEC's growth can be limited, if necessary.

The goals for DEC's future; the criteria used in shaping long-range decisions.

I shall be anxious to talk with you again soon.

Sincerely yours,

Martin V. Thomas

Martin V. Thomas

MVT:jf

INTERNATIONAL
SCIENCE AND
TECHNOLOGY a Conover-Mast Publication / 205 East 42nd Street, New York, N.Y. 10017 / MUrray Hill 9-3250

May 3, 1965

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

Enclosed is the edited version of what transpired during that most interesting March afternoon in our conference room. It's scheduled for publication in our July issue which, as I feared, means I must ask for any corrections by Monday, May 10th, as it goes to the printer shortly thereafter.

If you can mail this back to me by the weekend we'll be in good shape. Please try and avoid any changes that affect length by more than a fewlines since we've got the traditional editorial problems there too!

Thanks again for your cooperation.

Cordially,

Michael F. Wolff

Michael F. Wolff
Associate Editor

P.S. Please also try and avoid changes in language that would cause us to lose the present conversational tone.

Returned 5/7/65

April 30, 1965

Mr. Kenneth Olsen, President
Digital Equipment Corp.
146 Main Street
Maynard, Mass.

Dear Mr. Olsen:

I am sending to you, under separate cover, a copy of my thesis titled, "The R & D Entrepreneur: Personality and Profitability". I would like to take this opportunity to thank you once again for your kind help which made this research possible.

Since after graduation, June 11, 1965, I expect to return to the world of business, I am enclosing my resume in the hope that either you or someone known to you may be seeking the services of someone with my interests and background.

Best wishes for much continued success.

Sincerely,

Harry Schrage
23 Oxford Circle
Belmont, Mass.

HS/ps
encl.

THE R & D ENTREPRENEUR:

PERSONALITY AND PROFITABILITY

by Harry Schrage

Submitted to the Alfred P. Sloan School of Management on May 5, 1965, in partial fulfillment of the requirements for the degree of Master of Science, Industrial Management.

This study seeks to determine whether the more successful R & D entrepreneur perceives some areas of his business environment more veridically than the less successful one. It further attempts to find the relationship between some other aspects of the entrepreneurial personality and perceptual veridicality.

Success was defined as profitability because only through profits can the entrepreneur realize any or all of such goals as growth, ever increasing technical competence, continued satisfaction of his employees, or fame. No a priori assumptions were made regarding which areas of the business environment must be perceived veridically; this was treated as a research question.

The entrepreneurial personality was taken as a composite of that described by David C. McClelland in "The Achieving Society" and by Collins, Moore and Unwalla in "The Enterprising Man". Achievement was drawn from the former as a source of motivation common to entrepreneurs and anxiety was found in both models as another relevant personality variable.

Twenty-two Presidents of young R & D companies located near Boston, Massachusetts, served as subjects; each revealed the financial history of his company and submitted to two hours of interview and tests. The manifest objective of the interview was to obtain information on the history of each company and its current position. The underlying objective was to determine the respondent's mode of dealing with information about his company from such sources as his board of directors, his banker, customers, employees, etc. The McClelland version of the Thematic Apperception Test was used to measure achievement motivation. The Alpert and Haber Achievement Anxiety Test was adapted to measure each subject's awareness of his debilitative and facilitative responses to anxiety inducing situations.

Results revealed a statistically significant relationship between profitability and veridical perception of customers and employees. No significant relationships between profitability and veridical perception of other areas of the business environment were observed.

Achievement motivation related significantly to the magnitude of profits or losses, i.e., subjects with high achievement motivation were very successful or unsuccessful, whereas those with low achievement motivation tended to run slightly profitable or slightly unprofitable enterprises. It is felt that this relationship is due to the highly achievement motivated individaul's persistence in continuing along either

sound or unsound lines, the difference between these being accounted for by perceptual veridicality.

Results of the modified Alpert-Haber Achievement Anxiety Test revealed significant positive correlation between Achievement Anxiety and both veridical perception and profitability. Two explanations may apply. One possibility is that the entrepreneur may respond constructively to the stimulus of anxiety. A second possibility, the one favored by the author, is that persons high on self-reported debilitative anxiety may be, almost by definition, high on veridical self-perception or sensitivity to self. Subjects high on both veridical perception of employees and customers and sensitivity to self were found most likely to be successful as R & D entrepreneurs.

Thesis Advisor: Professor David E. Berlew

Title: Assistant Professor of Industrial Management

RESUME OF: Harry Schrage
23 Oxford Circle
Belmont, Massachusetts

Phone: Area Code 617 - 489-1710

PERSONAL: Age: 37
Height: 6'0"
Weight: 175 lbs.

Marital Status: Married - Two children

United States Citizen

EDUCATION: 1965 - M.S. Industrial Management
Massachusetts Institute of Technology
Sloan Fellow, 1964-65 (Self sponsored)

1950 - B.S. Mechanical Engineering
University of Wisconsin
High Honors
Tau Beta Pi
Pi Tau Sigma
John Morse Scholarship

EXPERIENCE:

1960-1963
Title: Vice President, Manufacturing
Duties: Directed seven managers: Production, Plant Engineering, Industrial Engineering, Production Control, Industrial Relations, Style and Design, Development and Control Laboratory. Total of 800 employees.
Industry: Manufacture of rubber and canvas footwear
Location: California
Reason for leaving: Company sold.

1951-1960
Title: President of two companies
Industry: One company manufactured cotton textiles, from bale to finished goods. Other company manufactured rubber and canvas footwear. Total of 700 employees.
Location: Matanzas, Cuba
Reason for leaving: Both companies confiscated by Cuban Government

c.c. K. Olsen,
K. Anderson
S. Olsen
N. Mazzarese
Gerry Moore.

27th April, 1965.

JL/HC

Mr. Hugh Osborne,
Manager - Memory Systems,
Messrs. I. C. T. Ltd.,
I.C.T. House,
Putney,
LONDON S.W.15.

Dear Hugh:

We were very pleased that you were able to come to Reading to discuss our DECtape in more detail. I hope the additional delay of about a week will not be too much of a problem for you. Mr. Olsen is keenly concerned that we arrive at a proposed system which is technically able to meet your requirements and in addition a sound economic proposition for you.

I am sure Mr. Olsen will have the details off to you shortly after his return to Maynard. In the meantime if there is any further way in which I can be of assistance to you in Reading please be sure to 'phone me.;

Looking forward to being of further service.

Yours sincerely,

JOHN LENG
Manager, DEC(UK) Ltd.

LOGIC
DESIGN CO.
P.O. BOX 3036
BERKELEY 5, CALIFORNIA
(415) 849-0315

LOGICAL DESIGN
DIGITAL CIRCUITRY
DIGITAL SYSTEMS

20 April 1965

Kenneth H. Olsen, President
Digital Equipment Co.
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

I am enclosing a brief semi-technical description of an electronic desk calculator developed by my company. Since we are not a manufacturing firm, I am interested in selling the rights to someone who is capable of manufacturing the device.

I would like to have your assistance in directing the enclosed information to the appropriate parties in your firm so that we can arrange a demonstration on the working model of the calculator and exchange other information you will require to properly assess the unit.

Sincerely yours,

Thomas E. Osborne

Thomas E. Osborne
LOGIC Design Co.

encl

LOGIC Design Company, a firm in Berkeley, California specializing in logical design and digital circuitry, has developed a solid state, floating point electronic desk calculator intended to sell in the $1600 to $1800 range. The machine employs a random access core memory to achieve a five millisecond addition time and fifty millisecond multiply and divide times. The unit weighs twenty-five pounds and is approximately six inches high by ten inches wide and fifteen inches deep. The low power consumption of 25 watts is a by-product of the unique type of logic developed by the company.

A modified parenthesis free arithmetic notation allows most arithmetic expressions to be solved without transferring intermediate results between arithmetic registers. For problems requiring auxiliary storage and for storing constants, an expandable auxiliary storage area has been incorporated into the system.

A new packaging technique all but eliminates the interconnection problem common to logic systems. The diode gate resistors used in the logic circuits are all the same value allowing automatic component insertion equipment to operate efficiently. The system uses silicon transistors throughout. Either germanium or silicon diodes can be used in the logic gates. Germanium diodes were used in the prototype system. The system has been designed using modular techniques so that integrated circuits can be directly substituted for discrete component logic circuits when the price warrants such a change.

The system is designed to operate over a 15°C to 55°C temperature range with $\pm$ 10% variations in supply voltages and component values.

Servicing the calculator is accomplished with a special testing unit. The capabilities of this inexpensive unit were demonstrated when the prototype was debugged without the use of any other test gear. Location of faults is greatly aided by the method used to describe the system's logical design.

1915-1965

THE BOSTON PARTNERS

OF

LYBRAND, ROSS BROS. & MONTGOMERY

REQUEST THE PLEASURE OF YOUR COMPANY

AT A RECEPTION AND DINNER

CELEBRATING

THE FIFTIETH ANNIVERSARY

OF THE OPENING OF THE FIRM'S BOSTON OFFICE

ON WEDNESDAY, THE TWELFTH OF MAY

NINETEEN HUNDRED AND SIXTY-FIVE

AT HALF AFTER FIVE O'CLOCK

SHERATON-BOSTON HOTEL

PRUDENTIAL CENTER

BOSTON MASSACHUSETTS

attd no
4.29.65
ccc

MICROWAVE ASSOCIATES, INC.

BURLINGTON, MASSACHUSETTS

April 19, 1965

Dear Mr. Olsen:

There has been a significant change in the implementation of development plans for the DeCordova & Dana Museum in Lincoln. A separate building to be located on newly acquired acreage is being designed. The scope of the Museum's activities will be materially affe c ted by the planned addition.

I am having a small luncheon with several supporters of the Museum and community leaders in the Arts to outline and discuss these developments. This will be at the DeCordova Museum (third floor), on Friday, May 7, at 12:30 p.m. We will adjourn no later than 2 p.m.

I hope you can join us and would appreciate word as to whether this date fits your schedule. (Phone 272-4701).

Sincerely yours,

Dana W. Atchley, Jr.

Mr. Kenneth H. Olsen
Digital Equipment Corporation
Main Street
Maynard, Massachusetts

GERMAN AMERICAN CHAMBER OF COMMERCE
INCORPORATED

666 FIFTH AVENUE
NEW YORK, N. Y. 10019

TELEPHONE: JUDSON 2-7788
CABLE: GERAMECHAM NEW YORK

April 13, 1965

Mr. Kenneth Olsen
President
Digital Equipment Corp.
Mainard, Mass.

Dear Mr. Olsen:

Thank you very much for your inquiry regarding the

Hanover Fair 1965
April 24 - May 2.

We are pleased to send the following material:

(1) General brochure(s).

( ) Specialty brochure(s).

(1) One preliminary catalog(s) under separate cover (complimentary with the purchase of a ticket of admission or $1.00 each if ordered separately.

(1) One ticket(s) at $1.50 each, number(s) #59,871. Your earliest convenient remittance will be greatly appreciated. Checks should be made payable to the order of "German American Chamber of Commerce, Inc.".

paid in cash 5/14/65 rec

( ) Room reservation form(s), which should be sent directly to Hanover as soon as possible. Please refer to the accompanying fact-sheet: "Accommodations in Hanover".

Information or material which you may have requested but that is not yet available will be sent to you as soon as possible.

We again wish to thank you for your interest. We are at your continued disposal for whatever additional information you may require. Do not hesitate to contact us if you should have further questions.

Sincerely,

GERMAN AMERICAN CHAMBER OF COMMERCE, INC.

H. Walter Hachenburg/bg

H. Walter Hachenburg

HWH/bg

TEXAS INSTRUMENTS
INCORPORATED

31-A WASHINGTON STREET • CEDAR 7-9750
WELLESLEY HILLS 81, MASSACHUSETTS

April 9, 1965

Mr. Kenneth Olsen, President
Digital Equipment Corp.
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

On the 25th of January Al Nelson, Mike O'Neal and myself spent an afternoon with you discussing the Semiconductor Industry, new products from TI and Digitial Equipment's semiconductor requirements.

At that time you expressed interest in visiting our facilities in Dallas to review some of the new products and technologies which TI is presently engaged in. With the IEEE Show now past we feel that it would be an opportune time for you to make such a visit.

We would propose to have a technical presentation made by our Silicon Small Signal product group covering new discrete silicon devices. Also, if you are interested, we could review Integrated Circuit developments with our people in that product area. We have talked to both groups about DEC and about your interest in a visit to our plant and with two or three weeks notice a product review with both these groups could be set up.

I would like, therefore, to take this opportunity on behalf of the Management of our Division to invite you and any other DEC personnel to visit Dallas at a date convenient to you. A suggested date would be the first week in May. If there are any other specific areas you would like to cover, please give me a call and we can set that up also. We'll be anxious to hear from you.

Yours truly,

Donald F. McGuinness
N. E. Region Manager

DFMcG/sp

EDGERTON, GERMESHAUSEN & GRIER, INC.
CROSBY DRIVE
BEDFORD, MASSACHUSETTS 01730

ALEXANDER M. CLARK
VICE PRESIDENT & GENERAL COUNSEL

April 9, 1965

Mr. K. H. Olsen
Digital Equipment Corp.
12 Maynard Mill
Maynard, Mass.

Dear Mr. Olsen:

Political forces in Washington understand one thing -- the voting strength of numbers of people. That is why I am writing to you.

I'll appreciate it greatly if you will grant a personal interview to Mr. Armand Delisle, special representative of the Chamber of Commerce of the United States in this area. He will be calling at your office in a very few days. I make this request as a member of the Membership Committee of the National Chamber.

The National Chamber is the world's largest business organization, but it should be even larger to do the job business wants done. We can do something about this -- and thereby "take charge" of the man-made problems facing business and the nation.

You should be a member of the National Chamber. Mr. Delisle will explain to you how the Chamber functions and what its program is. He will extend to you an invitation to become a member.

Your courteous reception of Mr. Delisle will be greatly appreciated. Our business future demands that we take the time to discuss these national problems and how we can meet them in the American tradition.

Cordially,

Am Clark

INTERNATIONAL
SCIENCE AND
TECHNOLOGY a Conover-Mast Publication / 205 East 42nd Street, New York, N.Y. 10017 / MUrray Hill 9-3250

April 7, 1965

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

I am enclosing contact sheets of the pictures taken during the panel discussion. If you would like any of them just mark with a grease pencil and return the sheets to me.

Let me take this opportunity to tell you again how much we enjoyed having you here and to ask one favor: I hope to be sending the edited draft of the interview to you during the first two weeks in May, and due to the rigors of printing schedules will probably have to ask for 1-2 day service on any corrections you might have. Thus, if you plan to be away for any extended period of time,,then would you please let me have the address where I could reach you with the manuscript.

Thanks very much.

Cordially,

Michael F Wolff

Michael F. Wolff
Associate Editor

AC SPARK PLUG
THE Electronics DIVISION OF GENERAL MOTORS
MILWAUKEE, WISCONSIN 53201

March 29, 1965

Mr. Kenneth H. Olsen
Digital Equipment Corporation
Maynard, Massachusetts

Dear Ken:

We met several times too many years back when I was at Bell Labs and you were still at Lincoln Labs. I note that you are among the advance registrants for the Conference on the Impact of Batch Fabrication on future computers in Los Angeles the week of April 5. I am Chairman of Session II on Logic and Memory Implementations, and would like to ask your assistance in making this a successful session.

I recently had occasion to talk with Harlan about your new line of flip chip modules. If you can find time to read the papers by Banghart and by Cubert on integrated circuits, perhaps you can generate some interesting comments or penetrating questions which relate to these batch type processes and their comparison with techniques such as you use in your own modules. Such comments and questions would be a valuable contribution to the success of the Conference.

I appreciate any support you can provide the Conference in this matter.

Very truly yours,

RAK

R. A. Kudlich

b

W. B. YACUS
5 MICHAEL ROAD
FRAMINGHAM, MASS.

GM letter

March 24,1965

Mr.Kenneth H.Olsen,President
Digital Equipment Corporation
Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

At a recent meeting with Mr. Richard A. Osborne at the M.I.T. Electronic Systems Laboratory, I was referred to you for further advice on job opportunities in the Greater Boston-Worcester area.

I am presently associated with General Motors Corporation, but because I cannot transfer to other locations, I am seriously considering location in this area, outside the corporation.

Please understand, I am not seeking employment at Digital Equipment, but am looking for an opportunity for a discussion of how my manufacturing and business capabilities can be utilized to full capacity.

Would you look over the enclosed resume; and may I call you to arrange for a short interview?

Sincerely,

W. B. Yacus.

William B. Yacus

4-10
Jim Hastings called and told him there were no openings.

WILLIAM B. YACUS
5 Michael Road
Framingham, Mass., 01706

Area Code: 617
Telephone : 877-3621

DESCRIPTION: PRODUCTION/PLANT MANAGER of electro-mechanical industrial, or engineering firm in which successful experience of managing, establishing policy, creative problem solving, and where the ability to plan, organize productive work forces and supporting service groups through excellent communications and motivation, would increase production, efficiency and profit. Led through past outstanding performance and wide recognition as an expert in organization and cost control.

QUALIFICATIONS: Over 16 years of successful engineering and management experience on staff and line level with increased responsibilities within same company, including Plant Engineering, involving plant layout, tooling and equipment procurement and design as well as plant maintenance; Industrial Engineering involving work standards, processing, methods, cost control and accounting; Production involving hiring, motivating, training up to 400 men including labor relations with C. I. O. ; Quality Control and product improvement as well as planning for annual product changes, modernization and expansion of facilities.

