

From Our Readers

An Opinion...

“Better MIS Support Needed by Corporate Forecasters

Recently while playing summer catch-up on my reading I came across an interesting finding which the MIS community may have overlooked. It is a little dated, but still provides food for thought.

In 1976 Wheelright and Clarke published in the *Harvard Business Review*¹ a summary of findings extracted from a survey of the forecasting practices of large American companies. Questionnaires were mailed to 500 companies with responses received from 127. The sample was biased in favor of companies reputed to excel in forecasting (“it was expected that the proportion of companies rating themselves high on forecasting practice would be larger than expected from a random sample”). Care was taken to elicit responses from both the preparers of forecasts and the managerial users.

The six-page questionnaire covered a number of technical and organizational details which I will not attempt to summarize. But I would like to call to the attention of your readers its findings relating to “areas in need of improvement.”

The Table below is extracted from Exhibit V11 of the article. Of the ten areas of concern most frequently cited by forecast users it is significant and distressing that all of the top four relate to defects in EDP services. Even worse, forecast preparers backed up these judgments by rating three of the same items as among the top six of their concerns.

Table. Forecasting Needs Poorly Served by Corporate EDP
(Extracted from Exhibit V11 of Wheelright and Clarke)

	Importance Ranking According to:	
	Users	Preparers
EDP support, report generation	1	6
EDP support, software development	2	1
Development of internal data sources	3	-
EDP database management	4	3

Unless EDP has made very significant strides over the past five years, this survey would seem to suggest that most corporate MIS Directors would be well-advised to give a little more attention to the care and feeding of the services they provide to their corporate and divisional forecasters.

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¹Wheelright, S.C. and Clarke, D.G. “Corporate Forecasting: Promise and Reality,” *Harvard Business Review*, November-December, 1976.

Letter to the Editor:

If the "Best Article" contest for this year is closed, I'd like to nominate Franz Edelman's article in the March 1981 issue of the *MIS Quarterly* (Volume 5, Number 1) as best article of the decade. It is the finest, most cogent article on our field I have read in the sixteen years I have been in this business. Its impact should be heard resoundingly across the country — but I doubt it. Close study should lead to an end of the anguished breast-beating articles, and sessions like the wind-up forum in Philadelphia last fall, on the "where have we gone wrong" theme.¹ Russ Ackoff tried to tell us thirteen years ago, and Parker Fowler in your pages much more recently.

As a postscript to my most recent article review for you I stated that I was simply going to have to write a paper explaining that the root of most of our problems is our insistence that EDP and MIS are synonymous terms. I can stop feeling guilty about not writing it now, as Dr. Edelman has done it for me. As an Information Systems Manager, and a charter member in SMIS, who has never closed a voucher, written a line of COBOL, or operated anything more complex than a 3278, I have winced all these years when EDP Directors simply assumed that they automatically had the credentials to talk, write, and act like *business system* professionals.

The SMIS membership had best fully comprehend and heed Dr. Edelman's arguments or one of two things will happen: the individual's career will suffer as management wakes up and takes over; or American industry and productivity will continue to suffer because we have somehow again managed to keep these critical distinctions muddled and hidden from them.

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¹Reference is to The First International Conference on Information Systems, Philadelphia, Pennsylvania, December 8-10, 1980.

Letter to the Editor

I would like to make a note in addition to the article by Jack Ewers and Iris Vessey in the *MIS Quarterly*, Volume 5, Number 2, June 1981, entitled "The System Development Dilemma — A Programming Perspective."

On page 38 the article makes the statement "Productivity of the maintenance workload is even more important than the productivity of program creation since approximately 80% of programmer time is spent on maintenance." I should like to stress this point by means of a simple mathematical model. This model suggests that the level of properly working information systems that can ultimately be reached is only dependent upon the productivity of the maintenance workload and is *not* dependent upon the productivity of program creation. Only the speed of approaching the level is influenced by the latter.

Suppose we have P people for creation and maintenance; N work on creation and O on maintenance, hence:

$$P = N + O. \quad (1)$$

Let S be a function of time indicating "the amount of information systems" that is functioning properly. The rate of increase will be proportional to the number of people working on creation:

$$\frac{dS}{dt} = c_1 N. \quad (2)$$

The number of people working on maintenance will be proportional to the level S already obtained:

$$O = c_2 S. \quad (3)$$

Here c_1 is a productivity factor for creation; if we have nothing better for instance: the number of lines of code per programmer per unit of time. The maintenance factor c_2 is something like the number of people required to maintain a line of code.

