"ACCOUNTING IN THE TECHNOLOGICAL AGE?"


Technology has rendered accounting obsolete. Recognition and acceptance of this fact are necessary if accountants are to make meaningful change, rather than fritter away their limited resources trying to repair the creaking, sagging, old machine. Presumably, if accountants had been assigned the job of landing man on the moon, we would still be earthbound while they continued to tinker with an old Ford trimotor.

There are a number of ways technology has made accounting obsolete:

- Technology has created a world of extremely swift change; political circumstances, material well-being, and public consciousness are subject to rapid alteration. As a result, the measurement of activity and accomplishments must be more rapid and precise. A tiller may be adequate to steer a crude and clumsy carriage, but a sophisticated electronic guidance system is necessary to guide a space capsule.

- Technology has given mankind much more to account for. The unwanted by-products of pretechnological industry were relatively negligible, but the effluents, demoralization, and social dislocation flowing from technology may ultimately overwhelm the intended products in significance. The measurement of human activity can no longer ignore these by-products of industry.

- Technology has fostered the growth of a new public consciousness which is much less tolerant of technology's adverse by-products. This new consciousness results from the better educational standards together with the increased leisure time brought about by technology. People are dissatisfied with a system which does not recognize the quality of life as a value worth paying for, in addition to material goods and services.

- Technology has increased the impact of decisions in technological society is much greater than it ever was before; these decisions must, therefore, be based upon much better quality information than ever before.

Many readers may be wondering what all this has to do with accounting, which is, after all, the communication of financial information about economic entities—right? That definition might have been adequate in pretechnological society, but is much too limited now. A broader definition should be attempted, however, only in the context of overall social objectives.

An economic system is not designed to be a totally random process; it is designed with a purpose. That purpose is to satisfy certain basic human needs, including subsistence, security, and social needs. The better economic system is generally considered to be the one that results in a higher level of welfare for the people. Any such system, in order to function efficiently, must compare its attained results with its goals, and make physical adjustments to correct any discrepancies. Two elements are necessary for this corrective process to work: information about actual results and effective control based upon that information. A logical, broader definition of accounting, therefore, would be that accounting is the communication of information necessary for the attainment of goals.

There are some striking differences between this and the previous definition:

- It is no longer limited to financial information,
- It no longer concentrates on entities, per se, and
- It adopts as its principal criterion the usefulness of information in reaching goals, not any abstract concept of truth, conservatism or neutrality.

Some of the major implications of this broader definition of accounting are discussed below.

Time Orientation

Human activity takes place under an obvious time constraint: the past can no longer be affected; the present
can be affected, but even the cumulative effect of human activity for a short period, say a year, is negligible*; any effective human activity must be future oriented.

The achievement of future goals can be realized only by the current organization of future activity; only by current planning can desired changes be realized over time. This implies a future orientation to accounting, in contrast with its traditional historical (past) orientation. This future orientation can be provided by long- and short-term budgets and forecasts of various types, such as cash flow, labor requirements, consumption of natural resources, production, etc.

Forecasting is a risky business. Conditions can be very different in just a few years; the economy can be in a boom or recession phase, government policy can shift, there can be technological breakthroughs, and public consciousness can change. Nevertheless, persons making resource allocation decisions of all kinds need to forecast future developments; in the absence of more reliable data, they must work from scanty, uncertain data and possibly unrealistic assumptions. They would be in a far better position if they had forecasts based upon all the available information.

Scope of Information

When capitalism evolved, it was intended to maximize wealth and welfare through economic incentive to individuals. Values were conceived mainly in monetary terms; it is not surprising, therefore, that the accounting was solely in monetary terms. With the coming of the industrial revolution, the underlying assumptions of free enterprise (see box, above) totally failed. After the assumptions failed, it was no longer possible to measure wealth and welfare solely in economic terms; but accounting did not adjust to this change, and free enterprise itself adjusted very slowly, principally because government constraints applied only after conditions became intolerable.

Before the industrial revolution, labor, capital, and production units generally were small and insignificant relative to the whole economy. Thus, total mobility of these elements did not pose the threat of serious disruption and dislocation to the economy. With the coming, first of the industrial and later the technological revolutions, however, it became necessary for much larger capital, labor, and production pools to form—so much larger, in fact, that individual units did become significant with respect to the whole economy. These units could and did dominate their respective marketplaces, with the result of substantially reducing the free character of those markets.

During the preindustrial days, it was not critically important to have sophisticated accounting methods. Few individual decisions bore much significance beyond the persons immediately involved, few individual decisions had a significant impact on the quality of life, and economic units were so small that nonaccounting information was often adequate to make the essential decisions.

The coming of the industrial revolution changed all that. With larger economic units, individual decisions became important and, furthermore, could have a significant impact on the quality of life. Management could no longer run these large enterprises "by the seat of the pants," but began to need more economic data. And finally, the aggregation of capital pools created a new class of capitalist—the absentee owner—who now needed some information about the stewardship of his funds.