RELATED ACCOMPLISHMENTS

MANAGE: Moved from 5th to 1st place nationally as Production Superintendent of 400-man Trim Shop.

Responsibility for 180 skilled tradesmen involved in $2,500,000 per year maintenance, rearrangement and modernization of 1,250,000 square foot plant.

POLICY MAKING: Manager's Staff member contributing to policy as Work Standards Head, Plant Engineer, Production Superintendent, Defect Free member and Project Manager.

Direct labor savings of $900,000 annually through work standards program.

PROBLEM SOLVING: Crash program of inspecting and correcting faulty design accepted and incorporated nationally by product design group.

Developed master start up plan for annual acceleration of production due to new models.

IDEAS: Designed spot weld gun suspension system, later adopted by 15 plants which broke bottleneck in conveyorization of Body Building.

82% decrease in defects resulted from study of operator failure.

PLAN: Reduced warranty costs $250,000 annually through Planned Product Reliability Program, placing controls to prevent problem reoccurance.

Planned $1,200,000 conversion of Framingham plant from production of Buick, Oldsmobile, Pontiac, to Chevrolet passenger cars.

ORGANIZE: Moved from 6th place to 1st place nationally in production costs, through organizing planning group for model change-over.

$11,000 increase to $36,000 with highest per capita receipts in State, as County Campaign Director, March of Dimes, organizing over 3,000 volunteer workers.

COMMUNICATE: Member of corporate speaker's bureau in presenting engineering and production features of product to professional groups (ASME, AIIE, ASTME, Rotary, university).

Savings of $8,000 per year through installing voice paging system.

EXPERIENCE: SENIOR PROJECT MANAGER, Chevrolet, Division of General Motors Corp. (1960 to present)
Project Manager and Senior Engineer in facilities expansion, production planning, and acting as Plant Engineer.

PRODUCTION SUPERINTENDENT, Buick-Olds-Pontiac, Division of General Motors Corp.
Supervised 400-man Trim Shop, and 200-man Body Shop, worked on Manager's Quality Defect Free Program.

SUPERVISOR-WORK STANDARD AND METHODS ENGINEERING, Buick-Olds-Pontiac, Division of General Motors Corp.
In charge of time study and methods engineering and process groups responsible for budget and improvement programs.

EDUCATION: MBA equivalent, through numerous years of graduate courses - Northeastern University, seminars, and correspondence courses. BSIE, General Motors Institute, Registered Engineer - Massachusetts, No. 11157.

PERSONAL: Age: 38; Married; Excellent Health; Member: SAE, AOA, elected Town Meeting Representative, Volunteer, March of Dimes.

INTERTYPE COMPANY
A DIVISION OF HARRIS-INTERTYPE CORPORATION
360 FURMAN STREET • BROOKLYN 1, NEW YORK

WILLIAM A. HADLEY
VICE PRESIDENT
PRODUCT DEVELOPMENT

March 24, 1965

Mr. Kenneth H. Olsen, President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Mr. Olsen:

We enjoyed our visit with you and found it most informative and helpful.

I am delighted with the paperweight. It is prominently displayed on my desk at this moment.

We expect to be in touch with you further about several of the things we discussed.

Sincerely yours,

W. A. Hadley

WAH:eb

To the Corporators
Assabet Institution for Savings
Maynard, Massachusetts

Dear Sir,

In accord with the provisions of the by-laws of the corporation and the Laws of the Commonwealth of Massachusetts, enclosed is notice of the Annual Meeting of the Corporation, duly called for Monday Evening, May 3, 1965, at the Wayside Inn, Post Road, South Sudbury, Massachusetts, at 6:00 P.M.

It is also my duty as Clerk of the Corporation to submit to you the names of persons proposed for election as members of the corporation.

The following names have been submitted:

Medville L. Clark, 246 School Street, South Acton
Sponsored by Harold A. Ledgard

Maurice F. Keon, Packard Road, Stow, Mass.
Sponsored by Harold A. Ledgard

Theodore W. Lowney, 37 Brooks St., Maynard
Sponsored by Arnold C. Anderson

Very truly yours,

Philip A. Wilson

Philip A. Wilson
Clerk of the Corporation

April 23, 1965

Annual Meeting of the Members of the Assabet Institution for Savings

The Annual Meeting of the Members of the Corporation of the Assabet Institution for Savings will be held at the Wayside Inn, Sudbury, Massachusetts, on Monday, May 3, 1965 at six o'clock P.M. for the following purposes:

1. To hear and act upon reports of all officers and committees.
2. To elect officers for the ensuing year.
3. To transact any other business which may properly come before said meeting.

Per order of the President
Philip A. Wilson, Clerk
April 22

INCORPORATED MARCH 31, 1904

Assabet Institution for Savings

Maynard, Massachusetts
TWINOAKS 7-2963

March 22, 1965

Digital Equipment Corporation
Maynard, Massachusetts

Atten. Kenneth H.Olsen, President

Dear Mr. Olsen,

The Rotary Club of Maynard has enjoyed for sometime now the pleasure of the use of the Digital room at La Petite Auberge.

However, with the addition of new members, we found it necessary to have larger quarters and have been fortunate in securing a meeting place above the Cooperative Store in Maynard.

On behalf of the Maynard Rotary Club, I thank you for your courtesy in allowing us the use of the Digital room. It was very much appreciated.

Sincerely yours,

Arthur R Carlton

Arthur R. Carlton, Secretary
Maynard Rotary Club

ARC/B

Telephone 731-9300

SCHNEIDER TOOL & MFG. CO.

MODEL, EXPERIMENTAL, PRECISION SHEET METAL AND PROTOTYPE WORK
TOOLS . . . DIES . . . FIXTURES

555 VALLEY ROAD
W. ORANGE, N J 07052

Mr. Keneth Olsen, President
Digital Equipment Corporation
Maynard, Massachusetts

March 22, 1965

Dear Mr. Olsen:

Some time ago you inquired about the Paper Tape Punch Head which we produce for Data Processing Equipment Manufacturere. As you know, our Punch proved best of many that were tested by one of the world's largest business machine manufacturers. Our punches showed no loss of quality after a sixty million cycle test. This large manufacturer has ordered nearly 10,000 of our punch heads.

We are writing to you at this time to let you know that recent plant expansions and modernizations have permitted us to reduce our costs and prices a great deal.

Furthermore, we are writing to let you know that we produce, in addition to Paper Punches, a range of data processing components. Also, as an indication of our capabilities we produce highly precision components for guided missiles and rockets and have received recognition as contributors to Telestar.

Should you have any need for our services we will be happy to help you. Please submit drawings or a sample and we will forward a bid very quickly.

I want to thank you for considering Schneider Tool for any of your component, prototype or full product needs.

Very truly yours,

P. Emmarco

P. Emmarco

PE/bd

digital equipment corporation
MAYNARD, MASSACHUSETTS
TWinoaks 7-8822 TWX MAYN 816

March 18, 1965

Inter-Science Publishers
605 Third Avenue
New York, New York 10016

Gentlemen:

We recently placed an order with you for several John Wiley volumes. Would you please advise me just what this order consists of.

Your prompt attention to this request will be appreciated.

Sincerely,

Elsa C. Carlson

(Mrs.) Elsa C. Carlson
Secretary to
Kenneth H. Olsen, President

3/24/65

The two books ordered on your P.O. 40992 are:

Birks - Electron Probe Microanalysis
Bunshah - Transactions of the Vacuum Metallurgy Conference 1960

JOHN WILEY & SONS, INC.
E. Schwab
E. Schwab
Customer Service Dept.

Forgive our informality
but to speed our reply we have answered on your letter.
JOHN WILEY & SONS, INC.
605 Third Avenue
New York 16, N.Y.

TELEPHONE: EXECUTIVE 3-8100

CABLE ADDRESS: NARECO
WASHINGTON, D. C.

NATIONAL ACADEMY OF SCIENCES
NATIONAL RESEARCH COUNCIL
2101 CONSTITUTION AVENUE, N.W., WASHINGTON, D. C. 20418

DIVISION OF MEDICAL SCIENCES

18 March 1965

Mr. Kenneth H. Olsen, President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Mr. Olsen:

On behalf of the National Academy of Sciences and the USA National Committee for the IUPS, I wish to thank you for your generous contribution of $300 towards the cost of American participation in the XXIII International Congress of Physiological Sciences.

We take pride in the number of this nation's scientists who are being invited to assume key roles in the Congress, and are grateful for your assistance in making it possible for them to contribute to and benefit from this stimulating exchange of ideas with their colleagues abroad.

Sincerely,

Herbert N. Gardner
Assistant to the Chairman

cc: Dr. M. B. Visscher

THE FOXBORO COMPANY

DIGITAL SYSTEMS DIVISION
21 STRATHMORE ROAD
NATICK, MASS. 01762
TEL. 653-5660

March 17, 1965

Mr. Kenneth H Olsen, President
Digital Equipment Corporation
Maynard
Massachusetts

Dear Ken:

Enclosed is the price comparison which I promised you showing the difference between the Foxboro PDP-7 and the IBM 1800 Computers.

These figures show that portion of our pricing problem which is of interest to you.

Very truly yours,

THE FOXBORO COMPANY

Roy S Fine

Roy S. Fine
General Manager

RSF/vn
attmt

cc: R.Reut - Natick

FOXBORO
Instrumentation

THE FOXBORO COMPANY

March 17, 1965

PRICE COMPARISON - FOXBORO PDP-& vs. IBM 1800

	Foxboro	IBM
Basic System		
8K core	(55,000*	
	(12,000	
EAE	6,300	
Parity	(3,200	4 mic.sec.=
	(600	55,700
		2 mic.sec.=
Subtotal	77,100	62,700
Bulk Memory		
32K Drum	36,200	-
131K Drum	43,400	-
512K Disc	-	13,500
Incremental Core Memory		
8K to 16K, incl. parity	42,000	18,000
I/O Equipment		
Paper Tape Reader	Incl.	3,150
Paper Tape Punch	Incl.	2,025
Card Reader	14,900	16,775
Card Punch	20,100	approx. Incl. with Reader

* Current DEC estimate on Foxboro version with Real Time Option, etc.

File

INTERNATIONAL
SCIENCE AND TECHNOLOGY
a Conover-Mast Publication / 205 East 42nd Street, New York, N.Y. 10017 / MUrray Hill 9-3250

March 15, 1965

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

Here's a brief paragraph on each of the participants in our March 25th panel discussion.

See you soon.

Cordially

Michael F. Wolff

Michael F. Wolff
Associate Editor

THINKING AHEAD WITH... BRITISH ÉMIGRÉS

ON LEAVING BRITAIN

A group of British scientists who have moved to the United States take a look at Britain's brain drain— its causes, its significance, how it feels

In Britain—in Parliament and the press—there has been a continuing debate between the government and its political critics over the flow of British technical people to the United States. Why is this "brain drain" happening? Is it hurting Britain? Can it be stopped? Should it be stopped?

This year's flurry of such questions was stirred up by the decision of a nine-man medical research team, headed by Ian Bush, to move in a body from Birmingham University to the Worcester Foundation for Experimental Biology in Massachusetts. But the problem is older than that and will doubtless continue.

A month or so ago it occurred to the editors that one way to get some insight into what the brain drain is about would be to gather a few scientists and engineers who had come to this country from Britain and ask them to talk about their experiences and attitudes. The group we brought together around a Cambridge (Mass.) dinner table was a thoroughly unscientific sampling, its members chosen simply because they were in the Cambridge area and could all get free on the same evening.

Prof. Patrick Wall of the MIT biology department is a 39-year-old medical doctor and research physiologist who received his education at Oxford. He came to the US in 1948.

Prof. W. D. Jackson, also at MIT, is 37, an electrical engineer working particularly, nowadays, in magnetohydrodynamics. He was trained at Glasgow University, first came to the US in 1955 as a visiting scholar in the Fulbright program.

At 30, Dr. John Evans was the youngest in the group. He is a radar astronomer at Lincoln Laboratory. He learned his physics at Manchester University, his radar astronomy at the university's Jodrell Bank research station, left Britain in 1960.

Robert H. Colbourne is a systems engineer at MITRE Corp. Educated at London University, he came here in 1956. He is 40.

David Lutyens is a teacher and science writer, educated at Cambridge. He is developing educational films at The Ealing Corp., is 37 years old and finally emigrated in 1961.

The conversation developed with a most British-seeming combination of passion and decorum. The subject was clearly one on which the participants had thought a lot and felt strongly. But the discussion stayed on the point and moved in an orderly way with almost no intervention by the editors—except for an opening request that each of our guests tell something of why he had crossed the Atlantic:

WALL: I came here in 1948, immediately after finishing medical school, as an instructor at Yale. I had assumed that I would return, but by accident or inertia, I stayed on here—stepped onto the American academic ladder and proceeded on.

EVANS: I came here four years ago, in 1960. I went to university in Manchester at a time

when it was quite easy for someone to get a PhD regardless of his parents' income; the educational act allowed one to go through college and post-graduate work with government support. So by the time I was 24 I had my PhD in the rather strange field of radar astronomy—even today there must be fewer than ten professional radar astronomers in the world. So I was a bit of a freak, and the problem was what to do next. I graduated at Jodrell Bank, and the only other organization in England with a program in this area was the Royal Radar Establishment. I didn't entertain the idea of becoming a civil servant, so I stayed on at Jodrell as a research fellow. But after three years it became clear that either I had to leave this field or leave the country. Although we had a large telescope, we didn't have the associated equipment, the large transmitters and sensitive receivers, to compete with what was being done in America. So with some reluctance, I came to Lincoln Laboratory where I have been allowed to pursue this kind of work with much better support than I was getting at Jodrell. In that sense, I have no regrets.

JACKSON: My story really begins with leaving Glasgow University, where I did my bachelor's degree, for an appointment at Manchester as an assistant lecturer; that would be instructor at an American university. I worked for some time on my thesis research in magnetohydrodynamics, until it began to have implications beyond the capability of the university and the people I worked with. Moreover, as an instructor I became aware of the revolution in engineering teaching at MIT which Dean Gordon Brown—then head of the electrical Engineering Department—was initiating. I came to MIT on a 9-month visiting lecturer appointment because, in the first instance, I wanted to find out what Brown was up to—for I felt the need of some substantial revolution in engineering education at Manchester and elsewhere in England. Secondly, I knew some people at MIT were getting interested in my research field. So nine months stretched out to two years. I did return to Manchester, but I wasn't there long before I decided that the professional opportunities at MIT were to be greatly preferred to the life of a revolutionary at Manchester. So, as Wall said earlier, I stepped on the American academic ladder.

COLBOURNE: I represent applied science here. I will go back a little farther than other people to point out that I was in school when the war started. I served five years in the R.A.F. before going up to University. After graduating from London, I joined the Royal Naval Scientific Service, in the microwave field, working on what I would now call a weapons system. In 1954 it became obvious that if I were going to get anywhere I would have to leave the rather cozy little nook I was in—and if I were going to move, I might as well make a real move. So I succumbed to an offer from a Canadian company, thinking that two years over there would let me see the other side of the Atlantic. But at the end of those two years I came down into the States, because it seemed silly to be over here and not see this part of the world. That was in 1956 and at the moment I'm still here. It comes down to the difficulty of going back.

LUTYENS: I first came to the states in 1957 on a Commonwealth Fund fellowship. I came as

a teacher. I had been teaching for some years in England, after being trained in science, and it is a terribly corny thing to say but really I think the moment I first decided I wanted to live in America was when I saw the Manhattan skyline—the conventional immigrant's reaction. I taught at Harvard for a year in a very minor capacity and spent the rest of the time studying American techniques of teaching science. It took me about six months to unlearn the dogma I came equipped with—that the British education system was the best in the world. I became fascinated, above all, by the American talent for experiment. My arrival coincided with the arrival of Sputnik, and this was a time of tremendous ferment; I was immensely stimulated by Zacharias' curriculum reforms. When the time came to go back to England, I still had the urge of a frustrated scientist, the urge to explain science to other people. I went into television and newspaper and paperback publishing and spent a rather miserable two years in an atmosphere where science just isn't understood and I decided to come back to the States. In the meantime I married an American girl, and that helped. So here I am.

WALL: I wonder if we'd like to discuss why we are here, really. People have been leaving England since before the crusades, coming to America since after Columbus. I think there is a real question whether there is anything new now. One thing, it's clear, is new: It's become a political issue, particularly between Quintin Hogg and Harold Wilson. I suspect Hogg's friends have quite a two-faced attitude. They have to regret this emigration, *pro-forma*, but they are a past-oriented group who look on England as a place where you distill off the low-boiling-point types to India or any other place that will accept them. The implication being that those who remain get better and better. Now what about Wilson and the Labour Party? They are concerned, of course, with an improved living standard in Britain. Now a living standard doesn't come just from having good ideas. It comes from applying good ideas—and this needs large numbers of people. So Wilson has a very good point; now really is a time to be worried.

COLBOURNE: I'd like to add to your analogy. Distillation is fine, and pure metals are fine for ornaments, but if you want strength you look for alloys—and I think the alloying agents are being lost in Britain. After all, who went to India? Not the elder son. He looked after the estate. It was the second or third or fourth son, who would be nothing in England, who became the administrator of some Indian province. There is a little of that here. I think we have to face it.

LUTYENS: Britain is no longer the center of an empire. And the professional class, the class that finds it easiest to emigrate, is precisely the one which should be staying home and helping to build a better Britain. I think Wall is right that the political party in power has a very 19th-century attitude toward the loss of these people.

