

JUN 27 1983

6-47

June 22, 1983

Mr. C. Gordon Bell
Vice President - Office of
Development/Engineering
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts 01754

Dear Mr. Bell:

This is a letter on a personal matter. However, it has been generated as a result of my activity in ABET. It relates to publishing a text using practice case problems in engineering. I am doing this on my own with the collaboration of an associate.

The accreditation criteria for engineering emphasize "integrated experiences" and when dealing with design - synthesis, analysis, decision, iteration, and other "component" words become essential to the engineering design definition. Many engineering curricula are using a senior design course as a capstone. This approach to integrating knowledge appears to be successful. To make the capstone experience more real and meaningful, a case method approach using practice-oriented problems is very desirable.

With this in mind, we surveyed approximately 215 heads of Electrical Engineering Departments. To date, we have received over 80 responses - a sample letter and questionnaire we used is attached. In an overwhelming number of responses, the department heads encouraged pursuit of the proposed case text.

Based on the survey results, John Wiley & Sons is interested in publishing the text. What we need to do now is conduct a market survey using a test case. This would enable both the editors at Wiley & Sons and us to determine what is the best approach to preparing the special text.

Mr. C. Gordon Bell
June 22, 1983
Page 2

From the response to our survey, digital systems design power systems, design and analysis, control systems, electro-optics, and computer simulation appear to be of major interest. Based on this, we would like to ask you if you could prepare a typical case problem on one or several of these topics. The approach would be that the problem or a portion of it could be handled by a college senior and it would be typical of what a new engineer would be asked to handle when employed in a high technology industry. The case would describe the problem and all its parameters, it would show a possible solution or direction(s) towards its solution.

The case could be construed in several ways - a problem that could be handled in one or two weeks or one with components that could each take a week or less with the total problem taking up to 5 weeks.

Because this is a first approach, we are not being restrictive. Once we receive the case, a leading professor in the field will be asked to review and edit the case so it conforms to a classroom situation. It would then be submitted to John Wiley & Sons who would distribute it to various colleges for opinions and definition of the final format for the proposed text.

I trust you will be able to help us in this venture. If you have any questions, please call my associate, Alan Fischer, at (212) 473-7813. Alan is in charge of the project. Any correspondence should be sent directly to him at 300 Mercer Street, Apartment 10L, New York NY 10003.

Thank you for your attention and cooperation.

Sincerely,



David R. Reyes-Guerra, P.E.

DRRG:koh
Encs:

DAVID R. REYES-GUERRA, P.E.
345 East 47th Street
New York, New York 10017

March 1, 1983

TO: ELECTRICAL ENGINEERING DEPARTMENT HEADS

Dear Department Head:

I am soliciting help in the form of a frank and honest appraisal of a proposed project to produce an Electrical Engineering Casebook for use by EE students throughout many of their EE courses.

Informal conversations with faculty indicate there exists a lack of current, real world engineering case problems suitable or adaptable for undergraduate classroom use either as overnight assignments or full or partial semester length projects. Faculty members, I gather, are constantly seeking such material and some engineering departments have set up a formal procedure to develop appropriate cases through solicitation from industrial contacts.

I envision a casebook of 50-75 cases, each case contributed by an industrial company, each 1500 to 5000 words in length with suitable illustrations, diagrams, etc. and reflective of a project that a young engineer might become involved with during the first year of practice. The project might be a part of a larger one or a complete project on its own. In choosing a project, care would be exercised to assure that they could be subject to various approaches and solutions. Each case would be prepared initially by a company practicing engineer(s) who would work with our editors (selected EE professors) to conform it to a ready-to-use teaching format, complete with a faculty version that would discuss what was actually done by the company, why that approach was chosen, the variables considered, and what, if any, results were achieved. The case need not have a "solution" since there might be multiple solutions or no solution. It would be geared to using a student's creativity, resourcefulness, and knowledge in addressing a problem and exploring possible approaches to be considered. The spectrum of cases would cover material taught in many EE courses so that the students would be using it throughout academic tenure. Additionally, all cases would identify the company that submitted the project with the understanding that company personnel would be contacted by faculty to discuss the case. Based on developed mutual interest, possibilities can be generated for follow-on research or other contacts.

The casebook, I feel, would have major benefits for students, faculty, and companies. Students would work with real world engineering problems, be exposed to the engineering directions of a wide range of companies and perhaps be able to identify their areas of interest for future employment opportunities.

/continued


Faculty members would not only have case problems in ready-to-use form, but also a strong mechanism to open communication lines to industry engineers. From such contact, beneficial cooperation could develop in the form of joint efforts and/or consulting relationships similar to those that have been well established through the use of case problems in MBA programs. Companies would hope to leave a favorable and lasting impression in the minds of both students and faculty on the type of projects they handle. Companies would also be able to identify industrial contacts for future interaction. Should this initial casebook be well received, I expect it would be followed by new editions containing fresh material every one to two years.

To proceed with this project, I need to know, if produced as described, would the casebook be accepted for classroom use. I feel it would be especially valuable to the senior design synthesizing course. The casebook would probably retail in the \$25-30 range.

Would you please, at this time, complete the attached questionnaire, indicating your reactions to this proposal and return as indicated. I also urge you to call my cooperating editor, Mr. Alan Fischer (212)473-7813, with any comments or suggestions.

My sincerest thanks for your cooperation.

Sincerely,

A handwritten signature in cursive script that reads "David R. Reyes-Guerra". The signature is written in dark ink and is positioned above the typed name.

David R. Reyes-Guerra, P.E.

Attachment

QUESTIONNAIRE FOR E.E. CASEBOOK PROPOSAL

Name _____ Institution _____

Position _____ Phone # Contact () _____

(1) How strong is the need for EE case material, as was described, for courses in your curriculum?

Critical Strong Moderate Useable but not necessary Not needed

(2) Who in your department decides the texts students must purchase?

EE department head Specific course directors Autonomously

Course directors followed by department approval

Other (describe) _____

(3) Do you currently solicit and develop case type problems from industry for use in your basic EE courses? Yes No

(4) Are there particular courses or subject matter that you feel case type problems are most needed or would be most beneficial to the learning process? Yes No

If Yes, please specify: _____

Questions (5) and (6) are "opinion" questions. Answers will not be construed as reflecting any commitment.

(5) If the casebook were available at this time, as described, and with a purchase price of \$25, how likely is it your department would require its EE majors to purchase it?

Almost certain Very likely 50-50 Not likely

(6) If you checked either "50-50" or "not likely" to question (5), would altering the content, format, or price of the casebook change your response? Yes No

If yes, please elaborate: _____

Please make any additional comments you deem appropriate. Again, we ask that you be frank in your appraisal.

Return to: Alan Fischer
300 Mercer Street
New York, NY 10003