What did accountants proffer to fill these newly created needs? Nothing but some glorified bookkeeping results, never intended to reflect economic facts, but merely to record results, never intended to reflect economic facts, but merely to record economic facts, but merely to record asset and liability accountability for internal control purposes. (It is essentially these accountability records that are produced by accountants to this day!) It is clear that even in the years prior to the technological revolution accounting reports were inadequate for the decisions which had to be made.

The coming of the technological revolution (which might reasonably be dated from the onset of the Second World War) has magnified the defect in accounting reports even more. The universal assumption in earlier days that natural resources, such as air and water, were unlimited meant that they were excluded from consideration and accountability. This assump-

*Assuming that those in power keep their fingers off the ultimate button.

Underlying Assumptions of Free Enterprise

The philosophical roots of modern capitalism go back to the eighteenth century and Adam Smith's idea and theory of the self-adjusting liberal economy. His laissez-faire capitalism assumed economic freedom for all individuals. It is important to note, however, that economic freedom was not the end, but the means to elevate the absolute level of the wealth and welfare of a nation's people.

Free enterprise, seen in this light, is not an article of religious faith, but merely a pragmatic system of organizing economic resources to maximize wealth and welfare. The motivating force of laissez-faire capitalism was provided by people working in their own economic self-interest. The presumed result was totally fluid allocation of resources; a person with alternate investment decisions would always choose the higher yielding opportunity, a laborer would always choose the higher paying job, and so on. The economy would thus be regulated through operation of completely free markets for labor, capital, goods and services.

This free market capitalism depended for its operation on two implicit assumptions; one never held, and the other no longer holds; these assumptions were:

- Total rationality of all persons, and
- The relative insignificance of each laborer, production, and capital unit.

Man is not now, and never was, a totally rational being. The substitution of total rationality for a more pragmatic human psychology may have made the theory much simpler, but it also effectively removed it from the real world. Any realistic economic system must take account of the vagaries of human behavior.

Individual economic units, beginning during the industrial revolution, did become significant influences in a whole national economy.

These two underlying assumptions that were supposed to make free enterprise work are no longer valid. As a result, we operate under a modified free enterprise system in which government attempts, through regulation, to counterbalance those failed assumptions.
tion is no longer valid. The additional assumption that social fabric and individual psychology were elastic enough to adapt to whatever environment was wrought by free enterprise is no longer valid either. Technology has produced such vast quantities of noxious effluents—chemically, socially, and psychologically—that these can no longer be ignored; they must be accounted for. And what accounting do we have today? The same glorified bookkeeping which was already inadequate in pretechnological days!

External decision-makers do not need internal accountability information to any notable degree. But they do need economic information. And they do need information on how wisely resources have been applied—not only capital, but human and natural resources as well. Since this information is needed, it is up to accountants to figure out how to communicate it systematically and reliably.

Public vs. Private Sectors

Accountants historically have allocated most of their accounting thought to commercial enterprises. As a result, accounting for nonprofit and governmental entities has not been considered as thoroughly.

As our economic system has met the material desires of the people, there has been a tendency to shift the emphasis to meeting social needs. The natural (if not unanimously approved) result has been expansion of the public sector to deal with these needs. As examples of the large role government has assumed in the economy, government bodies (of all types) account for nearly one-third of the gross national product, own more than one-third of all the land area in the United States, and employ 13,000,000 persons. Add to these government figures those of other nonprofit entities, such as foundations, hospitals, universities, and the totals are immense. Any overall social accounting must include this vast sector of the economy. These units must begin to provide much more relevant data on their stewardship of resources. As with commercial enterprises, the required data must include information on much more than merely financial bases. It is time that this sector accounted for how wisely it has used human, natural, and capital resources, also. Therefore, accountants must develop more relevant accounting for the public sector as well.

Behavior vs. Information

Accountants have historically been concerned with the information in financial reports, not the behavior of users of those reports. However, since accounting exists only to permit progression toward certain goals, the only measure of its utility and effectiveness is how it affects behavior. In this sense, the information in a report is irrelevant if the desired behavior occurs. Of course, it is logical to assume that a report containing a random assortment of true and false information would not reliably influence behavior in the desired direction. However, the implication is clear: accountants must cease their interminable debate on the truth, objectivity, neutrality and verifiability of information in financial reports and concentrate instead on the behavior induced by those reports.

It should be obvious that behavior is not influenced effectively if a person is rewarded when he moves away from the goal and penalized when he approaches the goal, yet accounting frequently acts in just this way. For example, the executive electing to have his company act responsibly may show lower accounting income and command a lower salary than one electing to ignore nonfinancial objectives, because the accounting considers only one type of relevant fact and ignores another in this case. Persons may not be motivated to make socially and environmentally desirable changes unless the method of measuring their success is changed, because they naturally strive to maximize their performance on the measurement scale actually used.