Is there any feeling of guilt around this table?

WALL: Oh certainly.

EVANS: Particularly in my case, as one of the younger members present; my education was paid for by the state. On the other hand, this feeling of guilt has to be reconciled with one's own selfish desire to do as well as one can in one's science. Wherever you can do your best you must go there and do your best.

COLBOURNE: I don't feel a sense of guilt. When I left in 1954, I remember thinking: "I don't feel I am leaving a sinking ship." Britain was back on its feet. And then there was the question how valuable one was in England, and how valuable over here. The people from Canada made me feel I would make a more important contribution in Canada than where I was. I was not irreplaceable, and it was fairly obvious I was never going to be on top of my little group because there were other people of my age who had four or five years more experience, acquired during the war years. I felt I had a greater breadth of vision, but it wasn't really needed in that comparatively limited scientific field—the job was fairly well spelled out.

EVANS: This is a very important point. People say this loss of brains damages the rate of scientific achievement in England. I really question this. If I had stayed in England, I know what would have happened; I would have gone to the Royal Radar Establishment. A colleague of mine did just that, and I visited him a year ago. He's struggling to do, with inferior equipment, what I'm doing over here much more easily with much better support. He is not benefiting England any more than I am. The country's use of brains is not that efficient.

WALL: After all, none of us have rejected

Britain in the way a political refugee might. You have all sorts of emotional loyalties to friends and the country in which you were born, but in addition you have a loyalty to fulfill yourself in research; loyalty, if you like, to humanity—to produce the maximum you can. What we really want to know is: Why did we not feel ourselves fulfilled in Britain? What was wrong with Britain for us?

JACKSON: One thing that makes us different from the political refugee or the immigrant of the past—we work in a sort of international fellowship of science and technology; our friends are scattered around the world and because of the work we do we are able to get on airplanes and travel anywhere. We are part of a larger community.

LUTYENS: I think you research types have every excuse to go do your research where you can best do it. I don't have this excuse—but I would like to report that I don't feel any sense of guilt. None at all. I would feel differently if I came from Ghana or some other place which desperately needs technical help. But I am rather sick and tired of this moralizing by the politicians. I seem to have spent all my life working in institutions where I am told it is a privilege to work—from Winchester College to England. I am prepared to be rather aggressive in arguing that England ought to put its house in order before it starts moralizing.

JACKSON: I don't feel any guilt either. I made an attempt to work in a British academic environment. I went back and tried to be a crusader. . . .

LUTYENS: But they're not interested. The complacency is fantastic.

WALL: Yes . . . complacency. And there are those with shattered morale. When I had been over here and started enquiries about jobs back there my old tutor at Oxford said, "Why do you want to come back? Don't you realize this country's finished?" Now I think he was wrong, but I think it is important that a man in that position is making a statement like that.

COLBOURNE: I get an impression that nearly everyone around this table is saying that under a Conservative government we have an impossible situation and it will be all right when Labour gets in. I disagree. Not that I think it is better under the Conservatives, but I don't think it is going to improve overnight under Labour.

We hear it said that science has more freedom in Britain than here because so much of it here is sponsored by the Defense Department or NASA. What about that? Do you feel less free than your friends at home?

WALL: On the contrary, I believe the method of distributing funds here gives increased freedom. In England, most money for the universities is distributed through the University Grants Committee and is distributed down through a hierarchy of people. Here the young man in a university applies for his own grant and is not dependent on his department chief. This is really a fundamental difference.

You indicated before, Evans, that you don't think you could do in Britain, financially what you do here?

continued

EVANS: Well, the large telescope at Jodrell, complete with the buildings and peripheral things, cost something like three quarters of a million pounds. But there was a shortage of money with which to buy receiving and transmitting equipment to use with this splendid instrument for radar. The kind we wanted would have cost about a half million dollars. Even had we had the money, we couldn't have gone to an English company to build one for the simple reason that the high-powered klystrons weren't being developed in England. There is no market. In this country the military requires these large devices, and then industry can sell them to other organizations at a fraction of the development cost.

How easily can you come by a half million dollars here?

EVANS: That's a good question. The only personal experience I have had was when I wanted to build an antenna to use with an existing transmitter. The antenna was to be 220 feet across, that's about the size of the Jodrell Bank instrument. Mine is fixed to the ground and not steered, and therefore less expensive. It cost about $150,000. It was only necessary to convince the senior people within the Laboratory that this was a good project, and they carried it from there. At Lincoln, funds can be made available for a worthwhile project.

LUTYENS: I worked for two years for a company which makes particle accelerators—off the shelf as it were—varying in price from $25,000 to $3,500,000. Now the interesting thing is that this company sells about 80% of its business to universities who get the money from the National Science Foundation or the like. This company could never have been conceived in England. It would have gone bankrupt in six months.

WALL: I think the important thing is not that money is easy to come by, anywhere, but that here your request is considered by a group of scientists. It is not automatically rejected as ridiculous by some civil servant. Here you have to get up to the level of the Mohole or the Stanford accelerator before the issues become so large that they are decided by general democratic process.

COLBOURNE: We are comparing Britain with the whole of America. If the European scientific community really became integrated by the common market we might see a brain drain across the channel.

WALL: I think it is already happening. I think we have an example of what the common market way of thinking could do in CERN.

JACKSON: When I was setting up to make a move from Manchester, I seriously considered the possibility of working with CERN, and some of my friends in engineering and physics are at CERN to this day. Others are in Switzerland working for such companies as IBM.

EVANS: Jodrell Bank lost nine of its doctoral graduates to this country, the last of whom came here about three years ago. Since that time none have come to this country but four have gone to Australia.

There is still the question of why people leave, apart from the fact that sometimes they can't get enough research money.

JACKSON: Could I say something about that? Getting money is one thing, but having people who can make good use of it is another, and I regard one of the chief difficulties in England as being the lack of graduate schools. One of the great strengths of American academic institutions is the existence of strong and effective graduate schools all across the country. People get known around the world, not for the books they write or as teachers, but for the research they do—and they do it with graduate students. This is a basic problem in British higher education. The tradition lingers that when a man has got a bachelor's degree he is educated and must not demean himself to sit in a class any more. And so one finds people doing research degree work of incredible triviality because their professors are constrained to give them work within their capabilities. One reason the brains are draining away from Britain is that in the academic

world they do not have the opportunities which are available here to work with students.

LUTYENS: The British education system is living in a great self-deception—that it is the best in the world. If I may be forgiven an anecdote: The first morning I appeared as a teacher at what some people consider to be the best private school in England, a wizened figure with a chalk covered gown came up to me in the faculty common room, a classics don of considerable standing, and said to me, "So you're the new stinks don." That very expressive British term for science derives from the chemistry lab of course, and conscious that physics is the queen of the sciences, I said, "Yes, I've come here to teach physics." Whereupon he said, "I said you are the new stinks don. I don't differentiate between one *kind* of stinks and another."

In a sense, you people have come to a society in which science outranks the humanities, and so you have upgraded yourselves. An American teacher of Latin or Greek might feel like an underdog.

JACKSON: That's how I feel. My high school education was obtained at a school in Glasgow, which specialized in sending people to Oxford and Cambridge. I did reasonably well in mathematics and such matters, but I was ruled out as a possible candidate because I could not attain the required proficiency in Latin—and that deflected me to Glasgow University. British education has a preoccupation with Oxford and Cambridge; they have an influence out of all proportion to their real importance. There is a hierarchy. There are those who are in the Establishment, the Oxford-Cambridge gang, and those who are out, the rest of us.

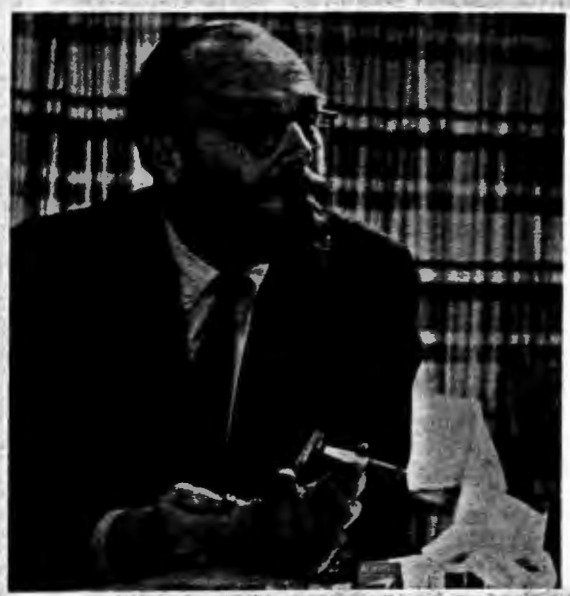
EVANS: Let me explain how this works. Any public school which is hiring a headmaster or senior master will, if it's possible, hire someone with an Oxbridge degree. You can go through the lists without finding a single headmaster who can't write *Oxon* or *Cantab* after his name. So, at the high-school level, the headmasters deflect all their best pupils to Oxford or Cambridge. It's a closed circle, very hard to break.

WALL: I think this is something very important to say, here in America, because something very like this is developing in the States. Not as dramatically—but there seems to be a watershed, with universities collecting on the coasts and not as much happening in the middle as in 1900.

EVANS: One good thing about Britain is that it is possible for a boy who is bright to get through college, to get a good education even if it's second best, without the struggle that can go on in this country. In England the bright are pampered.

May I ask Jackson a question? Suppose you had been good in Latin as well as in math, suppose you had gone to Cambridge. What would your life as a scientist have been like?

JACKSON: I will use the example of a friend who did come to the US but has chosen to return. He went to Cambridge, took a degree in engineering, came to Harvard for a year for a masters and returned to England. He did his doctorate at Cambridge and carried on for a while as a fellow—and has recently been appointed the professor of engineering sciences at one of the new universities—building up a new department from scratch.



WALL: The British educational system is really designed to select an elite. It may use 19th-century criteria, and the process of selection may well destroy some people, but once you've made it there is no doubt that this is a fabulous bunch of people with excellent working conditions. The question is how much of their initiative is destroyed in the process.

COLBOURNE: It's very easy for a young man to determine at a certain level that he cannot make the grade, that he just doesn't have the background. Do any of us know of anyone included in the Establishment who has come over here?

LUTYENS: I confess that I am, in the sense that I suppose I could have gone on and become headmaster of a good private school. But I think this matter of an elite is just the problem. England has too much of an elite.

WALL: But there is fierce competition. The best do get trained, and so competition for a lecturer's post at a university is quite fierce. And the professor at Cambridge, someone who is in the Establishment, is as well off as a professor here. His standard of living is high, and certainly the respect which he holds in the community and throughout the world is very high.

continued

EVANS: To take a field I know—there have been several groups of radio astronomers in the world. In England, in Australia, and over here. The only group that has been truly stable over seven or eight years has been the one at Cambridge. I believe this reflects the conditions peculiar to Cambridge.

COLBOURNE: This brings up another question. Can you go back? What are you going back to? It is nothing like so easy to organize as it was to organize coming over.

JACKSON: I did go back. And as near as I can remember, the thing that struck me was the high cost of living in the way to which one had become accustomed. Little matters like lighting coal fires—you could do it, but you had lived with central heat for two years. Now, I went back to the College of Science and Technology at Manchester, and I sort of expected there might be some interest in what Brown & Co. had been up to at MIT.

LUTYENS: They recognized MIT's existence?

JACKSON: Oh yes, we were using textbooks that had been written—before and during the war—by MIT staff members. But the reaction was: "Well, you're back. How about a game of table tennis?" I thought there might be some hope for the students, and I was teaching a course in circuit theory. Now, Prof. Guillemin, who was active then at MIT, had a very elegant and general way of looking at this subject, and I thought I'd introduce some of this into the course. It was the only time in my career I've had any objection to my teaching. From the students! It wasn't in the syllabus; how could they prepare for the exams? I gave up. That very day I wrote to Gordon Brown.

It's hard to go back. But if you were offered a chance to become professor in your field at Cambridge would you take it?

WALL: Yes. There are a number of practical difficulties to returning. For a junior person, some simple ones like the time it takes for advertisements to arrive and the time it takes to answer them. And in any system, one tends to appoint people one is familiar with. Also, to get a job of any description in Britain you must put on a campaign for it; there is an expectation that a campaign will be mounted. Whereas here the system is that one is asked.

Yet if it were offered, you'd say Yes. Why?

WALL: I still feel a foreigner here. Universities are universal places, and the people here are the same types I would mix with in London. But the man I meet on the street is still a stranger to me here. I still feel the chances of having an interesting conversation with the man in a garage are higher in England.

There is still a final question—whether something is going out of Britain that is really a loss to Britain.

WALL: We've seen examples in history of a country like Portugal, which, presumably, at the time of her expansion was a tremendously exciting place to live. Things happen to countries, and the worry is that England may be on its way out. You can't afford to isolate yourself—to lose the more enterprising people.

COLBOURNE: What would entice us back? I think the answer to that would be real long-term projects which were of use to humanity. I think there are a tremendous number of people who would go back for a real forward looking project.

JACKSON: My own feeling is the hope for Europe, not just for Britain, is the common market.

LUTYENS: Britain is a very parochial country.

WALL: I think its parochialism may be the track that leads to another Portugal.

JACKSON: There may be an aspect of critical size here. That's where the common market comes up.

LUTYENS: I can summarize my thoughts in two brash sentences. I think the ideal environment is somewhere in mid-Atlantic, just slightly on the American side. I like living here because on the whole the people I deal with instinctively say "yes" to new ideas, whereas in England they consistently used to say "no."—D.A./D.C./R.C.

THE SCIENCE ENTREPRENEUR

by David Allison
associate editor

"Scientists are poor businessmen."
This is a myth. Forget it.
"Science is a poor business."
Not so mythical. Possibly worth remembering.

IN BRIEF: *A new crop of science-based companies is springing up. The motivation is easy to comprehend: these men want to do research, practice an engineering art, gain personal recognition, and make some money. But accomplishment is difficult, for the successful entrepreneur must be good at more than his specialty: he must be a good personnel man, a good fund-raiser, a good bookkeeper, and on it goes. His job seems—to him, at least—more complex than it was for his brother entrepreneur of a decade ago, because science has lost its glamor on Wall Street and, hence, capital is now more difficult to find. There is more government money around nowadays, but the young technical firm may have difficulty getting its share. Most young entrepreneurs in science and engineering seem to agree that this is a good life, that it is tough, that they never will go back to the serenity and security of the old lab—whether in industry or on the campus, but that if you really want to make a lot of money, the small technical firm is probably the wrong place.—D.A.*

They like to think about Polaroid, High Voltage Engineering, Bolt Beranek & Newman, and the scores of others who once were small, struggling enterprises of scientists and engineers. The dream of achievement is vivid among them. They possess an unyielding conviction of eventual success, for confidence and belief-in-self is the stuff of the science entrepreneur.

Over the past several months, I have talked with many of them, men who have quit the industrial laboratories, the not-for-profit research institutes, or the great universities to establish themselves in the technical *business*. They work in small buildings, usually new. (I found none who worked out of the romantic garage.) They are seldom more than ten miles from a university. They carry short, telegraphic names—like those found in second-rate business novels: Invac, Aero Vac, Bytrex, Rotek. Their lights burn late.

They eat at their desks instead of Kiwanis and sleep the sleep of men with problems. It is a good, hard life, they say, and they are glad to have put behind them the security of the large organization.

Is it the promise of wealth that makes them go? In part, I believe it is, but there is always another reason too, for talk of money does not arouse in them the same intensity of interest as does talk of new ideas. These are men who must burn off extraordinary quantities of energy—a compulsion. It is impossible to talk with one of them for more than ten consecutive minutes, for their doors are swinging and their telephones jangling from eight until six.

Much of this frantic whirl has nothing directly to do with the forward motion of their science; rather, it is Ralph needing an OK on a purchase order for a new blueprint machine or the underwriter calling to say that he won't be able to come out on Tuesday but that he'd like to make it Friday, or a potential customer . . . "I'm calling Fred but the girl said he was out of town so maybe you can help me . . ." . . . wanting to know whether the new machine will take information from a standard RemRand "and by the way, how many keys on it?"

