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George Schussel

Your EDP Department – How Good Is It?

The performance of the Data Processing Department has been the subject of continuing controversy in many companies. This article discusses a plan for recognizing and quantifying the quality of the job done by the EDP Department.

IT IS A rather widely held opinion that electronic data processing departments normally wear the corporate black hat. In most companies the EDP department would lead all others in being complained about. "The computer isn't working again" or "the computer made a mistake" are typical, common (although often misleading and inaccurate) statements.

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In order to improve this situation, we must first understand why and how data processing comes to be so criticized. One of the key ingredients in understanding the performance of any data processing department is an understanding of the techniques used to measure that department's performance.

In 1972 and 1973 I had a unique opportunity to do some research on the question of how company top-managements evaluate the performance of their EDP departments. Over those two years, AMR International ran a seminar entitled "Managing Data Processing: A Seminar for Top EDP Management." The seminar was advertised by

direct mail and held in locations such as Fort Lauderdale, Newport Beach, The Homestead (Virginia), and New York City. Hotels and accommodations were chosen by AMR so that the seminar would appeal to the top man in the data processing hierarchy—the individual to whom the seminar was directed. During the two year period that the seminar was given, over 200 managers attended. The vast majority had titles such as Division Executive, Vice President EDP, Director Commercial Systems, Manager Systems & Programming, and Manager Data Base Systems.

The total seminar ran for 2½ days. A half day was devoted to the general

topic of measurement, and over one half of this time was given to discussion of the issue of how corporate top management measures the performance of an EDP department.

From research in the literature and personal experience, I was able to come up with a list of measures of EDP performance. Seminar attendees were asked to rank and comment on these measures and suggest others used to evaluate their EDP department performance. After receiving comments from the first few sessions, some of the postulated measures were dropped as obviously redundant or not particularly good measures. Other measures were substituted in their place, and a final list of 14 question/measures was derived. These 14 measures are given in Exhibit 1.

Real vs. Theoretical Measurements

For the next 10 seminars (at which a total of 140 attendees were present) these 14 question/measures were handed out on a questionnaire form to seminar attendees before there was any discussion. They were asked to rank the measures high, medium, or low in two different ways. The first was: "Is this measure one that *Is* used in your

company?" The second was: "Is this measure one that you feel *Should Be* used?" In this way statistics were gathered on both the real world (*Is*) and the managers' theoretical model of the world (*Should Be*).

The rankings and scores shown in Exhibit 1 were arrived at by averaging the votes for each measure. A score of 100 was assigned to high, 50 to medium, and 0 (zero) was given to low. The two columns entitled *Is Score* and *Should Be Score* in Exhibit 1 give the resulting values for each of the 14 measures.

In Exhibit 1 the question/measures are listed in order 1 through 14 on the basis of the rank they received from their *Is* votes (real world). Their ranking on the basis of the *Should Be* votes (theoretical model) is given in the second column. Although only measures 2 and 9 agree exactly, the two rankings turned out somewhat similar. Spearman's rank correlation coefficient is defined by the formula below:¹

$$r = 1 - \frac{6 \sum d^2}{n(n^2 - 1)}$$

Using this formula, the correlation coefficient between the two rankings is $r = .675$, a moderately strong correlation. This correlation between the two ranks means the seminar attendees felt

that real world measures, those actually used, are not too different from the theoretical models of performance criteria which *should be* used in measuring EDP department performance.

In the column Score Difference in Exhibit 1, only one rating, number 7 (Are Long-Term Goals Planned and Pursued by the EDP Department?), shows a significant difference between the *Should Be* and *Is* scores. Here again, with the exception of number 7, the EDP managers felt that the real world is not too divergent from their theoretical world.

Quality of Measurements

After the questionnaire sheets were filled out (high, medium, or low) on both *Is* and *Should Be* for all 14 measures, discussions followed on which measures were good ones, which were used often, and which could be modified in order to obtain a better measurement of EDP department performance. Some of these comments are as follows:

1. *Meeting Deadlines*: This measure for evaluating the EDP department was interpreted as applying to meeting both project development and operations deadlines. It received the top real world rank but ranked fourth in the *Should Be* classification. However, there was no difference between the two scores.

Several attendees commented that many other departments, such as manufacturing or marketing, have rather simple measures that can be used to evaluate their performance. How many dollars of sales did we get? How many units did we produce? Such obvious measures are not as readily available in EDP. When one looks for an obvious measure, however, "meeting deadlines" stands out as much as any other. Therefore, many EDP managers felt that it is the most used primarily because it is the easiest and most intuitive of all measures. A large number felt that it also is a valid measure. Profit dollars probably ride on the EDP department's ability to meet deadlines. Meeting deadlines is a fact of business and therefore certainly should be a part of the EDP function.

