

Obsolescence and Depreciation

Studied From Management's Point of View

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Foreword by
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I am glad that Mr. James has written this article, with his suggestions regarding the treatment of obsolescence, not because it represents the opinion of the Bureau of Foreign and Domestic Commerce, for it does not—the Bureau holds no opinion—but because it brings a new point of view into this important discussion.

Hitherto the controversy regarding the treatment of depreciation and obsolescence has been largely limited to accountants. But the results of accountants' figures become basic tools for the managers of industrial organizations. It would help greatly towards attaining sound conclusions; if the chief administrative officers of industry would take an active part, with the accountants, in discussions of this character, for the issues are not merely questions of method but questions of purpose.

EVER since Halford Erickson wrote his famous definition of depreciation for the Wisconsin Public Service Commission accountants have leaned almost wholly towards the inclusion of obsolescence as one of the facts of depreciation. The United States government, in its regulations and decisions relating to income tax computations, has followed the same practice so far as it has allowed obsolescence to be included as one of the costs of manufacture.

¹This article has been written to voice a personal suggestion, in no way to be taken as the view of the Department of Commerce, in the discussion of depreciation and obsolescence and their accounting. The manager's viewpoint, instead of the accountant's, is that from which it has been prepared. No specific suggestion, therefore, has been made as to detailed methods of application, but it is left to the valuation people and accountants to decide how far the suggested differentiation of obsolescence should be carried out and how it should be done.

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It is the purpose of this paper, however, to distinguish between obsolescence and depreciation, taking the latter in its older and more restricted sense of reduction in value caused by deterioration whether from wear or from age. Obsolescence is here used to denote the unforeseen wiping out or lowering of value of production equipment because invention has supplied a better device for the purpose, because fashion has ruled it out of style or because the business of the owner has outgrown his equipment. It is the writer's belief that manager's and cost accountants should recognize that obsolescence and depreciation, so defined, are governed by quite different laws and affect values so differently that their accounting and financing should be handled separately.

Depreciation should be confined to the wearing and the aging of productive equipment which makes that equipment less and less efficient and therefore less valuable as time goes on. Such deterioration can usually be foretold with a considerable degree of accuracy. For instance Nicholson and Rohrbach in their "Cost Accounting" discuss at length the factors of age and of wear in use, and have proposed a schedule allowing for deterioration from age at a constant rate plus a rate for wear depending on how many hours a day the factory is run.

Obsolescence, on the other hand, is the sudden loss of the usefulness of a productive machine because a better and more efficient one has been invented and put into use with which the original one cannot compete. The value of the original is suddenly wiped out when the new machine appears but no one can foretell when that will happen.

Recently the equipment policies of two companies were brought into sharp contrast in a way that gives point to some important and interesting questions regarding obsolescence. Manufacturers,

it is only fair to state at the outset, have not come to any agreement as to the answers to these questions, and common practice in different localities is at wide variance. The following examples are merely extreme cases which may serve as illustrative.

A New England factory, which has a long history of successful operation but which lately has been feeling competition from other parts of the country, has always prided itself on the upkeep of its machinery. Some machines have been in almost constant operation for twenty-five or thirty years, and are apparently running as true and as smoothly as they ever did. The company has been conservative, with an eye to the future in all its policies. Depreciation has been charged off the plant and equipment on an "ultra-conservative basis"; even minor improvements and replacements as well as repairs have been charged to maintenance expense "so that there are no inflated values to carry." The engineering staff of the company is of high calibre. Every member is informed on the best and latest developments in machine tools and mechanical equipment, and when anything new is bought it has been the company's policy, for years, to buy the best regardless of price. But replacements are rarely made except when old machines are physically worn out.

An outsider recently diagnosed the company's present difficulty in holding its former position of dominance in its business as resulting from its not being up-to-date in factory and equipment. Yet in specific instances where modern machines were recommended to replace those in operation, it could not be shown to the executives' satisfaction that the increased production possible on the new equipment would balance the increased overhead arising from the difference between the depreciated book value of the old machines and the price plus installment cost of the new ones.

The company's executives also questioned whether they could make full use of faster machines than they, already had because their equipment had been carefully balanced to keep idle machine time at a minimum. The installation of such new machines, they feared, would necessitate further changes in other equipment in order to maintain this balance, which might turn out to be far reaching and costly.

As contrasted with this situation, the writer recently met an equipment salesman who had just received an order for \$87,000 worth of new machines to replace equipment which the same salesman had sold to the same company less than a year and a half before. This company, not in the same district as the first, is also a company of high standing, over thirty years old, and reputed prosperous. There is almost no equipment in the factory over ten years old and a considerable portion of it is not over five years old. It is seldom that a machine is kept after a new one has been produced which is more efficient, regardless of the physical condition of the former.

The difference in policy between these two companies leads one to question the whole traditional method of depreciation accounting. Should a perfectly good machine be discarded as obsolete? The first company says "No, not unless the new one will show so much lower costs than are now being realized that it will pay for itself within two years"; whereas, the second says "Of course; if it is less efficient than the new one, it does not matter what its condition is, it should not be kept." Here is a far reaching difference in policy, especially when the cost system, which is depended on to tell the first company when to replace its old machine, sets an arbitrary standard which works in favor of retaining it.

The second company in the illustration does not recognize depreciation. The officials maintain that they do not allow their equipment to depreciate; their replacement and upkeep charges are their depreciation expense. But they are keenly alert for obsolescence and they say that, in their thirty odd years' experience with mechanical progress, no machine has escaped obsolescence long enough to wear out. Incidentally it may be said that they usually find ready buyers for their discarded equipment and seldom take large losses on it because machines which may be obsolete for mass production are not necessarily obsolete for the small producer.

Cost accountants, public utilities commissions and bankers frequently discuss depreciation. Some consider it merely an accounting of wear. Engineers are asked how long a machine may be expected to run, and their answers serve as the basis for setting up depreciation charges. Factory buildings, similarly, are written down each year on