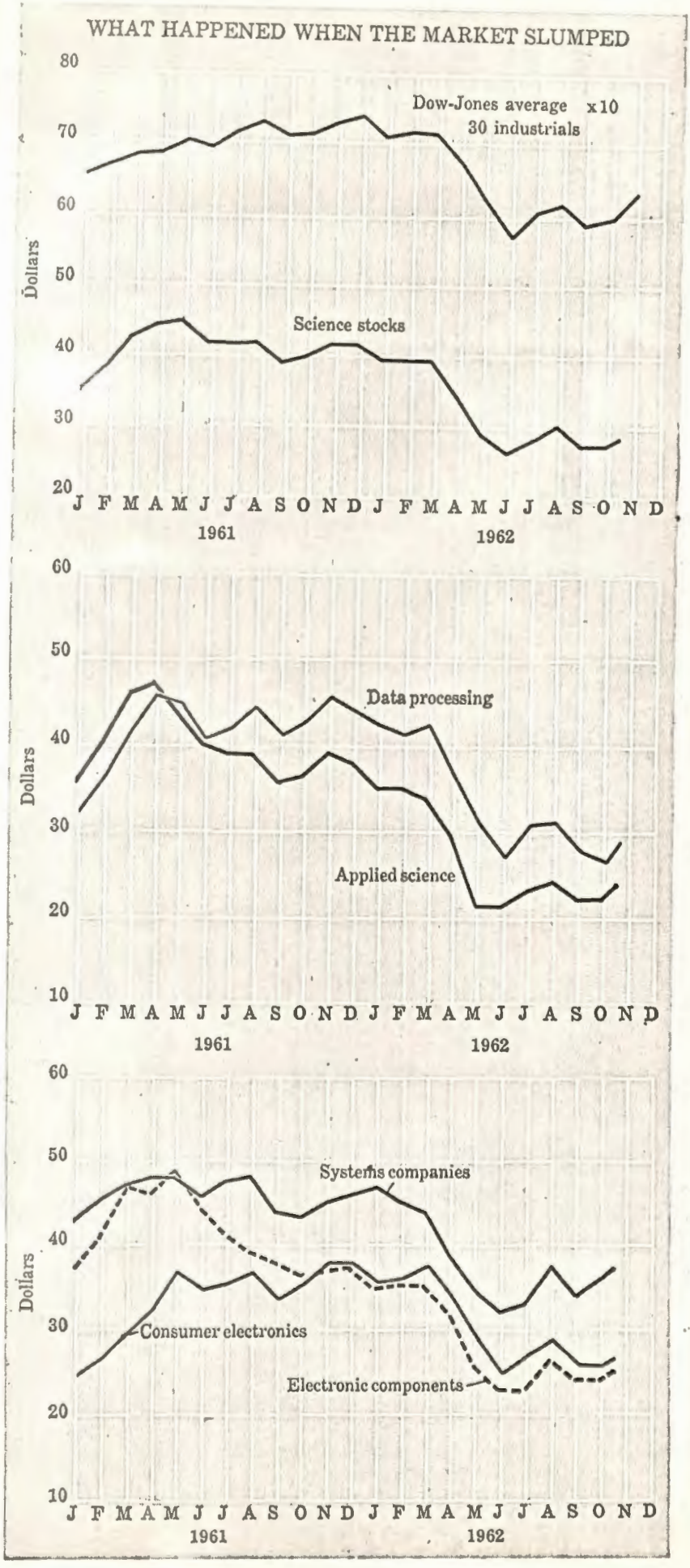
In other words, a typical day in the life of the technical entrepreneur is seldom what he had envisioned it would be. He started out to do research or to produce a new device and finds himself, a year or two later, entertaining brokers, recruiting personnel, bickering with a public relations man the underwriters urged him to retain: "I *know* the manuscript is late . . . I *know* I said 'Monday' . . . Tell him I'm *sick*, for God's sake . . ."

"If I knew then what I know now," they say, "I probably would have stayed where I was. But I'm glad I did it."

The bumps on Wall Street

The past year has been a difficult one for most young technical companies. Until the stock market slump, life had gone better, for capital was plentiful. But when the market dropped, the small technical firms were hit especially hard. Their stocks depreciated to one-third or less of peak value; most have yet to come back to more than one-half their value of a year ago. The reason, generally felt, is that they were highly over-priced in the first place. The result is a tightness of capital (see FINANCING NEW VENTURES, Sept. '62, p. 47) which currently makes it difficult for the young technical enterprise to thrive.

Indeed, the smart science entrepreneurs—those who live by founding new technical com-



The charts help to explain why many technical companies have had trouble getting capital during the past couple of years. Note, for example, that prices of stocks in technical firms began their decline in early 1961—nearly a year before the general market downtrend. When the stock market went into its great slump last spring, the decline of technical prices accelerated still more.

The line labeled "science stocks" in the top graph is an average of the stock prices of 100 science companies, representing all fields of modern technology; these were selected by Samson Associates to provide a monthly index of trends in stock prices of technical firms. (The index will be published in the forthcoming Samson Trends, *a monthly review of developments and expenditures in science and technology.) Compared with the Dow Jones Industrial Average (top line on top chart), we see that science stocks declined in value by nearly 35 percent during the spring slump, while the industrial average declined only 21 percent; further, since the market's recovery began, the industrial average has gained about 12 percent, while science stocks have gained a little less—just under 11 percent.*

Which fields were hit hardest? Manufacturers of components seem to have suffered most during the market decline, as reflected in the "electronic components" index; 20 firms' stocks are represented here—in such component fields as batteries, capacitors, connectors, magnetic products, resistors, semiconductors, transducers, tubes. Samson's Mirek Stevenson believes the component index decline reflects the problems of price cutting, which forced a number of semiconductor firms out of business and caused revaluation of others with poor price-earnings ratios or mundane products.

Manufacturers of scientific equipment, labeled "applied science" on the chart, also suffered declines; 30 firms' stocks are included in this index, representing such fields as high vacuum, instrumentation, microwave, nuclear equipment, optics, science education (books, teaching aids, etc.), and metallurgical equipment. Price-earnings ratios in many of these companies declined by a factor of three or four during the past 18 months.

The best recovery has been made by "systems companies," represented by 15 aerospace firms, 5 communications companies, 10 electronic systems companies. The other fields represented in the graphs are made up as follows: "data processing" represents 10 manufacturers of computers and peripheral data processing equipment; "consumer electronics" is made up of 6 manufacturers of radio and television, 4 distributors of audio and other electronic equipment. The decline in consumer electronics happened a little later than the others, beginning in December '61.

panies, then selling them when they begin to look promising—are less inclined today to involve themselves with brand new ventures. "What I look for now," says one such man with stakes in half a dozen firms along Boston's Route 128, "is the older, established technical firm that's having difficulty. That's the one I want to buy."

Be good . . . damned good

How does the young entrepreneur get into difficulty? Herbert Stewart, himself a technical entrepreneur—head of Invac Corp. which manufactures data processing equipment—and a teacher at the Harvard Business School, says that a successful technical firm must be run by men who are "damned good engineers, damned good salesmen, men who know production." In the very small firm, these qualities must be embodied in a single individual: "There is no room for the generalist," says Stewart. "There may be room years later, when the company is established, but in the early years the man in charge must do everything well."

This same statement echoes through every conversation, especially with those whose business is venture capital investment. At American Research and Development Corp., for example, the investment firm which has played an important part in the growth of dozens of technical organizations—Ionics, Digital Equipment Corp., High Voltage Engineering—vice president William Elfers says the first quality he and his associates try to measure is the "technical, commercial, and ethical" quality of the top people in the prospective company. Elfers is almost embarrassed when he says this, feeling it sounds like a cliché, but he says it is no easy task to undertake, however trite it may appear: "We make at least one mistake of personnel evaluation each year." About one weak investment per dozen would be my estimate.

Elfers says the technical companies he has seen founder have done so in many cases because of an inadequate marketing effort—"They did not find the important market"—or because of an inability to master the problems of production—"The company has a product, knows its market, has the necessary capital, but troubles develop when quantity production begins and this upsets the timetable." Others cite an inadequate market research study as the first mistake of many new firms: the managers will go into production before they know enough to establish proper price or volume. Only elaborate marketing and production efforts can save them then.

The nuclear instrumentation industry has had a record of poor financial performance, largely due to problems of production: either they were overoptimistic regarding production schedules or they priced their products improperly—invariably setting prices too low and hence making themselves vulnerable to the hidden production costs that develop with quantity production. Many young firms, in this field and others, have been staggered and often ruined by unexpectedly high engineering costs —up to several times those originally budgeted—which cannot be spread over a sufficient number of repeat orders.

Indeed, these mistakes are not confined to this single industry. It seems that most new technical firms are guilty of the same errors. A couple of bright young men, highly skilled in, say, cryogenics, leave the development department of the largest company in the field in order to put their knowledge to work for themselves. They may know more about the design of a specific type of equipment than anybody in the large organization. Indeed, they may succeed in producing a new product that can be sold for less than any other on the market. But what do they do for a second product? If they have underpriced their first of the line, they likely have allowed themselves no capital for product development. In essence, they have given away their years of experience by selling the first item for too little. Then, with a shortage of capital, they must "inflame the investors" (as one entrepreneur describes it) to put more money into their firm, lest it go under.

The experience of going back to the initial source of capital and requesting a second injection is apt to be unrewarding: "The risk capital guys are rough when you need them," say entrepreneurs who have gone back for more. "They have the same warmth as the guy on the other side of a poker table." This seems a perfectly understandable human frailty: the investor, a nontechnical man, was led to believe that he was buying a piece of an organization with great potential. Perhaps too eagerly, the young entrepreneurs had assured him of their technical capability and of the great future that lay before them—all with the greatest of sincerity. Now there is trouble. Unless he is sophisticated in the ways of a young technical enterprise, the investor is apt to be jolted, even suspicious.

Faith and sophistication

Denis Robinson, president of High Voltage Engineering, stresses the importance of investor sophistication. "Looking back over the early struggling years," says Robinson, meaning the years 1947 to 1954, "the most impressive thing is how precarious our existence really was. Time after time, due to stubborn technical difficulties, we were within a few weeks of exhausting our money and our credit." It was not until its seventh year that High Voltage Engineering exceeded one million dollars in sales (current sales: in excess of $15 million). Robinson tells this story to illustrate: "I remember in the first years of the company we had extended ourselves by buying steel

ahead because of shortages due to the Korean conflict. This steel was already fabricated into specialized tanks and magnets of the size we needed for hoped-for future sales. Our order book was low, however, because the country was concentrating on rearmament and had no time or energy to consider basic research. Knowing we must borrow more from the bank, I went through financial statements with Robert Duncan of the Harvard Trust Company and then asked him to come and look at the activity in the plant. He stood gazing at one of our 5-ton pressure tanks, he tested it cautiously with an appraising toe, then murmured, 'Good hard inventory.' And next day he told me he would lend us unsecured up to 70 percent of the net quick position shown on our statements. Now he knew as well as I did how much good that inventory was if we could not succeed with our sales. He protested that he couldn't understand what in the world we were doing, but somehow he believed in us. Such farseeing risks are taken every day in the Boston area and that is what I mean about its favorable climate for development. Right around us were the institutions, the men, the resources, and above all the understanding to make our venture possible."

Can R&D be equated to capital equipment? Robinson adds this: "Anyone who thinks he can buy R&D with $200,000 or $300,000 worth of venture capital is fooling himself. R&D is expendable. We write it off each year. It has real competitive value, but only as long as it is kept going. It must be a yearly investment. The failure to recognize this has caused much of the disappointment in technological ventures since the end of World War II."

The need to grow strong

The science entrepreneur who hopes to find this kind of understanding among the Wall Street brokerage houses often meets with bitter disappointment. To be sure, these investment firms are continually looking for promising new technical companies, but a kind of reciprocating ignorance comes into play when the typical investment man gets together with the typical technical entrepreneur: neither really understands what the other is all about and one or the other—or sometimes both—is hurt because of the gulf that divides them. Unless he understands the most important need of the young technical firm—the need to develop, to grow stronger—the broker will allow his own motive, to make money by public sale of stock, to influence the firm's development. Premature issuance of stock often hurts both the technical company and those who invest in it, for its earnings-per-share invariably drop after a new influx of capital. Hence, its price declines (hurting the investors) and this makes it more difficult for the company to raise more capital later on. Further, unless the technical entrepreneur knows his firm's worth to the investor—and unless his firm is in a good bargaining position—he runs the risk of losing control.

Invac's Herbert Stewart, a prolific entrepreneur who also participates in the management of an investment advisory firm—Venture Development Corp.—says the naive entrepreneur may sell 80 percent of his company in order to raise the $80,000 that he needs; if he were wiser, says Stewart, he might raise much more money—as much as $300,000—while sacrificing only a one-half interest.

In his recent article on the financing of new technical companies, mentioned earlier, Farrington cited the sources of capital that the young entrepreneur should investigate—wealthy individuals, underwriters, venture capital firms, banks, Small Business Investment Corporations. When I talked with managers of technical firms who had been through the financing phase, I asked which sources they favored. Most said their initial capital had come from private sources—friends, with small savings and great faith, and wealthy members of the community, who could gage the integrity (if not the technical competence) of the entrepreneur. Given a choice, the entrepreneur would elect this kind of financing: "It puts pressure on the conscience when your friends and neighbors are staking you," says one, "but in other ways it's better—and cheaper."

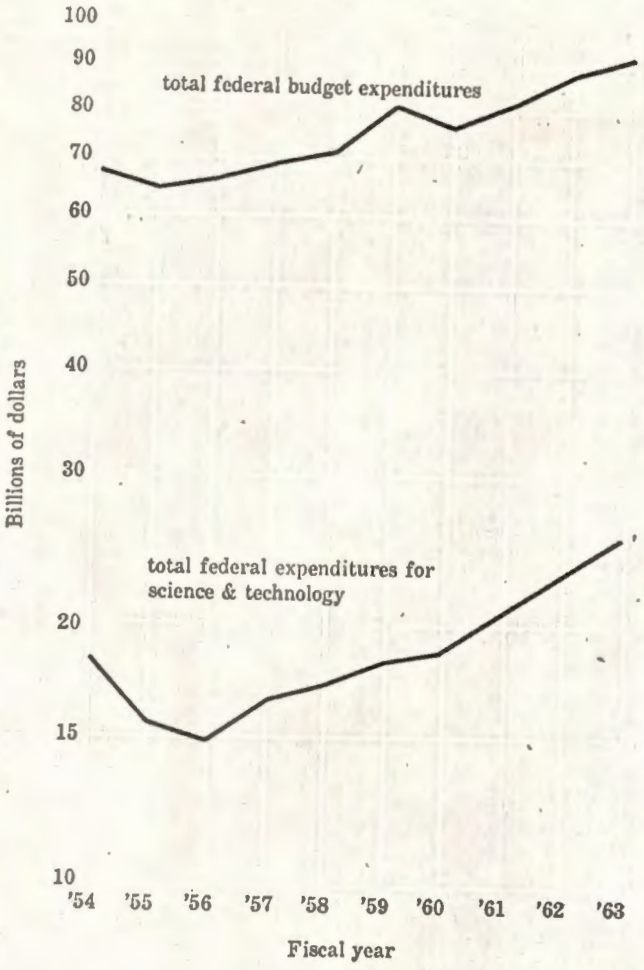
Least favored seem to be the Small Business Investment Corporations. Farrington cited these as a "largely untapped source of funds for new technical enterprises" and, indeed, this is one of their key functions, as defined by the Small Business Administration, from which they stem. The complaint expressed by technical men is that SBICs seldom provide the help they promise: "They hold themselves out as an aid to the small company. But I have never seen this to be true. They're tougher than the venture capital people and the investment bankers. They insist on having a man on the board of directors—and I suspect that one of his main functions is to get a better deal for his SBIC." Such is typical of the comments I heard.

The search for breakthroughs

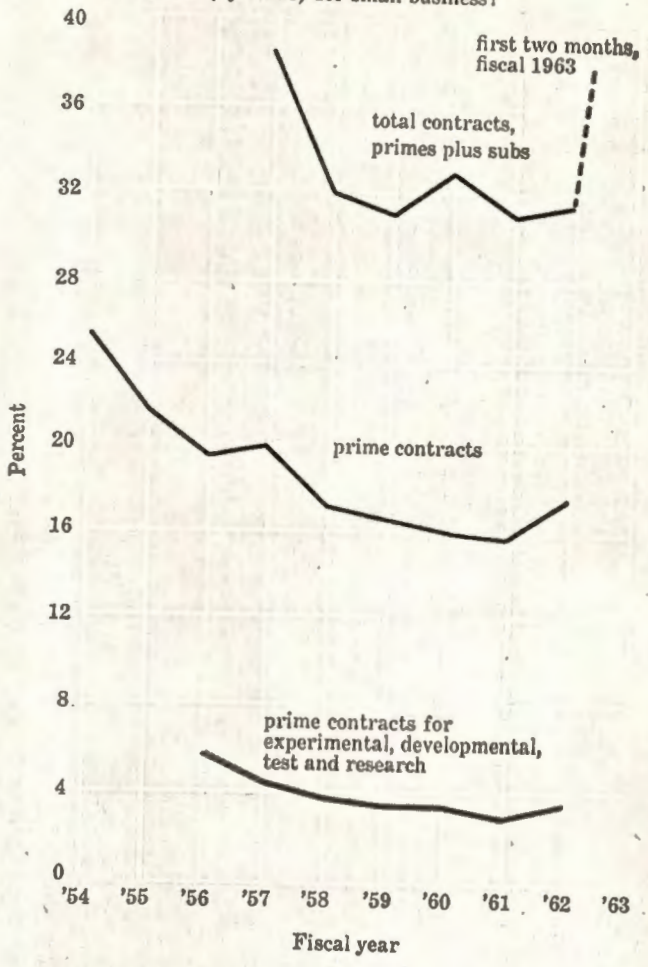
Some of the people I talked with at Arthur D. Little were scornful of the speculative investors whose ignorance of science and technology is surpassed only by their hunger for quick gains. "They ask us to advise them on *hot* new companies," says one A. D. Little man. "They comb through the technical magazines, looking for 'breakthroughs,' and then they come to us and say, 'We want to buy into lasers. What looks good?' They don't know what a laser *is*, but it *seems* good—has a nice sound."