One other comment of note was that forecasting how long a project will take is only one portion of a project manager's job. On the other hand, it was

Exhibit 1: Measurement of Overall EDP Department Performance

Question/Measure	<i>Is</i> Rank	<i>Should</i> <i>Be</i> Rank	<i>Is</i> Score	<i>Should</i> <i>Be</i> Score	Score Difference
Meeting deadlines	1	4	66	66	0
Quality of EDP operations: accuracy and completeness	2	2	63	71	8
Quick response to user requests	3	6	60	51	9
Budget performance and the use of cost control by EDP	4	3	53	67	14
Tranquility in department and with other departments	5	10	39	19	20
Does EDP use cost/benefit analyses in project selection?	6	5	34	53	19
Are long-term goals planned and pursued by EDP department?	7	1	30	72	42
Political appraisal by superiors	8	14	30	9	21
Is EDP aggressive in promoting new systems applications?	9	9	26	35	9
Quality of EDP personnel	10	8	25	41	16
Do EDP personnel know the company's business?	11	7	24	42	18
Majority vote of using department managers (unofficially)	12	13	19	11	8
Is EDP department among the first to use latest technology?	13	12	16	17	1
EDP personnel turnover ratio (involuntary loss of desired people)	14	11	14	18	4

felt that this may be the most important portion and that the project manager who does a good job in forecasting earns the accolade "good manager" regardless of performance in other areas.

2. *Quality of EDP Operations*: This criterion was of primary importance in both the practical *Is* and theoretical *Should Be* worlds, earning a second place rank in both. The score difference of 8 between the actual scores received is minor. In other words, the managers felt that this is an important evaluation criterion.

Irrespective of anything else in the EDP department, if operation results are not accurate and complete, the reputation of the entire department is dragged down and much good systems work may go out the window. This was cited as another measure which intuitively is obvious to others in the company and therefore presents something that is easy to measure.

3. *Quick Response to User Requests*: That this measure scored relatively high in both the practical and theoretical worlds was a surprise. A department that does well in this score may be doing the easy projects and not ones that are more difficult and ambitious. Also, many quickly performed projects may be of poor or dubious value. On the other hand, the consensus of seminar attendees was that this measure, like number 1 and number 2, is an obvious one, easy to measure, and one which everyone knows. It was considered important also because quickly solved, minor EDP problems may not be minor to the user and may serve a significant purpose in his area.

4. *Budget Performance/Cost Control*: This measure's score was somewhat surprising also; it ranked third in the *Should Be* theoretical world and fourth in the real world. Many of the EDP managers admitted they did not use cost control techniques in their own shops, although at the same time they stated that they probably should. They felt that this was a direction in which most users of EDP equipment are headed; in most companies EDP costs are always going up so that the demand by top management to perform well in the budget area and to use cost control techniques will become more important over time.

5. *Tranquility*: Tranquility, or the absence of too much contention in the department or between EDP and other departments, was ranked fifth in actual

use. With both *Is* and *Should Be* scores substantially below those of the four leading measures, the seminar attendees felt that this measure is used more often than it really should be. The score differential was rather substantial; tranquility achieved a 39 *Is* score and only a 19 *Should Be* score. Comments of the participants generally could be summarized along the lines that you don't want too much tranquility and you don't want too little of it. A

years are feasible, practical, and necessary. The large difference between the real and theoretical worlds was explained by the sentiment that the real world involves worry about today and getting through the problems that will occur over the next couple of weeks, but an ideal world would provide for better groundwork and longer range planning.

8. *Political Appraisal by Superiors*: This measure received little comment.

"In most situations the quality of EDP personnel is inferred on the basis of the quality of the job that gets done."

moderate amount is useful. This is not a good rating factor because it is not obvious how to measure it or how to correlate it with performance of the EDP department.

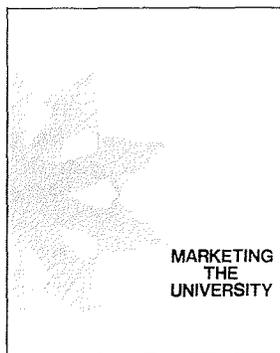
6. *Use of Cost/Benefit Analysis*: Although the managers gave the use of cost/benefit analysis in selection of projects only a middle ranking in the real world, they thought that more importance should be accorded to it. In general, the limited discussion on this point was slightly akin to the concept of motherhood: of course it's good.

7. *Long-Term Goals*: The planning and pursuit of long-term goals received a ranking of first in the theoretical situation and a ranking of 7 in the real world. The score differential of 42 points (the largest score difference) also reflects this substantial difference. Most managers felt that too little planning occurs in the EDP environment and that more planning not only would benefit the EDP manager but would provide for a more useful allocation of resources in the EDP area, therefore benefitting the entire company. When discussing planning, however, the managers generally agreed that very long-range plans, such as 5 years, are not useful in the EDP environment in most companies. "I have to operate to support the activities that my company will be doing and since they don't know what they'll be doing in 5 years, I can't very well make my own 5-year plan meaningful." Comments such as this reflected the fact that the EDP department is the tail end on the dog and normally can't go first. Most attendees felt that long-range plans of only about two or three

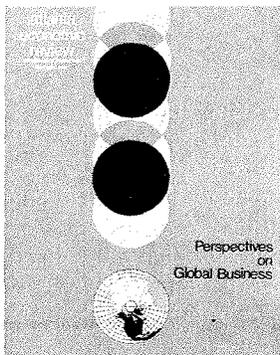
Anything involving human activity, a structured society, and goals will have bosses appraising the performance of subordinates. EDP is no different from any other function in this area. Neglect of what your boss thinks of the quality of your job may very well lead to a new job for you. On the other hand, the managers clearly felt that this measure should be accorded last place in their theoretical model.

