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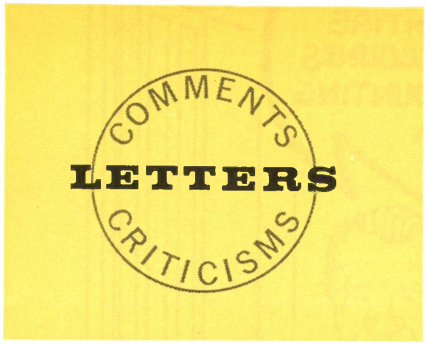
Letters

Gerald M. Levinson

E. Reece Harrill

John W. Wagner



Technically possible but . . .

I have reviewed the article on input-oriented charts of accounts by John W. Wagner (M/S September-October '68, p. 44) with a great deal of interest . . . I think that a few comments should be made to those contemplating the implementation of such a system.

The assignment of a label to a discrete "initial input" (debit/credit function) and subsequently utilizing its definition for further processing is within the framework of good programing.

However, in a practical sense there are other effects that need to be examined. Firstly, under the basic premise of the article, let us establish a matrix in which the columns down are accounts (say, 500 for a medium-size company) and rows across are analytic detail (say, 50 for locations and class types). The resultant display is a 25,000-unit initial input relationship. In order to construct and access a discrete initial input, small subroutines must be written which would include a definition of terms and then commands for comparing and adding values to the implied debit/credit account. Relative to current practices, the architecture of these 25,000 subroutines would represent an abnormal amount of coding and programing. This in turn presents problems with the size of available core memory and the handling of peripheral equipment.

Secondly, since the theory presented indicates a one debit offset by one credit, how would entries reflecting several debits offset by one credit be recorded? The answer, of course, is to make several entries allocating the value of the credits. This may be objectionable from a user's point of view.

This system does not lend itself to being flexible where new accounts are added and old accounts deleted. In the example cited, for every new account 50 new input units must be defined and then recompiled. This would be most objectionable when regular changes are to be made in the chart of accounts.

Thirdly, from an input validation point of view, if we were to assume that a comparison was made on the matrix input unit number in lieu of account numbers (because the account number is not used), then any number from 1 to 25,000 would be acceptable with no internal check. There is also a question as to whether all the units in the matrix would be utilized.

As for accessing, computing, and retrieving the desired information, a retrieval language would have to be built so that the user would need only to indicate his requirements. Such a language is extremely useful and is generally produced in the area of advanced programing. Unfortunately, only those organizations which possess adequate talent can do so.

I do think Mr. Wagner is correct in pointing out the virtues of comprehensive coding of information to its lowest level of detail. A well defined data base utilizing individual debit/credit look-up tables would then be a significant tool when coupled with an information retrieval language such as was referred to previously.

In conclusion, given a large budget, a medium- to large-scale system, good programing talent, and a retrieval language, Mr. Wagner's theory technically could be implemented. However, great care would have to be taken to include proper audit trails and validation.

Gerald M. Levinson, CPA
Manager, Information Processing
UNIVAC Division
Sperry Rand Corporation
Philadelphia, Pa.

Not too formidable

After carefully reading [Mr. Levinson's] letter, I have the following comments to make:

1. My article gives only a relatively brief presentation of a rather complex theory and explains it with a hypothetical example which I indicate is highly oversimplified (p. 47). Mr. Levinson's comments, which deal with various implementation problems, are essentially concerned with an application of the theory based on his concept as to how the theory might best be implemented. Thus, since his remarks are an extension of the theory, my comments while referring to the theory will also involve an extension of what I said in the article.

2. Perhaps because of the aforementioned oversimplification, one of Mr. Levinson's comments appears to be based on a misinterpretation of what I am saying. That is, matrices are used in the article simply to set forth clearly the possibilities contemplated in the hypothetical example that was given.

The idea that matrices would be used in the computer program is Mr. Levinson's innovation rather than mine. While the sample input chart of accounts (p. 49, September-October) is devised in part by matrix analysis, the chart is never used as if it were part of a matrix. The difficulties that Mr. Levinson explains in regard to the matrix application are therefore a function of his choice of applications rather than of anything I have said in the theory.

3. Mr. Levinson indicates that the way to deal with the recording of multiple-line journal entries is to subdivide them into a series of two-line (debit/credit) entries and that this may be objectionable from a user's point of view. If, in fact, this application is a problem, additional programing can probably solve it. For example, since criteria are presumably available for this allocation process in the first place, the computer could be programed to accept multiple-line entries and make the appropriate allocations automatically. In other words, while the computer may manipulate entries in an implied two-line format internally, there is no apparent need for the user to know or be concerned with this fact.

4. Changes in the chart of accounts are a problem in any system. However, if input accounts are by definition very detailed, changes in them should not occur very frequently. It is the output accounts one would expect to change frequently. And, since one set of input accounts is capable of satisfying the requirements of numerous sets of output accounts, the output accounts could probably be reprogramed without affecting the input accounts. Obviously, locations may be added or eliminated from time to time, but this does not necessarily change the input chart of accounts, only the number of locations for which it will be used.

5. The three preceding paragraphs are concerned with specific points of application that might or might not be pertinent to any given installation. There are many different ways of implementing this theory, and no doubt Mr. Levinson would devise other means where necessary when faced with a specific problem. I therefore conclude that while these points suggest challenging areas in the application of the theory, they do not appear to be excessively formidable. In this respect, Mr. Levinson appears to be in agreement with me. He states, ". . . Mr. Wagner's theory technically could be implemented." Of course, he indicates there may be problems involving computer size, sufficient computer programing talent, and cost. But these difficulties are present in varying degrees in any installation. In applying a new theory such as this one, the need for experimentation and innovation will no doubt make the cost higher for those who chose to pioneer such an application. However, it should be remembered that it is not just the cost that is important but rather the cost/benefit ratio—and there appears little doubt that the input-oriented system has a potential for greatly expanded benefits.

John W. Wagner
University of Southern California
Los Angeles

Systems for the future

I have read with great interest "Toward an Input-Oriented Chart of Accounts." I am in agreement with these concepts . . . transaction-oriented systems will probably be the systems for the future.

I have been trying to sponsor that concept in the Federal Government, and I have developed it for the Bureau of Indian Affairs, Department of Interior, and the Civil Service Commission. These systems are now going (since July, 1968). Also, Peat, Marwick, Livingston & Co. . . . has developed a transaction-oriented system for the Geological Survey, Department of Interior. We expect to assist that agency in installing the system.

...an article, "The Transaction Concept for Governmental Accounting," which I wrote . . . is scheduled for publication in the first quarter, 1969, issue of *The Federal Accountant*. . . . an article [of mine], "A Recommended Agency Accounting Structure," [appeared in an earlier issue]. My approach is a little different [from that used by Mr. Wagner], but the basic concepts and results are the same.

E. Reece Harrill
Peat, Marwick, Livingston & Co.
Washington, D.C.

Practical reality

While there are numerous differences in our approaches, [Mr. Harrill's] manuscript indicates clearly that our goals are very similar.

The fact that several departments of the Federal Government have recently installed input-oriented systems is particularly interesting. This means that the input approach is already a practical reality, and the formulation of additional applications and refinements will be just a matter of time.

John W. Wagner