This is part of a pattern that A. D. Little's Fitzroy Kennedy calls "the fashions in invest-

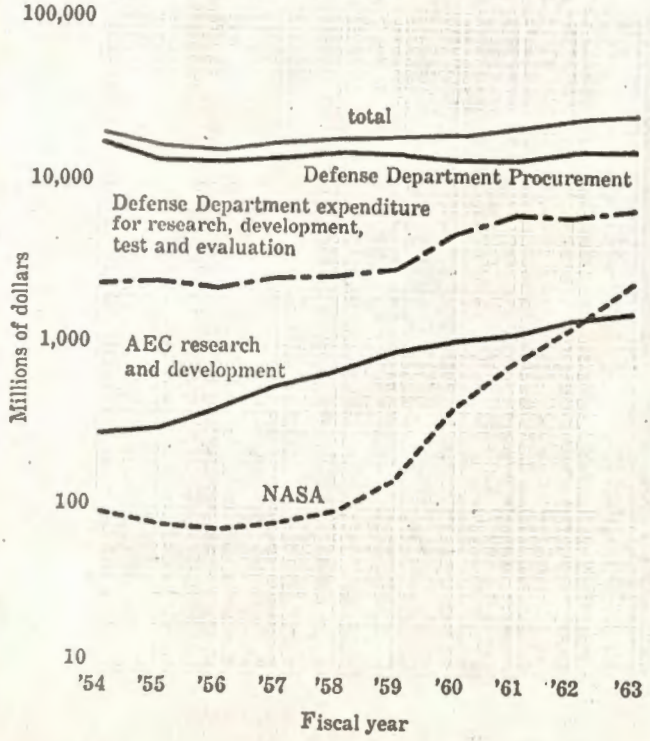
FEDERAL EXPENDITURES FOR SCIENCE & TECHNOLOGY



MILITARY CONTRACT AWARDS:
how much (by value) for small business?



WHO SPENDS WHAT FOR SCIENCE & TECHNOLOGY



The charts provide three pieces of information on federal expenditures and the technical community. We see, above left, the pace of federal expenditures for science and technology compared with the growth of the federal budget; the significant point is that expenditures for science and technology are increasing at a much faster rate than total federal expenditures. The chart at left shows where federal expenditures are increasing most rapidly, notably in NASA. But what share of these huge increases is going to the small technical companies—those with fewer than 500 employees? The chart above indicates that small companies do fairly well with military subcontracts (they did better a few years ago and seem to be gaining again, based on the early months of fiscal '63—see dotted line on chart), that they do less well in getting prime military contracts (no surprise), but that small firms scarcely figure at all in Defense Department research contracts (EDTR—experimental, developmental, test and research). Mirek Stevenson developed these statistics for **Samson Trends.**

ment." For a while, he says, the fashion was masers . . . "What a wonderful word." And before Wall Street discovered the maser, says Kennedy, "they wanted to invest in any company that ended in 'onics,' because anything with that at the end of it must be good."

Perhaps this strikes you as the flippant observation of a science high-brow, but let me tell of an experience I had during one of my visits to a young technical company in Upstate New York. On the day I talked with the founders of the company, it happened that a representative of a New York investment firm also came by. (He had heard about the company through a dentist and had "dropped in just to meet you fellows and see what was cooking.") We sat around a conference table and talked about the company and what it was setting out to do. The investment representative had little to say during the discussion and after no more than an hour he excused himself and went out for an early lunch . . . "I'm afraid this is a little beyond me anyway, so if you gentlemen will excuse me I'll see you later on." He was back two hours later to say that he was "sure you people are really onto something here and let's keep in touch and thanks a helluva lot for this experience." For all he knew, the founders could have been on the verge of producing the biggest thing since instant coffee or the cotton gin. And God only knows what he reported to his clients on Wall Street.

The translators of science

The bewilderment within the financial community is the cause of those many investor calls at places like A. D. Little. Looking around, one sees the development of such groups as Venture Development Corp. and Samson Associates, firms that have been set up by technical people to enable intelligent communication between science and finance.

Samson Associates is a science-oriented firm (Venture Development Corp. is stronger in engineering) that was set up a couple of years ago by a group of scientists—physicist Mirek Stevenson, a consultant to IBM; Cheves T. Walling, professor of chemistry at Columbia; Charles H. Townes, inventor of the maser and now Provost of MIT, and others—to advise large investors of trends in science and technology.

A firm like Samson makes an important contribution to the growth of free-enterprise technology, for it dispenses with the blind, high-risk investing that had taken place when science was the glamor word on Wall Street. Stevenson sees Samson's function as that of "reducing the variable that sets science companies apart from other growth companies." The variable is "the technological surprise."

When you look at some of the statistics—the increase in federal expenditures for technology, for example—and when you hear the opinions of wise bankers, men who have seen scores of young firms struggle to life and who therefore marvel at their great ability to survive, you drift into a soothing, velvety optimism: "Few of the new crop of science-based firms can fail. Indeed, some will have great success."

But there is another side to examine: It is true that the sciences and related fields of technology receive greater federal support than ever before. In fact, 73 percent of the federal budget increases in the past three years has gone into technical areas. And over the last couple of years, 90 percent of the budget of the National Aeronautics and Space Agency has been spent in industry; it will likely go to 93 percent in fiscal 1963. And more than 90 percent of the research and development budget of the Defense Department goes to organizations outside the Department—the aerospace industry, for example, and the university laboratories. But how much of this vast expenditure for science and technology filters down to the young technical enterprises?

The charts on the earlier page indicate that a rather small percentage of military contract dollars is allotted to small business firms. (By governmental definition, a *small* business is one employing fewer than 500 people; there are exceptions to the definition, but 500 is the general yardstick.) And what is more to the point, the small firms' share of total contracts has slid markedly since 1957—from more than 38 percent to less than 32 percent. The small firm's prospect of receiving a research contract from the Defense Department seems even dimmer, for less than 4 percent of the defense money currently being spent for research goes to the small firms.

Those who speak admiringly of the small firms' capacity to survive sometimes use the analogy of the nine-lived cat. A good parallel, for a young technical company may be on the verge of bankruptcy—or unprofitable merger—many times before it has sufficient strength to survive. The sad but irrefutable consequence of these brushes with oblivion is an erosion of control: For each new infusion of capital, it may be necessary for the founders to surrender a fraction of their control. If the fraction is 20 percent, and if five such sacrifices are necessary during the early years, their eventual role in the company's future is titular at best.

As one seasoned (and now successful) entrepreneur told me, based on having participated in the founding and nurturing of *nine* technical enterprises, "Starting a new technical company is absolutely the *worst* way to make money."

What is the *best* way?

"The exterminating business," he says. "You'll get your money back in two years."

For more information on the young technical enterprise, see p. 101.

Sent copies to Bob O'Hagan
Jack Atwood
3/10/65 John Jones

U.S. NAVAL ACADEMY ALUMNI ASSOCIATION
ALUMNI HOUSE
ANNAPOLIS, MARYLAND 21402

March 8, 1965

Mr. Kenneth H. Olsen, President
Digital Equipment Corp.
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

The burgeoning multi-billion dollar "inner space" industry is certainly commanding the headlines these days!

The May issue of SHIPMATE magazine, the official publication of the U. S. Naval Academy Alumni Association will be a special number devoted entirely to the vital subject of OCEANOGRAPHY.

Many people feel that "inner space" is destined to have an even greater impact on our Nation's defense and economy, than "outer space".

Among those writing special articles for this big May number are Admiral Knoll, the Oceanographer of the U. S. Navy, Admiral Galantin, until recently the head of the Navy's Deep Submergence project, Captain Treadwell and others. We hope that your distinguished firm will want to be identified with this important number which will be so widely read by the hard core of the Navy around the globe and by countless executives tied up with the whole subject.

Since the May number will be so widely read and used by the very people you want to reach, may we have your consideration on running a full page, which is only $375? A half is $215. A quarter $110. Regular 7 x 10.

Among those who advertise with us are Westinghouse, General Electric, General Dynamics, Aerojet, Lockheed, Douglas, AMF, Chrysler, General Motors, Straza, ACF Electronics, Corning Glass, Ocean Space Services, etc.

May we have your consideration on this suggestion?

Very sincerely yours,

Charles E. Thorp

PAKTRON
DIVISION ILLINOIS TOOL WORKS INC.
1321 LESLIE AVENUE · ALEXANDRIA, VA. 22301 · KING 8-4400

March 5, 1965

Mr. Kenneth H. Olsen
Digital Equipment Corporation
Maynard, Mass.

Dear Mr. Olsen:

Our electronics research and design staff will have a number of significant developments to present in the near future ... developments that we feel will be important to a number of specific individuals within your organization.

The people in your organization who will be most interested are those in development and design who work with electronic components. Will you please help us make our information available to them?

On the attached form we list those names now in our records. Will you please have it corrected and completed and returned to us in the enclosed self-addressed, stamped envelope? This will be, we are sure, of mutual benefit.

Thank you so much for your cooperation.

Cordially yours,

Robert L. Henry

Robert L. Henry
General Manager
PAKTRON
DIVISION ILLINOIS TOOL WORKS INC.

RLH:nd
Enclosure

NELSON WALKER ASSOCIATES, INC. Management Consultants
122 EAST 42ND STREET • NEW YORK 17, NEW YORK • YUKON 6-1760

March 5, 1965

Mr. Kenneth H. Olsen, President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

We are advisors to corporate management when they are confronted with the problems of executive selection. We have been of significant help to domestic and foreign clients.

Although American foreign operations have grown in size and importance during the past few years, most continue to require increasing numbers of experienced managers for domestic needs. It has been our observation that there are not enough competent senior managers to go around for U.S. requirements. Outstanding American Executives engaged in international activities are limited in number, and usually locked into their American employers by attractive compensation and additives.

A capable corporate Executive functioning in a foreign atmosphere handles many "unbusiness like" but complex questions of national and international politics on a daily basis. Hopefully his decisions will be made on the knowledge of foreign countries' business, social, political, and sometimes, religious mores. His company's future will be dependent upon the experienced judgement he exercises in these delicate and very often crucial areas.

Finding superior men by way of our broad acquaintance has often been the solution to the many problems on which overseas profits depend. Invariably, we produce many able candidates from whom satisfactory selections can be made.

We can help you as we have helped others.

Our work is highly personalized and confidential. Our staff is experienced and discreet and our fees are modest for the quality of work performed.

May I phone you within the next seven to ten days?

Sincerely,

R. E. Thompson
Vice President
International Division

P.S. Incidentally, you might also be interested in reading a timely letter in the January 1965 issue of FORTUNE, page 108, written by me on international personnel problems.

R.E.T

ACCELERATOR LABORATORY

THE UNIVERSITY OF TEXAS
AUSTIN 78712

Nick Mazzarese
[illegible] 3/10/65

March 5, 1965

The President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Sir:

We have been negotiating with your company to supply us with a P.D.P.-7 computer to be delivered to the University by April 29. We confirmed this order by telegram as your company requested on February 17, and we received a confirming letter from your company dated February 19 (copies enclosed).

Although you had not received the official purchase order forms, we thus had a firm agreement to purchase this equipment and a firm delivery date of April 29, 1965.

Your Mr. Jones has now contacted us by telephone saying that the delivery is delayed for some three months because the official purchase order had not been received in spite of our confirmatory telegram of February 17.

I must protest this unwarranted action, and request you to reinstate our agreement. We will withhold the purchase order until we receive a reply from a responsible official of your organization giving us a reliable delivery date.

One further point, in our original agreement, you were to train our staff in our laboratory on maintenance and use of the computer. Will you confirm this feature in the agreement; from recent discussions with members of your staff, it would appear that this, also, is being questioned.

Sincerely,

J. W. Jagger
Chief Engineer

JWJ:bm
cc: Dr. D. C. Davis, AEC
Mrs. M.K. Doss, UT
Mr. P. Williams, Datronics

512-471-3434 P→P

GK 1-[illegible]

MAYNARD, MASSACHUSETTS
TWinoaks 7-8822 TWX MAYN 816

19 February 1965

Director Accelerator Laboratory
University of Texas
Austin, Texas

Dear Sir:

I understand that the Atomic Energy Commission has accepted our proposal for a PDP-7 computer system for your laboratory. We are, of course, very pleased to have this good news. The system will be delivered on 29 April 1965, with the exception of the Line Printer, which will be delivered on 15 July 1965.

There will be no field installation charge on the Line Printer. If there are any questions about this system, please do not hesitate to call the undersigned.

Very truly yours

John Allen Jones

JAJ:oh

ACCELERATOR LABORATORY

THE UNIVERSITY OF TEXAS
AUSTIN 78712

NIGHT LETTER
(Feb. 17, 1965)

To: John A. Jones
Digital Equipment Corporation
Maynard, Massachusetts

I confirm that your quotation of December 64 for a PDP-7 has been accepted by AEC. Purchase order will follow in about 2 weeks.

Signed: J. G. Page
Accelerator Laboratory
University of Texas

Electronics

A McGraw-Hill Publication
330 West 42nd Street, New York, N.Y. 10036

March 4, 1965

Dear Mr. Olson:

Thanks again for your courtesy during my visit to your plant last month, and please excuse my delay in getting back to you by letter. I no sooner returned from Boston than I was off on a couple of more trips and I have had trouble catching up.

During my visit, we had discussed the type of articles that DEC might contribute to the special series of articles that I am gathering on the subject of microcircuit computers. I would like to suggest two:

First, for the section which will deal with the uses of microcircuits in specific systems, I would like to see an article on the use of your hybrid circuits in the PDP-8 computer. What should be stressed in the manner in which the hybrid circuits have helped to reduce the cost of this computer to $18,000 and have helped you to set up to produce the computers "like tv sets," as you said. I found very interesting your comments on the low cost of the circuits, their adaptability to using both semiconductor chip devices and integrated circuits, and the ease with which they can be mixed with discrete components in hybrid assemblies. These are the factors around which the article should be organized.

Ed / The basic organization and operating characteristics of the computer itself, and the techniques used to make the ceramic circuits should be briefly summarized. This will provide the background information the reader will need. I don't mean to be arbitrary in setting the scope and orientation of the article, but I do want to insure that it will dovetail with other articles in the series, which will be concerned primarily with the reasons various types of circuit fabrication, assembly, interconnection and packaging designs are appropriate for various types of computer systems. The approach suggested will, I think, allow the article on the PDP-8 to focus on this theme.

Tom Second, I would like an article on the techniques you have developed for testing the modules prior to assembly and in the assembled computer. This would be for a section of the series, dealing with test techniques. Please do include the test programing technique that enables a computer to be used to run the test system and analyze whether the operating parameters of the modules are within tolerance. Also

Member: Audit Bureau of Circulations, Associated Business Publications

at one point in our conversation you mentioned that you are using a similar setup to test integrated circuits, but felt it might be cheaper to test these by another method. Have you reached a conclusion and, if so, would you devote a section of the article to the pros and cons of the computer vs. the special test set approach?

I'll be looking forward to your reply. Of course, the DEC personnel who write the articles will receive bylines and our usual honorarium.

Cordially yours,

George Sideris
Manufacturing Editor

GS:lme
cc: Tom Maguire

Mr. K. Olson
President
Digital Equipment Corp.
Maynard, Massachusetts

AEL DEVELOPMENT AND RESEARCH DIVISION, INC. CONTROLLED AUTOMATIC PROCESSES, EQUIPMENT AND MACHINES
Subsidiary of Automation Engineering Laboratory, Incorporated

84 Commerce Road, Stamford, Connecticut — (06902) – 323-1101

March 3, 1965

Mr. Kenneth Olsen, President
Digital Equipment Company
Maynard
Massachusetts

Dear Mr. Olsen:

I had the pleasure Tuesday of meeting Mr. Maynard Sandler and Mr. Lauren Prentice, reviewing with them our method of operation and observing the operations being performed in your Plant #5.

Of special interest to me was the prospect of automating the production of the little alumina module, for these reasons:

1. It is an area of opportunity that is swiftly expanding but still has some lead time available for a solid engineering program

2. The automation program can easily be broken down into stages so that economic benefits can be realized from a piecemeal implementation

3. Paragraph 2 also results in a limited commitment on your part in automation resulting in a progressive acquisition of benefits with a limited risk of investment

4. There is a good fit between our capabilities and this task

5. Your rate of growth indicates the continuous generation of new requirements and therefore the prospect of a long relationship between our companies is indicated

Mr. Prentice mentioned that there was still a certain amount of basic engineering to be done on the module before a commitment to automation could be made. May I suggest, therefore, in this interim period, that you and your associates visit our facility to see

for yourselves the kind of work we do and meet our management and engineering staff.

I appreciate the courtesies extended to me by Messrs. Prentice and Sandler. Please give them my very best regards. I look forward to meeting you in the near future.

Sincerely yours,

Louis Soltanoff
Project Director

LS:elf

f:lc

INTERNATIONAL
SCIENCE AND
TECHNOLOGY
a Conover-Mast Publication / 205 East 42nd Street, New York, N.Y. 10017 / MUrray Hill 9-3250

March 2, 1965

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

As promised, here's a note firming up our panel discussion on Thursday, March 25th. Rather than the 2 p.m. time I gave you we'd like to meet at noon so we can have some lunch together, get acquainted and then launch into the discussion. We'll meet in the conference room on the 16th floor of the Conover-Mast building, 205 East 42nd Street, New York City.

It is tempting to meet your request for more details by trying to list a lot of questions we would like answered, but I think any attempt to do this would tend to straightjacket and thereby defeat the purpose of the discussion. Let's simply say we want to discuss in a relaxed way the problems that a technical man like yourself has in starting a science-based company. More important, how does he nurture it along to success -- why do you think your company has succeeded, for example. A great many things could come out of such a discussion by five people like yourself -- I imagine we might touch on such questions as why did you decide to start your own company, what were your toughest times, how do you maintain the necessary climate for creative research, how does a technical man find his way around the financial community, etc. We hope these questions can be discussed in an anecdotal way and while I doubt we can emerge with any set of rules for success, perhaps we can give our readers some insight in how some technical men succeed where so many fail.