Users of Financial Statements

Accountants often claim that the information they produce should meet the needs of users of financial statements. Just who are the users that should be accommodated? The goals that accounting helps meet must be conceived in broad terms, such as improving the welfare and environment of the people at large. The individual self-interest of particular user groups may or may not be consonant with these overall goals. In fact, specific user groups generally have immediate interests narrower than the interests of society as a whole. Accountants therefore should not accommodate the interests of any user group, unless those interests coincide with the interests of society as a whole.

Many of the facts which need to be communicated by accountants are not easy to measure. In some cases they may be difficult to verbalize, let alone to quantify. But the fact that they are difficult to measure in no way implies that they should therefore be ignored; yet this is the typical reaction of accountants. Consider an important decision which must be made; it depends on two facts: one is of major importance, but difficult to measure, the other is of minor importance but easily measured. No sane person would advocate ignoring the important fact just because it is difficult to measure, yet this is precisely what accountants do when they report easily quantified financial data and ignore the difficult social and environmental data.

If we need measurement of a certain fact, a crude measure is better than none at all. Conversely, if we do not need a certain fact, it is useless no matter how precisely measured and stated. Precise measurement is necessary only when a fact is marginally important to a decision. Often the significance of a fact is so obvious that no precise measure is necessary. In other cases, of course, greater precision is desirable. For example, assume a certain company is considering moving three of its production facilities; the first employs 40 per cent of the work force in a small and poor city with no other potential industry in sight, the second employs 10 persons in a great metropolis, and the third employs 3 per cent of the work force in a small but prosperous city. In only one of these cases is the measurement of personal dislocation a problem; in the small, poor city, the social cost must be reckoned a very significant factor; in the great metropolis, the social cost is negligible; but in the other case, a more precise measurement is called for in making the decision.

Measurement of social values is an exceedingly difficult task, but one which, nonetheless, must be attacked promptly.

Accountants and Measurement

Accountants as a class like and prefer quantifiable data. This is true because accounting has traditionally dealt with quantifiable financial data; therefore, only persons who are in-

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clined toward quantitative data, and who have a low tolerance for ambiguity, have been attracted into accounting. These persons are apt to look with horror and revulsion at ambiguous and unquantifiable data. They thus tend to see the measurement of social data as not only difficult (or even impossible) but also distasteful and crude.

There is no intrinsic reason, however, that accountants need to be quantitative types (in spite of the fact that the word “accountant” is built on the root “count”). If they cannot deal comfortably with ambiguous data, then they must attract into the profession those who can.

Accountants and Ethics

At this point, accountants are likely to say “All this may be true, but it is not our place to get involved in the ethical problems which must be the natural result of pursuing specific goals; we will not give up our cherished neutrality.” The cherished neutrality is a myth. Accountants, in carrying out their work, are already facilitating progress toward a set of goals. These goals are deeply embedded in our current economic and financial environment. Many accountants would not endorse them, however, if they were explicitly stated, yet they work toward them daily. Stated in their baldest form, a few of these goals are as follows:

• All human values should be stated in monetary terms, and the total monetary value should be maximized.
• Nature should be exploited, conquered, and developed.
• Workers should be exploited until they are exhausted, then discarded.
• Customers, too.
• And physical assets.

Most people would not subscribe to these goals, but they are the implicit goals many of us are mindlessly pursuing.

The accountant is, always was, and always will be immersed in the ethical problem. How much better it would be to recognize and accept this fact and explicitly attempt to pursue more humane objectives.

Achieving the Objectives

It is one thing to claim accountants should be doing all these things, but quite another to do them. Where do they start? Is there any hope for success?

Clearly, it would be impossible to achieve these changes in just a few years. But accountants must begin to work in these directions.

Following are some of the things accountants should be doing now to bring about the eventual realization of these reforms:

• Accountants must develop techniques for preparing and testing a variety of forecasts and budgets, including cash flows, uses of human and natural resources, and other relevant types.
• The accounting profession must begin to attract highly qualified persons who are intellectually and emotionally equipped to deal with unquantifiable, ambiguous data, and must work in conjunction with these people to develop useful forms of reporting these data.
• A greater portion of available accounting resources must be directed to investigations of accountability in the public sector; this accountability should encompass the social and environmental effects, just as in the private sector.
• Techniques must be explored to facilitate more frequent and more rapid dissemination of relevant data.
• Financial statements purporting to present current and historical information must be prepared on an economic basis, instead of the obsolete accountability basis. This implies the use of current values, fair values, and liquidating values in contrast to historical or price-level adjusted cost.
• Accountants working in the behavioral area must be encouraged and supported; their results must be field-tested and adopted as soon as practical.
• Enterprises must be encouraged and persuaded to experiment with reporting nonfinancial costs and values.
• Accountants must be encouraged to see their role not as communicators of financial information, but as communicators of decision-making information.

Of these suggestions, only one would result in immediate, substantial change (the abandonment, as soon as possible, of historical cost basis financial statements), but the cumulative effect of all of them over ten or twenty years should be the development, for the first time in history, of an effective information network to permit orderly progress toward humane social goals. If technology continues to cause rapid change in the absence of a sensitive information network, it is only a matter of time until our whole economic, social and political structure goes out of control, perhaps for the last time.