From the three equations results:

$$\frac{dS}{dt} = c_1 c_2 S = c_1 P. \quad (4)$$

This differential equation can easily be solved; we distinguish two cases.

A. P is constant.

The solution is:

$$S = (P/c_2) (1 - \exp(-c_1 c_2 t)),$$

in which \exp is the exponential function. So we see that S can never become more than P/c_2 . The ultimate level of operational systems can only be improved by lowering the maintenance factor c_2 , not by increasing the productivity for creation of new systems. Increasing c_1 only means that we grow steeper initially and slower later on.

B. P is a linear function of time.

Let us suppose that we hire P new people each year, so $P = P_0 + pt$. The solution is now somewhat more complicated:

$$S = (C/c_2) (1 - \exp(-c_1 c_2 t)) + (p/c_2)t;$$

$$\text{in which } C = P_0 - p/c_1 c_2.$$

Now the amount of available information systems goes asymptotically to the straight line: $(C/c_2) + (p/c_2)t$; but we see again that only c_2 determines the rate of increase of this line; productivity of program creation has only influence on the location of the root of line and the initial rate of growth of S .

The systems development dilemma may now be formulated in another way. If development methods are selected that increase the productivity of creation the manager should be very sure that these methods have no unfavorable influence on the maintenance factor.

In Figures 1 and 2 we have drawn, for cases A and B respectively, curves pertaining to the following situations:

I. Development methods are selected with a high productivity for creation but improper productivity of the maintenance workload;

II. Development methods are selected that favor maintenance instead of high productivity for new systems.

The size of the backlog makes the selections of I very attractive, but in the long run selection of II is the better decision.

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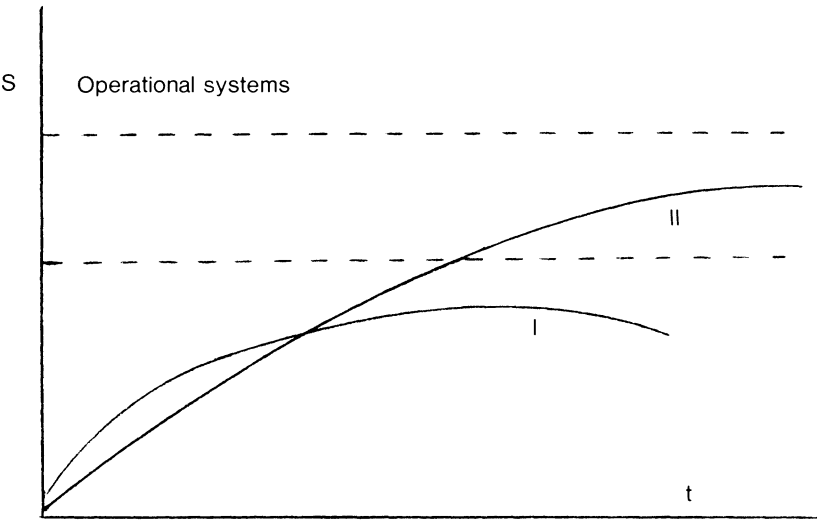


Figure 1. Case A.

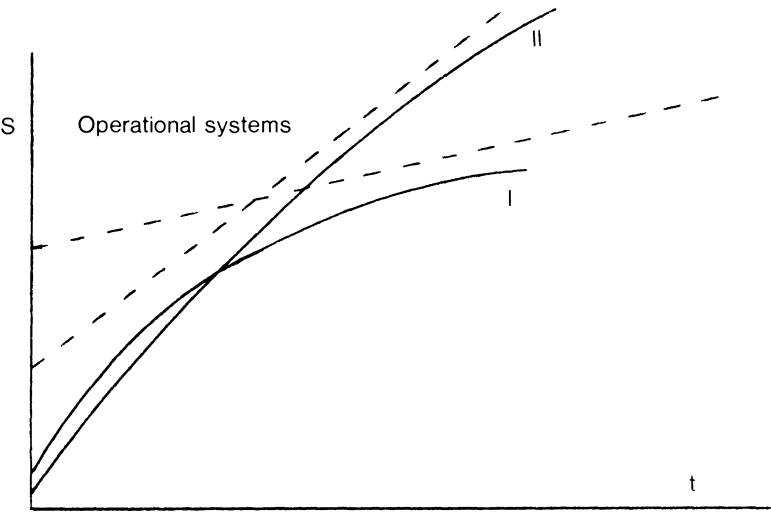


Figure 2. Case B.