Some of our questioning may be based on an earlier article which I am enclosing, "The Science Entrepreneur", and you might look at our upcoming discussion as a sort of follow-on to this article. Regarding the mechanics of the session, we tape record the proceedings and check our edited transcript with you. Our photographer will be taking photos to accompany the published interview. The enclosed copy of our "Brain Drain" piece will give you some idea of the format.

Once again thanks for agreeing to join us, and I'm looking forward to seeing you March 25th.

Cordially,

Michael F. Wolff

Michael F. Wolff
Associate Editor

MFW/pjs
Encl.

PARTICIPANTS IN I S & T PANEL DISCUSSION

Isaac L. Auerbach: president and founder of Auerbach Corp., a systems-design and consulting organization in Philadelphia specializing in the collection, processing, storage, retrieval, and use of information. All of its work is aimed at improving the use of information as an operational and management resource. The firm was founded in 1957 with a technical staff of one and a secretary. It now employs several hundred people of whom about 75% are technical professionals. Auerbach himself was one of the early workers in computer and information technology and was an original member of the Eckert-Mauchly Computer Corp.

John V.N. Granger: president and one of the founders of Granger Associates, a Palo Alto electronics company involved in development, manufacture and application of advanced equipment and integrated systems for radio communications, and related areas of technology. The firm was founded in 1956 by Granger and two radio engineers from Stanford Research Institute. Today the firm employs a few hundred people and its sales are about $5 million. Products include antennas, ionospheric sounding systems and graphic data scanning and presentation systems. Granger himself was assistant director of engineering research at Stanford from 1949 to 1956.

Kenneth H. Olsen: president and co-founder of Digital Equipment Corp., a Maynard, Mass., manufacturer of digital computers and associated equipment. The firm was founded in 1957 and now employs over 800 people; sales are about $15-20 million. Olsen was with the computer lab at MIT Lincoln Laboratory before starting Digital Equipment.

Denis M. Robinson: president and one of the founders of High Voltage Engineering, a Burlington, Mass. firm that designs, develops and manufactures

particle accelerators for a variety of applications in science, industry and medicine. The company was founded in ~~19~~ 1946 and employs more than 700 people. Sales are about $20 million. Robinson worked in the U.S. during World War II ~~xxx~~ and immediately after was an electrical engineering professor at the Universtiy of Birmingham, England.

Marshall P. Tulin: vice president and co-founder of Hydronautics, Inc., a Laurel, Maryland, firm founded in 1959 to do research in hydrodynamics and related fields. The firm employs about 80 people and sales are around $1 million. It does fundamental research in such areas as supercavitating flows and turbulence, applied research in a number of different areas including hydrofoils and torpedo dynamics, and also designs research equipment. Tulin and his partner worked for the Navy Dept. before starting Hydronautics and presently divide responsibilities with Tulin concentrating more on actual participation in the research itself.

① product
② price
③

< One boss
-
- goal
<

- eng
- non-prof
- sales

NEW YORK WASHINGTON

The Research Institute of America, Inc.

Carl Hovgard, Pres. Leo Cherne, Exec. Dir. Joseph D. Ardleigh, Exec. Vice Pres.

589 Fifth Avenue, New York 17, N.Y.

March 2, 1965

Mr. Kenneth H. Olsen
Digital Equipment Corp.
P. O. Box 22
Maynard, Mass.

Dear Mr. Olsen:

We would appreciate your telling us now how you prefer to handle your future Executive Membership fees. There is no need to send payment until we bill you.

Will you please check the enclosed memo indicating your preference in term and put it in the mail today?

Thank you.

Sincerely,

T. J. Heming

TJH/ae

Sent copies to Lois Evans in Accounting

Returned memo on 3/5/65 advising that we wanted to pay $20.00 per month for the 12-month period ending June 30, 1966. Payable $240 in advance.

Elsa

INTERNATIONAL
SCIENCE AND
TECHNOLOGY a Conover-Mast Publication / 205 East 42nd Street, New York, N.Y. 10017 / MUrray Hill 9-3250

March 1, 1965

Kenneth H. Olsen
President
Digital Equipment Corp.
146 Main Street
Maynard, Massechusetts

Dear Mr. Olsen:

Just a hasty note to thank you for agreeing to participate in our panel discussion and to advise you of the date. It will be Thursday, March 25, at 2 p. m., probably preceded by a luncheon at noon which I hope you can attend also.

More details will follow but I did want to let you know the date as soon as possible. Please send me some information about you and the company when you can.

Cordially,

Michael F. Wolff

Michael F. Wolff
Associate Editor

copy to Ken Olsen

FEB 23 [illegible]

MESA SCIENTIFIC CORPORATION

2930 WEST IMPERIAL HIGHWAY · INGLEWOOD, CALIFORNIA 90303 · PHONE 756-1343 (AREA 213)

February 18, 1965

Mr. Ted Johnson
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts

Dear Ted:

Bob Ryle suggested I write to you proposing our services to assist your product planning or product development department in the critically important job of defining specifications for your next generation product line.

As you probably know, Mesa has been retained by a number of companies to assist in product evaluation, specification, and development. These clients include Astrodata, Bunker-Ramo, Douglas Aircraft, General Precision, General Telephone, Hoffman Electronics, Litton Industries, Nortronics, Pacific Data Systems, and RCA. We have developed or are currently at work on software packages for ASI, Beckman, Bunker-Ramo, CCC, Honeywell, and Univac.

We also are engaged in system engineering, programming, and system integration involving the computers of all major U. S. manufacturers. The experience and knowledge that has thus been acquired by our 170 employees in eight locations around the Country can be of great value to a manufacturer such as DEC.

If DEC management feels there is a specific task which we could perform in this area, we would be pleased to submit a definitive proposal.

Sincerely yours,

Vern

V. D. Walker
President

VDW:cc

cc: B. L. Ryle

Ken
This didn't provide anything specific. We would have to be more definite in tendering a possible Request for Proposal.
Ted

Ken

UNIVERSITY OF MARYLAND
EXECUTIVE BUILDING
7100 BALTIMORE AVENUE
COLLEGE PARK

PHONE 779-5871

OFFICE OF INDUSTRIAL APPLICATIONS

February 17, 1965

Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts

Gentlemen:

This office concerns itself with aspects of an effort to transfer into industry some of the new technology emerging from the NASA space research and development programs. It is believed that a proportion of this technology will find profitable commercial and industrial application.

I write specifically to ask if your Company would have an interest in a ferrite core holder. This innovation is a technique for producing a compact ferrite core holder to simplify matrix modular assembly. The technique can be adapted to other components where mounting and positioning is important to circuit operation.

If you would care to have further details for purposes of evaluation, please let me know. If at the same time you would let me have some information about your present and projected manufacturing interests and problems it would help immensely in making selections of other new technology for your examination.

Apart from specific things of this kind, the office is also conducting general inquiries to try to define factors facilitating or impeding the transfer of new technology to industry. Any comments you may care to make on this subject would be invaluable to us now, without excluding the possibility of more detailed discussions, if you are willing, at a later date.

I look forward to having your views.

Very truly yours,

Terry M. Luxford

Terry M. Luxford
Research Assistant

TML/dl

GIVEN A LEVER LARGE ENOUGH YOU CAN MOVE THE WORLD . . .

E. NORMAN KAGAN COMPANY

MANAGEMENT CONSULTANTS SINCE 1941

EMPIRE STATE BUILDING • NEW YORK CITY 1 • LONGACRE 5-3711

FEBRUARY 17, 1965

DEAR MR. OLSEN:

I AM REQUESTING A MEETING ABOUT DOING MORE BUSINESS, MORE COMPETITIVELY; AND MORE PROFITABLY.

MY CLIENT LIST JUSTIFIES YOUR LISTENING TO MY STORY ABOUT GENERATING MORE SALES AND PROFITS THROUGH A NEW, MORE EFFICIENT PLAN FOR BUSINESS FULFILLMENT.

INCREASED EFFICIENCY FROM ALL ASSETS IS SECURED BY USING STOCKLESS PURCHASING, PURCHASE DISCOUNTS THAT DON'T SHOW, BALANCED AUTOMATIC REPLENISHMENT, INTERNAL PRODUCTION AND INVENTORY CONTROL UNDER MY ZERO INVENTORY SYSTEM; AND, WITH OR WITHOUT OFFICE ELECTRONICS.

WE ARE EXCLUSIVE AND DIFFERENT EVEN TO SERVING A LIMITED CLIENTELE ON A TRULY PERSONAL SERVICE PLAN.

THIS SERVICE ONLY BENEFITS PEOPLE WITH DIRECT RESPONSIBILITY FOR DOING BUSINESS PROFITABLY.

I WANT TO MAKE A SPECIAL TRIP FOR THIS MEETING ON THE 24TH OF FEBRUARY.

WOULD YOU PLEASE CONFIRM YOUR AVAILABILITY OR SUGGEST A DATE CONVENIENT TO YOU?

SINCERELY,

E. N. KAGAN

P. S. WE HAVE TAKEN SOME OF OUR OWN ADVICE AND HAVE MOVED TO THE SUBURBS TO AVOID THE COMMUTER PROBLEM AND THE LOSS OF TIME. OUR NEW ADDRESS IS:

88 SEARINGTOWN ROAD, SEARINGTOWN, L. I.
516 - MA 1-8810

February 16, 1965

Mr. Kenneth Olsen, President
Digital Equipment Corp.
146 Main Street
Maynard, Mass.

Dear Mr. Olsen:

I would like to express my thanks for your time and help toward my thesis. As one of my finest "success" examples, you certainly present an inspiring model.

If I can ever be of assistance to you in any way, please do not hesitate to call on me. You will be receiving an abstract of my thesis sometime in April. Best wishes for much continued success with your company.

Sincerely,

Harry Schrage
23 Oxford Circle
Belmont, Mass.

HS/ps

THE CHASE MANHATTAN BANK

1 Chase Manhattan Plaza, New York 15, New York

February 16, 1965

ROBERT V. HIGDON *Technical Director Electronics Industry*

Mr. Kenneth H. Olsen, President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

During the month of April I expect to be visiting many of our friends in the electronics industry in Italy, France, Germany, Switzerland, England, and possibly other countries if circumstances permit.

On a previous trip I found that the broad exposure to the European industry provided information and perspectives helpful to U.S. companies in their foreign activities. In addition, various opportunities for licensing and joint ventures were uncovered.

I also had the pleasure of visiting the foreign subsidiaries or affiliates of many of our U.S. corporate friends which has proved helpful in our subsequent work with many of these organizations.

This year I am making an effort to take with me a portfolio of specific items of interest to companies here in the way of information, opportunities, or visits to which I can give particular attention during my travels. I would like to invite you to let me know of any matters of interest to you in this regard by dropping me a note or giving me a call in the next few weeks and I, in turn, will report back to you on my return.

I am looking forward to hearing from you and to the opportunity to be of assistance.

Sincerely yours,

Robert V Higdon

ELECTRONIC IMAGE SYSTEMS CORPORATION
98 BROOKLINE AVENUE
BOSTON, MASSACHUSETTS 02215

16 February 1965

Mr. Kenneth Olsen, President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Ken:

Enclosed please find two copies of our new brochure on our compressed-signal facsimile system. Its operating specifications can be summarized as follows:

> Into an ordinary telephone line, Telikon II transmits a standard-size document at full resolution in about one minute, whereas conventional systems require five or six minutes. For secure transmissions, conventional systems take even longer whereas ours still sends the page in one minute. Since our signal is binary digital data, Telikon II is compatible with standard encrypting equipment. There is no radiation from our print-out system (or, indeed, from any other part of our machine) so that, unlike conventional systems, Telikon II can be made completely secure. Its cost is roughly twice that of ordinary spark-and-drum facsimile.

A laboratory model of our machine (made out of DEC modules, of course) has been on demonstration for some five months, successfully transmitting on a voice channel from Boston to New York and back (400 miles). As the samples in our brochure show, we still have a number of technical problems (hum, non-linear deflection, non-uniform focus) but we are getting there. The brochure also contains samples of our machine operating as a high-speed non-impact alphanumeric printer.

Our company was formed four years ago by a group of M.I.T. people, specifically for the purpose of developing our ideas on compressed-signal facsimile systems and efficient data modems. In addition to our proprietary products, we have designed and are now building for NASA the first of four photofacsimile recorders that will receive signals from the various sensors in the TIROS and NIMBUS satellites, and print 10" x 12" pictures with 64-level grey scales and with resolution and speed variable over large ranges by front-panel knob controls.

BOX 36, KENMORE STATION, BOSTON, MASSACHUSETTS 02215 • TEL. (617) KE 6-5390 • CABLE: TELIKON

In case you find it useful, I enclose some information about our corporation and our senior technical people.

I enjoyed our meeting last Monday, and I would be delighted if between label printers (on which we are about to receive a very complete market study) and computer-controlled drafting machines we find sufficient reason to meet and talk some more. In any case, I want to thank you for the many kindnesses we have received from you and your people; working with you has been very pleasant.

Sincerely yours,

ELECTRONIC IMAGE SYSTEMS CORPORATION

Robert Wernikoff, President

RW:jct

Enclosure

I·C·T

INTERNATIONAL COMPUTERS AND TABULATORS LIMITED

UNITED STATES BRANCH

839 STEWART AVENUE, GARDEN CITY, NEW YORK 11533

TELEPHONE: 516 CH 8-5656 · CABLES: TABULORIAL GARDENCITYNY · TELEX: 01-25515

February 15, 1965

Mr. K. Olsen, President
Digital Equipment Corporation
Maynard Mills
Maynard, Massachusetts

Dear Mr. Olsen:

Mr. Hugh Osborn of our Planning Division in London has asked us to contact you regarding his visit to your company. Due to a change in his schedule, he will be unable to come to your firm on March 1, 1965. However, he has suggested the date of March 3 as an alternative; if this is convenient to you, would you please contact the writer so that the information may be passed on to him.

Very truly yours,

Antoine Ahmarani
Manager - Overseas Liaison

/m

XEROX

February 15, 1965

Mr. Kenneth H. Olsen, President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Ken:

Thank you for your letter of February 3. Both we and our subsidiary, EOS, have been interested in ultra-high precision CRT's, and I was particularly interested in hearing of your experience with the Itek tubes. We had visited them and looked the tube over through the office of Gil King at Itek, who is a former associate from IBM. I am taking a new reading on our requirements.

Some of us are planning to spend March 2 at MIT with the MAC people, taking a look at their console requirements and also getting up to date on their more general thinking. This is something I should like to discuss with you also.

Sid Fernback told me that the LRL PDP-6 was installed. I'm also planning a visit out there soon, and will be interested to see how their "octopus" concept is working out. Fernback is going all-out to get support for the Solomon concept, but admits that it is a special-purpose approach oriented heavily toward LRL's specific requirements.

Let us know when you will be in this area; we should like very much to see you.

Sincerely yours,

Sullivan G. Campbell
Assistant Vice President

SGC:bp

BEAR, STEARNS & CO.
MEMBERS NEW YORK STOCK EXCHANGE
ONE WALL STREET
NEW YORK 5, N.Y.

February 15, 1965

PERSONAL & CONFIDENTIAL

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Ken:

A copy of a recent D & B Report of Digital recently arrived on my desk. It indicated that you may be using bank debt more now than you have in the past.

I know that you have borrowed some money for A R & D on a long term basis, but you might be interested in obtaining substantially larger long term debt money from an outside source at this time. If so, I would be very pleased to work with you in obtaining whatever funds you may need on as attractive terms as we can possibly negotiate on your behalf.

Best regards.

Sincerely,

Melvin J. Gardner

MJG:mj

LYBRAND, ROSS BROS. & MONTGOMERY

COOPERS & LYBRAND
IN AREAS OF THE WORLD
OUTSIDE THE UNITED STATES

80 FEDERAL STREET
BOSTON 02110

February 11, 1965

Mr. Kenneth Olsen, President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Ken:

On Thursday, February 25th, we are planning a meeting for a small group of clients with our partners and managers, followed by cocktails and luncheon, at the Algonquin Club of Boston.

The subject of the meeting is executive compensation and related tax implications. A copy of the program is enclosed. During the course of the program, we hope to have informal discussion and questions on these topics. This is essentially the same material we covered at our meeting of December 16, 1964, which you were unable to attend.

Our meeting at the Algonquin Club, 217 Commonwealth Avenue, Boston, will begin at 11:15 A.M., followed by cocktails and luncheon. Our plan is to be through luncheon not later than 2 P.M. The meeting itself will be on the third floor of the Club.

We would be very pleased to have you attend the meeting. It will assist us if you will let us know if you can do so. We hope very much that you can be with us.

Sincerely yours,

Roscoe Irving

REI:RWR

Enclosure (1)
Program

LYBRAND, ROSS BROS. & MONTGOMERY
BOSTON OFFICE - CLIENT MEETING
"EXECUTIVE COMPENSATION"

11:15 A.M. - February 25, 1965

Algonquin Club, 217 Commonwealth Avenue
Boston, Massachusetts

AGENDA

Robert D. Collins
"Sharing Profits Through Deferred Plans"

Stephen Stewart
"Executive Compansation Plans"

Warren G. Wintrub
"Tax Implications of Executive Compensation"

Cocktails

Luncheon

MORGAN GUARANTY TRUST COMPANY
OF NEW YORK
23 WALL STREET, NEW YORK 15

New York February 5, 1965

C. CHESNEY McCRACKEN
Assistant Vice President

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
Main Street
Maynard, Massachusetts

Dear Ken:

Next week I will be leaving our New England group to take up a new assignment with the group that handles our bank's petroleum business. In most respects I am looking forward to this new challenge but I shall certainly miss my regular contacts with you, Harlan and Dick Mills.