9. *Aggressiveness in Promoting New Systems Applications*: This is the other measure that received identical rankings in both the real and theoretical worlds. It was generally felt that there should be a certain amount of aggressiveness by EDP; not too much, not too little. On the other hand, it was not obvious how this characteristic could be measured for ranking the quality of the EDP department.

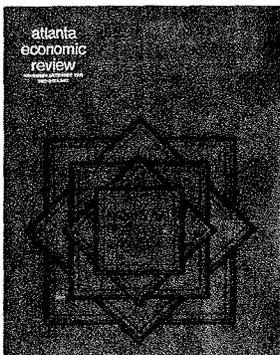
10. *Quality of EDP Personnel*: It was readily acknowledged by most seminar attendees that the job that is done depends on the quality of the EDP personnel, from the manager on down. It was also pointed out, however, that this measure is not easy to quantify and in most situations the quality of EDP personnel is inferred on the basis of the quality of the job that gets done. In other words, this measure really is not a primary measure, but a subsidiary one. If the department scores well on most of the other measures, the opinion of EDP personnel is likely to be high. If other measures score low, the opinion is likely to be low. Specific techniques for measuring the quality of EDP personnel, such as bringing in outside consultants for evaluation or using tests, were not



JULY-AUGUST—Articles range in topics from marketing the university to anti-trust law to EEOC guidelines and personnel selection techniques. Others look at job enrichment, one at Yugoslavia's self-management system.



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thought to be useful in a real world environment.

11. *Knowledge of the Company's Business*: "You've got to have people—at least some—who know the company's business or you're not going to get your job done" was typical of the comments. On the other hand, it was felt that this was not a good measure of the EDP department per se. One seminar attendee said: "This type of thing is input rather than output; the output from your EDP department is meeting deadlines and the quality of your operations, while the input is the quality of people and how much they know about the company's business." This attendee felt that to determine how good a job is being done, the quality of output, not the quality of the input, should be measured.

12. *Majority Vote of Manager/Users*: In a human and therefore political environment, it is inevitable that people will get together and discuss various functions of the business. During these discussions, the EDP department will be brought up and discussed in either favorable or unfavorable terms. The EDP managers felt that this type of measure is relatively unimportant in the real world and also should be unimportant in their theoretical world. This was somewhat of a surprise since I have seen some real world situations in which this measure is one of the most important used. General comments were similar to those on political appraisal by superiors; it is necessary but should be of minor importance as an evaluation criterion. Some strong divergence of opinion was expressed along the lines that a truer measure of this criterion's real world importance would be higher than the 12th place position accorded to it by the vote.

13. *Use of Latest Technology*: Although this measure scored very low in both the real and theoretical worlds, a small number of managers felt it to be very important. More, however, thought that "pioneers get shot in the back with arrows" and that it is better, in general, to let others do the experimenting with new technologies.

14. *Personnel Turnover Ratio*: In spite of the fact that most agreed that a high turnover ratio in EDP costs time, resources, and capabilities, this measure ranked lowest in the real world and 11th in the *Should Be* world. Some attendees felt that their turnover ratio really was nothing more than a measure

of the state of the economy. Examples were given of the fact that in the 1970-1971 recession, turnover ratios dropped almost to zero in most shops. Mention also was made of the fact that turnover ratios differ significantly on a geographical basis. It was felt that the two coastal regions, the Pacific and Atlantic, provide many more EDP job opportunities. Therefore, companies located in these areas suffer greater turnover rates.

Conclusions

The strong correlation between the rankings in the real and theoretical worlds show that EDP managers think the ways their departments are evaluated are not so bad. Perhaps, then, the best place for improvement is in quantification and the use of more formality in evaluation. Most of the evaluation techniques mentioned are informal and very qualitative; many other types of departments have single primarily quantitative measures that tell a good story of the job that is being done. EDP is a more difficult function to measure and one whose correct evaluation must depend on a combination of many measures. Therefore, if some (or all) of the measures used in this study (and other appropriate ones) were quantitatively defined to the EDP department manager, he would have a valid target to shoot for. In other words, you might tell the manager of your EDP operation that you will rank him on the basis of how well he meets deadlines and whether he uses cost/benefit analysis; also tell him how much weight you will assign to each of these criteria. In addition, tell him how you plan to score these measures; then, on an annual basis, use the resulting scores as an evaluation of how well both the manager and his department have performed.

If nothing else, the concept of quantitatively defining the measures and going through an official evaluation would provide an important benefit by explicitly communicating what constitutes improved performance. Use of this technique, I am sure, would reduce the high turnover rate in the ranks of EDP managers.

1. Taro Yamane, *Statistics: An Introductory Analysis*, 2nd edition (New York, Harper and Row, 1967), p. 467.