John Glorieux and Peter Milton will soon be joined by Neil M. Holt, Assistant Vice President, and they will continue to follow the progress of Digital Equipment with interest. I hope that I have the opportunity to see you all occasionally and also hope that if I can ever be helpful, you will give me a call.

Kind regards,

Sincerely yours,

Ches

Junior Achievement of Eastern Massachusetts, Inc.
256 Huntington Avenue, Boston 15, Massachusetts

A 4463

DATE February 3, 1965

Your tax deductible subscription of $ 100.00
is hereby gratefully acknowledged by the Board of Directors.
It will be used to enhance Knowledge of our
American Free Enterprise System among our youth.

Receipted by P Hersey

Digital Equipment Corporation
Building 12, 146 Main Street
Maynard, Massachusetts
Mr. Kenneth Olsen, President

JUNIOR ACHIEVEMENT

256 HUNTINGTON AVENUE / BOSTON, MASSACHUSETTS 02115 / CO 6-4423

February 4, 1965

Mr. Kenneth Olsen, President
Digital Equipment Corporation
Building 12, 146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

Your recent contribution to Junior Achievement has enrolled you as a member for 1965 and with our sincere thanks, we enclose our official acknowledgment.

Your assistance is helping to maintain a Junior Achievement Business Center and make this unique educational program available to the teen-agers in Greater Boston.

Because of the growing need to increase the interest and knowledge of our young people in the field of business, your continuing support is of paramount importance to us. You have helped. We are grateful and we hope you will persuade others to do likewise.

Sincerely yours,

E. W. Lay

Ernest W. Lay
Treasurer

Your generous check is very much appreciated.

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TO: KHO

I asked the AIM what their "President's Council" was and received a telephone call & letter from Mrs Preston. The information is interesting but quite similar to the AMA. I suggest we not spend the $150 to join.

2-12-65

SAID

Win

NO

American Institute of Management 125 East 38th Street, New York 16, N. Y.

CHARTERED — NOT FOR PROFIT CABLE: MANAGEMENT, NEW YORK

February 3, 1965

Mr. W. R. Hindle, Jr
Digital Equipment Corporation
146 Main Street
Maynard, Mass

Dear Mr. Hindle:

The Presidents' Council of the Institute consists of many of the most eminent business administrators in business, non-profit, educational and religious organizations.

Realizing the tremendous responsibilities and the demands made upon the time of presidents, we do not ask them to take time from their busy schedule to attend meetings, seminars and other time consuming projects. Of course, such get togethers are productive. However, our studies are designed to present you and your officers with an insight into the policies and practices of excellently managed companies that cover every area of that company's operations. The Management Audits, as published by the Institute, are fast reading, comprehensive and highly informative. In providing your executives with the studies and many other research projects conducted by AIM, you will be enhancing their management knowledge and know-how, training them for top managerial positions and assuring your organization of a continuing success.

From time to time we do call upon the experience and wisdom of our members to ask their advice in many of our research endeavors. Your efforts and guidance will be of great value. This is accomplished by telephone, short questionnaire or personal visit. It is only through the splendid cooperation of our members that AIM and its Presidents' Council have been so successful. The combination of the actual experience of presidents of outstanding companies, and the Institute's own research efforts, results in a management service that will present your executives with the finest management information available, and will benefit your company many times the annual dues of $150.

Sincerely,

Sybil Preston (Mrs)
Director of Admissions

SP:pm

THE MARK OF MANAGEMENT EXCELLENCE
AMERICAN INSTITUTE OF MANAGEMENT
A I M

UNIVERSITY OF SOUTHWESTERN LOUISIANA

Joel L. Fletcher, President

LAFAYETTE, LOUISIANA

February 3, 1965

Mr. Ken Olsen, President
Digital Equipment Corporation
Maynard,
Massachusetts

Dear Ken:

I was pleased to have the opportunity of visiting DEC this past week. I am very much impressed by your operations and by the dedication of your personnel.

The PDP-6 seems to be an outstanding machine, and we are very excited over the chances of working with it during the summer. I feel that the machine has a tremendous future.

Please let me know if I can be of assistance in any way.

Sincerely yours,

James R. Oliver
Dean, Graduate School and
Director, Computing Center

JRO:mc

of a research problem to each individual for solution with the aid of the computer. Each participant will schedule a minimum of four hours of computer time under an open shop arrangement. Additional time may be scheduled on the computer in late afternoon and evening sessions, as well as on weekends.

A unique feature of the Conference will be the scheduling of seminars on time-sharing. This is expected to be an extremely important development in computers in the very near future. Through use of the Digital Equipment Corporation PDP-6 computer and three remote terminals time-sharing demonstrations, studies and assignments will be included in the Conference.

The visiting lecturers will conduct informal but scheduled afternoon and evening sessions during 2- or 3-day visits. They will also be available to the participants for first-hand discussions dealing with problems in the field of computing. The schedule will allow ample time for informal conferences among participants and staff.

CRITERIA FOR SELECTION

Participants will be selected from college teachers of mathematics, science or engineering who have firmly committed themselves to teaching.

Selection of participants at the beginning level will be limited to those with little or no previous training in the field of computers. The advanced level group will include those with some computer training and/or experience.

A minimum of 3 years of teaching experience will generally be required and persons nearing retirement will not be considered. Preference will be given to those who plan to establish computing centers on their campuses and who need additional training to operate such computing centers effectively. In addition, maximization of the number of institutions represented will be considered. A knowledge of algebra is required for participation in the Conference.

FACILITIES

All formal meetings during the Conference will take place in the facilities of the University of Southwestern Louisiana. Books and journals in the computing field will be available for use by participants. Space will be provided for informal meetings among the participants and among the participants and staff members.

A unique feature of the Conference will be availability of two computers for use by the participants. One will be the IBM 1620 computer, a relatively small and medium speed machine which is a variable word length decimal machine. It is equipped with a disk drive, capable of storing 2 million digits on each disk pack and with punch card input/output. Its storage capacity is 40,000 decimal digits.

The other is a large, high-speed computer, the Digital Equipment Corporation PDP-6. It is a fixed word length binary machine with 36 bit words, 16 accummulators, 15 index registers and is extremely high speed. For example, floating point multiplications

take less than 12 microseconds. Memory capacity of the machine is 16,000 words.

With the PDP-6 will be associated three remote terminals. These will be installed to allow practical experience in time-sharing using the PDP-6. One will be installed in the dormitory in which the participants will reside.

FINANCIAL ARRANGEMENTS

No tuition or fees will be charged participants in the Conference. Stipends amounting to $200 for each participant and a travel allowance of 4c per mile will be awarded to those selected. Participants will be expected to purchase books and other necessary supplies for the Conference.

LIVING ACCOMMODATIONS

Housing will be available for single participants and couples. A few units may be available for married participants who are accompanied by their families. Information concerning housing may be obtained from Mr. Thomas E. Murphy, Director of Housing, University of Southwestern Louisiana, Lafayette, Louisiana and all campus housing arrangements must be made through him. Campus dining facilities will not operate while the Conference is in operation. However, commercial eating establishments are located near the campus which will provide food at a reasonable cost. Participants will be permitted to make private arrangements for housing if they so desire.

APPLICATION PROCEDURE

Application for participation in the Conference will be made on forms provided by the National Science Foundation. The forms may be obtained by writing to:

Dr. James R. Oliver

Box 133, USL Station

Lafayette, Louisiana, 70506

The deadline for submitting applications for participation in the Conference is March 15, 1965. Persons selected as participants will be notified by April 1, 1965, and must accept or decline appointments by April 15, 1965.

THE UNIVERSITY

OF

SOUTHWESTERN LOUISIANA

LAFAYETTE, LOUISIANA

CONFERENCE ON DIGITAL COMPUTERS FOR COLLEGE TEACHERS OF SCIENCE, MATHEMATICS AND ENGINEERING

AUGUST 16 - SEPTEMBER 6, 1965

NATIONAL SCIENCE FOUNDATION

THE PROGRAM

With financial assistance from the National Science Foundation, the University of Southwestern Louisiana will conduct on its campus its third Conference on Digital Computers for College Teachers of Science, Mathematics, and Engineering. This program will enable 40 participants (20 beginning, 20 advanced) who are college teachers in the above disciplines to acquire training and experience in digital computation involving high-speed, stored program, electronic computers. The Conference will be in operation from August 16 through September 6, 1965.

OBJECTIVES

Two major benefits are expected to accrue to participants in the Conference. First, information concerning computers and computation will be presented to provide assistance to those individuals who are, or will be, establishing and operating computing centers. Second, college faculty members will be educated in the field of computers and computation for use in their research efforts, as well as in teaching. More explicit objectives are:

1. To give participants a knowledge of computers and computation.
2. To demonstrate the wide range of applications of computers.
3. To establish liaison between the Computing Center of the University of Southwestern Louisiana and similar activities on other college campuses.

SPECIFIC PROGRAM

The Conference will include:

1. Two courses for each group: **Introduction to Digital Computers** and **Programming Digital Computers** (beginning); **Numerical Analysis for Digital Computers** OR **Statistics for Digital Computers**, and **Advanced Computer Programming** (advanced). Each course will involve daily class meetings of 3 hours each.

2. Computer demonstrations illustrating various facets of computer operation.
3. Laboratory participation in computer operation.
4. Seminars on recent developments in the field of computation.
5. Talks and discussions by visiting lecturers.
6. Informal conferences among participants and staff.

The Conference will be conducted by Dr. James R. Oliver, Dean of the Graduate School and Director of the Computing Center, University of Southwestern Louisiana. He will also teach and conduct the seminars. Dr. Oliver belongs to the Association for Computing Machinery and under his direction the first Student Chapter of the ACM was established at USL. He is national chairman of the ACM Committee on Student Membership and Student Chapters. Dr. Oliver is president of the Eastern Region IBM 1620 Users Group. He is a reviewer for COMPUTING REVIEWS.

Also teaching in the Conference will be Mr. Jack D. Testerman, Assistant Professor of Mathematics, USL; Mr. W. P. Champagne, Director of the Computing Center and Assistant Professor of Mathematics, Southeastern Louisiana College; and Mrs. Carol A. Hall, Computing Center Assistant, USL.

COURSES

Each course will carry three hours of undergraduate credit. Courses to be offered are:

Mathematics 380, **Introduction to Digital Computers.**

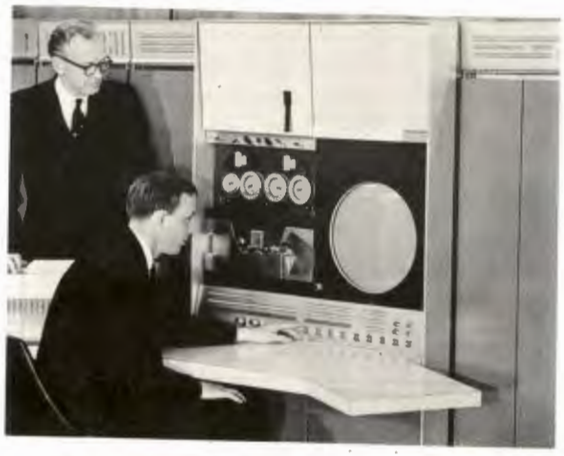
A study of computer theory, number systems, machine logic, machine language, stored programs, flow diagrams, automatic programming, input-output, storage systems, computational modes, instruction codes, concurrent operation, algebraic compilers, and computer hardware. Participants will have access to the computer to solve elementary problems.

Mathematics 381, **Digital Computer Programming.**

Participants will take this course concurrently with the introductory course. It is primarily a laboratory course, although some lecture time will be spent studying the various machine languages. Problems will be solved by programming in machine language, symbolic language, and an automatic programming language such as FORTRAN.

Mathematics 427, **Statistics for Digital Computers.**

Descriptive and inferential statistics from an applied point of view. Fundamental approach to frequency distributions, averages, variation, probability, tests of hypothesis, confidence intervals, regression and correlation analysis. Programs will be written for the solution of some problems; library programs will be used extensively to illustrate the more difficult data analysis concepts. These programs will graph data; rank data in order of magnitude and calculate various statistics such as the mean, median, standard deviation, and probable error; calculate probabilities for the normal, t, and X^2 distributions; calculate and graph prediction (regression) lines including curvilinear regression; and calculate correlation coefficients.



Mathematics 450, **Numerical Analysis for Digital Computers.**

Difference calculus, polynomial approximations, solution of differential equations, curve fitting, statistical procedures, and matrix calculations. In addition to presenting numerical procedures, emphasis will be placed on selecting the proper procedure for particular problems and on interpreting the solutions. The computer will be used extensively during this course.

Mathematics 480, **Advanced Digital Computer Programming.**

Advanced programming techniques using machine language, symbolic programming systems, and an automatic language such as FORTRAN. The course will include a study of interpretive systems and selected automatic languages including ALGOL and COBOL. A part of the course will deal with a study of the structure of compilers.

OTHER ACTIVITIES

Afternoon and evening seminars will consider recent developments in the field. A feature will be the discussion of research currently being accomplished by faculty members of the University of Southwestern Louisiana with the aid of the computer.

Panel discussions will be held on establishing and operating computing centers, introducing computer courses into college (and perhaps high school) curricula, and stimulating faculty members and students to do research involving computers. The discussions dealing with establishing computer centers will emphasize problems frequently encountered by directors of computing centers. Some of the sessions will deal with establishing liaison between computing centers on other campuses and the one at the University of Southwestern Louisiana to more effectively utilize computation factilities.

Work with the computer will involve demonstrations and actual laboratory participation in computer operation by the participants. Laboratory participation will involve familiarization assignments, regular assignments of problems and programs which illustrate some capabilities of the computer, and the assignment

HARVARD UNIVERSITY
GRADUATE SCHOOL OF PUBLIC ADMINISTRATION

SCIENCE AND PUBLIC POLICY PROGRAM

LITTAUER CENTER
CAMBRIDGE 38, MASSACHUSETTS

February 2, 1965

Mr. Kenneth H. Olsen
Digital Equipment Corp.
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

In connection with the Science and Public Policy program here, I am conducting a research project on the importance of new science-based industry for innovation, and of the conditions necessary or favorable to their success. A brief list of the kinds of questions which we are eventually trying to answer is attached.

It would be greatly appreciated if I could have the opportunity of discussing these questions with you, at your convenience, particularly regarding digital technology. I will call your office within a few days to try to arrange an appointment.

With many thanks in advance for your help.

Sincerely,

Daniel Shimshoni

We are studying the newer, science-based industries, characteristically located in or near centers of advanced research and development such as Boston or Palo Alto. The focus is the role of these companies in technical innovation, and in advancing the incorporation of science into technology and of technology in new products.

The original relations of these companies and their founders to developments carried out in universities, research institutes, or older companies are of great interest, as are the influences of the technical and human resources of the area on the growth of the company and its products. We are especially interested in the way in which technical knowledge and market needs are communicated.

We hope to be able, as part of the study, to answer the following kinds of questions:

(a) In given areas of technology, what has been the importance of "spin-off" of new companies for innovation?

(b) To what extent has the formation of these new industries been made possible by the extensive development in depth of specific technologies in the universities, research institutes and older companies? What, therefore, are the conditions required to give the needed technological background?

(c) What has been the economic importance and commercial viability of companies not primarily space or defense prime contractors, or sub-contractors to space and defense contractors or not-for-profit organizations?

(d) How essential to the success of such companies is location in the geographic R & D complex, given the needs for market and technical communications? Under what conditions or communications arrangements can such new companies operate at some distance from the major R and D complex?

RESEARCH AND TECHNOLOGY DIVISION: 2500 Colorado Avenue, Santa Monica, California 90406

SDC SYSTEM DEVELOPMENT CORPORATION

26 January 1965
L-1310

Mr. Kenneth H. Olsen
Digital Equipment Corporation
Maynard, Massachusetts

Dear Mr. Olsen:

We often find that computer manufacturers are interested in the Q-32 Time-Sharing System which has been developed under ARPA contract, both from the standpoint of new equipment configuration and ancillaries for computing equipment aimed at time-sharing operations. We feel that there would be mutual benefit for ARPA-SDC and equipment manufacturers if we were to pool the information which has been gathered in the process of configuring and re-configuring our Time-Sharing System.

I would like to invite you to send a representative to spend some time with us working with our Time-Sharing System. We would plan to provide office space for him and let him use our Time-Sharing System, familiarize himself with the design of the system, its hardware implementation, and participate essentially as a member of the Time-Sharing staff. We are extending this invitation to a number of computer manufacturers and hope you will avail yourself of the opportunity.

The attached pamphlet describes the equipment configuration and operating characteristics of the Q-32 Time-Sharing System.

If you choose to send a representative, our only requirement is that, by the end of his visit, he provide a report giving his impressions of the System and suggesting improvements.

Sincerely,

Donald L. Drukey,
Director of Technology

DLD:sm
Encl.

System Development Corporation / 2500 Colorado Ave. / Santa Monica, California

SP 1721/000/01
AUTHOR
S. M. Cooney
DATE
15 October 1964

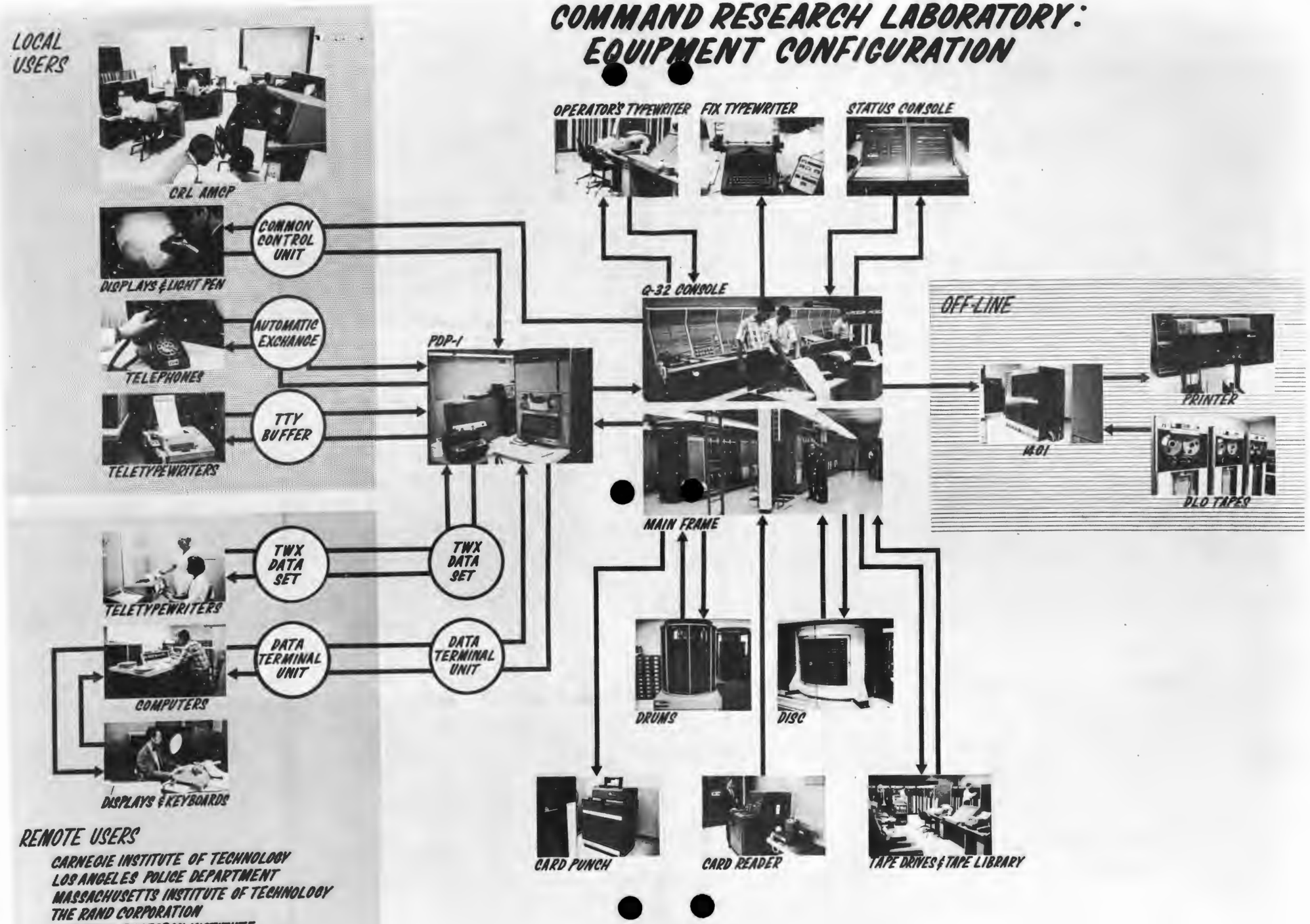
CHARACTERISTICS OF EQUIPMENT IN THE COMMAND RESEARCH LABORATORY

COMPONENT	NUMBER	CAPACITY/SPEED	TOTAL
	AN/FSQ-32 COMPUTER		
Main Core Memory . Cycle time 2.5 μsec. . 48-bit word	4	16,384 words	65,536 words
Input Core Memory (Buffer) . Cycle time 2.5 μsec.	1	16,384 words	16,384 words
Drum . Access time 11.5 ms. . Word transfer rate 2.75 μsec.	3	139,264 words	417,792 words
Disc File . Access time 140 ms. . Word transfer rate 12 μsec.	16 discs	262,144 words	4,194,304 words
Tape Drives (729-IV)	16	112½ ips	
Card Reader	1	250 cpm	
Card Punch	1	100 cpm	
Printer	1	150 lpm	
Typewriter	2	100 wpm	
	ASSOCIATED COMPUTERS (ON/OFF-LINE)		
PDP-1 . Shares input core memory of Q-32 . Cycle time 5 μsec. . 18-bit word main core memory	1	4K words	32K words 4K words
1401-D . Core memory . Printer . Tape drives (729-IV)	1 1 2	4K char. 600 lpm 112½ ips	4K char.
	I/O DEVICES		
Teletypes and Typewriters . Model 33 Teletypes . Model 28 Teletypes . TWX data sets (remote users) . Soroban typewriters	16 8 6 3	100 wpm 100 wpm 100 wpm	
Display Consoles . Light pens . Vector-generator capability	6	2K char. max. (per console)	
Telephones . Links for simultaneous conversations . Phones . Recording by PDP-1 (who called, when, how long)	6 35		

COMMAND RESEARCH LABORATORY: EQUIPMENT CONFIGURATION

Under contract SD-97, Advanced Research Projects Agency, Department of Defense, the System Development Corporation has developed a highly flexible laboratory for the conduct of research in command and control. This folder contains a pictorial diagram of the equipment configuration for the Command Research Laboratory and a table of characteristics of the AN/FSQ-32 computer and associated equipment. Details concerning access to and use of the Laboratory have been published in TM-1354, "Command Research Laboratory User's Guide," a modular series of publications. A general description of the Time-Sharing System of the Laboratory is contained in SP-1499, "A General-Purpose Time-Sharing System," available on request from System Development Corporation.

COMMAND RESEARCH LABORATORY: EQUIPMENT CONFIGURATION



944-3150

ROBERT LASKOW & COMPANY, INC.

~~208 SOUTH LASALLE STREET~~ 445 N. State Parkway CHICAGO 4, ILLINOIS TELEPHONE 236-3696

9:30

Top Floor

Alternate 414-633-8274

Information Proc.

Racine, Wisc.

01/26/65

Mr. Ken Olsen
Digital Equipment Corporation
Maynard, Mass.

Dear Mr. Olsen:

I am writing you on a matter I know will be of mutual interest, and perhaps of mutual benefit, to your company and mine.

My company, Production Control Systems, Inc., of Chicago, is a relatively new venture, providing production control / management information systems to medium-sized industrial plants in the Midwest area.

The services we provide are basic, simple, and (where possible) real-time: job scheduling, control of labor force and labor efficiency, machine utilization, and job costs.

Our small staff--five systems analysts and programmers, and five salesmen,--is concentrating on this one application, production control, and this one area, the Midwest. While our scope is small, within that scope we believe we have better capabilities than anyone else around, including IBM.

Our services are offered in two different packages:

(1) A service bureau connection, via Teletype units, costing the user $500-$1,000./month.

(2) An in-plant computer installation, costing the user $2200-$3000/ month, including personnel.

Since our profit is far greater on the latter basis--an in-plant installation--we are in the process of converting all our customers to that basis, where it would clearly be to the customer's advantage. And we have decided to concentrate our selling efforts on the in-plant package.

Our services to users are quite complete, since in addition to consulting, systems analysis, programming, and installing the computer, we are also able to offer trained personnel, or to train the customer's own personnel, for operating. The latter is possible because of our affiliated school, which is turning out qualified teletype and computer operators at a steady pace. We get first chance at the best of the lot.

The production control system we have designed can utilize any small store-program computer. We have considered the PB (now Raytheon) 250, the SDS 92, the Monrobot XI, the CCC 116, the IBM 1620, the CDC 8090, and of course, your own PDP-5/8 series. We have not yet standardized on any one computer, but your PDP-8 seems one of the best-suited for our purposes.

To purchase the computers for our installations, we have already arranged for 100 % financing from local Chicago banks, based on the 36-month contracts which our customers are willing to give us.

Each installation will be profitable from the start. For example, for your PDP-8, we would charge about $1000/month, including maintenance, which, after bank payments, would afford a decent or excellent profit, depending of course, on whether in your own mind you are amortizing the equipment over 3 years (as we would) or 5 years.

We already have 6 sure customers for the in-plant service, with 9 other almost-sure users. The sure ones are all AAA-1 companies, two of whom

are listed on the New York Stock Exchange, one on the American Stock Exchange, and two over-the-counter. They are all within 15 miles of each other, affording easy access for service and maintenance.

All of the sure users are already using our production control system on a service bureau basis, and are eager to install in-plant systems.

Since the systems work is completed, and the programming 3/4 done, we are also eager to get started. On the basis of our present staff and contacts, we estimate we can install 10 to 25 in-plant systems over the next 18 to 24 months.

We need working capital to proceed with our plans. $25,000. will enable us to install the first 10 systems, including programming and set-up costs. What I am proposing is that your company lend us the needed money (on the basis of a 36 month, 6 % interest, note), and we in turn will immediately contract for the purchase of 10 PDP-8's, to be delivered over the next 24 months.

What we have formed is a new kind of marketing company--a company to do the selling, programming, systems work, consulting, financing, etc., for computer installations, while contracting with a third party--a computer manufacturer--for the hardware and maintenance.

Such an arrangement could be extremely attractive to DEC: It would immediately put your company into a new market, where you have no foothold, and no marketing staff, utilizing the identical equipment you are producing for your normal markets. An application such as production control, which is

under discussion in this letter, could actually double the market for your small computers.

DEC would be well-represented in this new market, because in the Midwest, in production control, our specialized staff is better than what any other computer manufacturer can offer.

And by installing your computers in these companies, we will be opening the door for more of your computers into the same companies--e.g. in the engineering department.

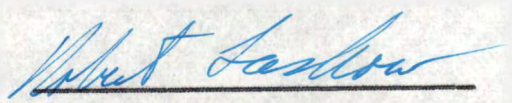
By having the examples of installed systems to demonstrate, your own salesmen will find their jobs easier. And the barrier that most Midwest companies put up against non-IBM systems will be greatly lessened.

And by concentrating the sales of 10 to 25 computers in an area where you are not well (if at all) represented, you are given an efficient base for service and maintenance.

By getting your foot in the door in production control, your entry to a more natural market--process control--may be eased

Please consider carefully the above proposal. I think it involves a true mutual benefit. I will be in touch with you by telephone this week or next.

Very truly yours,



Robert Laskow

CABLE ADDRESS / "FRIDEN SAN LEANDRO"

Friden, Inc.
SAN LEANDRO • CALIFORNIA
A SUBSIDIARY OF THE SINGER COMPANY

January 26, 1965

Mr. Kenneth H. Olsen, Pres.
Digital Equipment Corporation
Maynard, Massachusetts

Dear Ken:

Robbie and I certainly enjoyed our visit to Maynard and the short time we spent with you and Mr. Anderson.

It is amazing to me that a company as young as yours could accomplish so much. The steady and healthy growth of DEC is certainly something you have good reason to be proud of.

I hope that you will have an opportunity shortly to visit our Rochester facility. Once again many thanks for your hospitality.

Sincerely,

Martin H. Dubilier
Executive Vice President

MHD:sp

information sciences and technology

AUERBACH
corporation
1634 arch st.
philadelphia 3
pennsylvania
locust 3-7737

January 18, 1965

Mr. Kenneth Olsen, President
Digital Equipment Corporation
Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

Since we were last in touch with you, we have made additions to our professional staff which will be of particular interest to you. Our Marketing Consulting Services group has been expanded to strengthen and broaden its capability to perform studies covering a wide range of marketing functional subjects. We offer a total capability in the industrial, electronic and information technology fields. Market-oriented, and supported by a technical staff of superior skills and experience, the Marketing Consulting Services group has the diversity and depth to help management:

- Pinpoint areas for corporate expansion
- Capitalize on technical product opportunities.
- Seize new markets effectively.
- Successfully review product specifications and revamp marketing strategy.
- Identify competitive pressures and vulnerability.
- Appraise the state of the art and future technological trends, both domestic and foreign.

An example of the capability of this group is a study just completed which involved a comprehensive marketing and technical evaluation of a company being considered for acquisition by another firm. This study covered an evaluation of the company's technical strength and technological trends which might affect the company's products and research and development programs. It also included an evaluation of the industry market, theidentification of significant market segments and an analysis of:

Market trends

Competition - products - pricing - market position

Customers' buying practices

Distribution methods

Marketing strategy

This study, which aided our client in making a sound business decision, is an example of the type of marketing evaluations which can help you in developing profitable product and marketing programs.

The Marketing Consulting Services group is uniquely qualified to help you with your product and marketing decisions. Mr. C. W. Michaels, who is manager of this group, had directed General Electric and RCA's Marketing Research, Marketing Development and Marketing Planning activity for key product Departments and Divisions. The evaluations which he made covered primarily industrial and commercial products and involved studies of all marketing functions, as well as the development of marketing and business plans. Our Marketing Consulting Services group is further strengthened by staff members with broad experience in the analysis of markets for technical products.

I want you to know of our present marketing capability and of our availability to aid you, through skillfull objective analysis, in making key management decisions. In this regard, I should like very much to have Mr. Michaels meet with you to discuss the marketing and product areas where we might be able to serve you. I have asked him to contact you to establish a mutually convenient date for such a meeting, and I hope this can be arranged.

Very truly yours,

Isaac L. Auerbach
President

ILA:rs

INDUSTRIAL RESEARCH
OFFICE OF THE PRESIDENT

January 14, 1965

Mr. Kenneth Olsen
President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts 01754

Dear Mr. Olsen:

You are cordially invited to attend the Boston awards luncheon for winners of the 1964 I·R 100 Competition sponsored by Industrial Research magazine at the Algonquin Club on Friday, March 5.

Your company will be honored at the luncheon for the selection of the "PDP Multianalyzer" as one of the 100 most significant new technical products of the year.

I hope you--or someone you designate--John Jones attending for Ken--will be able to be present to receive the award and to comment briefly on the importance of the development.

A number of companies have inquired about the possibility of displaying their developments at the luncheon. Therefore, we are inviting all the recipients to feel free to bring along their developments or photographs and literature that might be displayed at the luncheon. We hope you will be able to participate in the display portion of the program.

Your complimentary ticket is enclosed. A ticket also is being forwarded to Jack Atwood. Additional luncheon places are available at $7.50 each. You may wish to reserve a table for 10 as many companies are doing for their key management and research personnel.

The Algonquin Club is located at 217 Commonwealth Avenue, Boston. The luncheon is scheduled for 12:30 p.m. It will be preceded by a reception, with cocktails, at 11:30 a.m.

I would greatly appreciate knowing as soon as possible who will be attending the luncheon from your company.

Sincerely,

INDUSTRIAL RESEARCH

Neil Ruzic

Neil P. Ruzic

enclosure

Jerry Sweeney John H Beck 426-7060

BEVERLY SHORES, IND. - TR 2-8685 - CHICAGO ST 2-4284

The National
Shawmut Bank
of Boston

January 12, 1965

Mr. Kenneth H. Olsen, President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Ken:

Just had an opportunity to read the exceptionally fine article on the "Lost Generation?" in yesterday's Barron's. We are most fortunate and extremely pleased to have had the privilege of working with you, and we hope we have contributed to your growth and success to date. Naturally, we look forward to playing a continuing and major role in the years ahead.

May I again remind you that Shawmut is a full-service banking institution and, as such, is in a position to assist you with all your banking needs. Please feel perfectly free to approach us on any of your domestic or international matters, the issuance of DEC stock publicly, pension or profit-sharing plans or merely the day-to-day financial needs. We enjoy the opportunity to work on a proposition for you.

Best wishes to you and Andy,

Sincerely,

Lincoln E. Barber, Jr.
Assistant Vice President

LEB:GBS

VITRAMON, INCORPORATED
Bridgeport, Connecticut

Barton L. Weller
President

January 8, 1965

Mr. Kenneth H. Olsen, President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Mr. Olsen:

The samples and schematics which you sent with your letter of December 23 have been studied during the holiday period. Thank you very much for sending them in order that we can review your approach to unitized component assemblies.

The information gained has been injected into our program to offer these kinds of products in the market. It is estimated that a month or two will be required before we can come back to you with a specific proposal which will include samples of what we might offer. We appreciate the opportunity of learning of your needs so that our program can include them. It may be that members of Dr. Goodman's staff may be in touch with you for further information in guiding this program to your advantage.

Cordially,

Barton L. Weller

Barton L. Weller

BLW:pd

DR. EMANUEL WOLFF
CORPORATE CONSULTANT

1241 WELSH ROAD, HUNTINGDON VALLEY, PA. • 215 WILSON 7-1544 • CABLE ADDRESS: ASTRONAUTI

January 6, 1965

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Mr. Olsen,

By the way of introduction, I have been, until early last year, Chairman of the Board and Treasurer of Vector Manufacturing Company, Inc., of which I am also the co-founder. As you may know, this company became a part of United Aircraft Corporation.

Since then, very briefly stated, corporate growth through the addition of selective product lines or new market outlets acquired either in this country or abroad has become the subject of my business interests. It appears quite definitely that my past experience in these areas coupled with the flexibility of action available to me can be of value to a corporate officer in certain situations.

I would like to elaborate more specifically through a personal discussion. To this end, I shall call your office in a few days and I hope that you can be available for a brief conversation.

Very truly yours,

EW/km