

Information Systems: Some Views on the Decisional Process

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Résumé de l'article

L'auteur de cet article technique établit d'abord les changements considérables qui ont lieu constamment dans le domaine de l'informatique. Les modifications sont telles qu'il peut arriver que le prix soit inférieur au coût déprécié, tant les progrès sont rapides et assez extraordinaires dans cette industrie de pointe. La méthode de dépréciation varie d'une maison à une autre, comme l'indiquent les exemples mentionnés en appendice. Comme on le constate, il y a deux méthodes de déprécier le matériel, dans ce cas particulier. Quant au pourcentage de dépréciation, il est différent d'un établissement à l'autre.

Information Systems : Some Views on the Decisional Process

by

Harry Richardson⁽¹⁾

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The technological pace in information systems today is such that software development or package acquisitions may not survive management's expectations of the useful life of the project(s) under consideration.

In finalizing decisions, it is essential for management to anticipate, as much as humanly possible, the likelihood of major developments (hardware and software) being marketed by the vendors. State of the art technology will have a significant impact on the cost and efficiency of the new systems available to potential users.

Notwithstanding the above concern, we must also bear in mind that competition is steadily increasing in most fields of activity.

Companies need to automate, if they are to compete in today's business environment. Business retention, increased market share, productivity and quality improvements are some of the key issues

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and concerns for companies today where information systems play a key role. However, the question is, to what extent and at what cost ? This fact alone impacts the lead time associated with the decision making process, compelling management to be more reactive in an environment where some variables are still unknown and others may change in part or totally. Failing to decide may be as bad as deciding to fail.

Let's look at some of the financial and accounting considerations.

Company management usually evaluate, approve or reject systems projects on the basis of fundamentals such as :

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- the expenditures involved ;
- impact on the debt and equity ;
- the return on investment (savings or increased revenue) and the degree of compliance with a business plan.

Furthermore, procedures are mandatory to ensure adequate control over budgets and schedules relative to the critical phases in the life cycle of any project. Basically, the reasons governing the approval of systems projects should not differ from those governing any other capital expenditure.

A Company's business plan should be supported with a systems plan and all investments made on the basis of a clear definition of the objectives, functions and benefits.

All too often, Companies have started information systems projects with inadequate problem definition and planning. The result has been cost overruns, delays in implementation and overall user dissatisfaction with the deliverables. Failing to plan is as bad as planning to fail.

There is no panacea for these problems other than ensuring the adherence to policy and procedures by all concerned, including all levels of management.



Having briefly discussed some of the rationale needed when assessing projects, let's review some of the accounting principles and practices involved in recording the cost of projects.

Once the expected benefits from a specific project have been determined, one should not capitalize any amounts in excess of these benefits, notwithstanding the actual amounts spent. Theoretically, the excess of the amount spent over the expected benefits should be expensed as incurred. The principle supporting this position is to match revenues properly to expenses and ensure that future financial periods are not burdened and show only relevant revenues and expenses.

592 The amount capitalized have to be depreciated over the useful life of the assets thus showing for each financial period an adequate charge against the income generated by the expenditure.

When an asset, hardware or software, is no longer useful, it should be written off during the period such a situation exists.

The principles outlined above are common knowledge. However, the difficulties arise in applying these principles. For example, when assessing a major information systems project, it is very difficult to determine with precision the extent of the savings and/or cost reductions involved.

Consequently, Companies often end up capitalizing all sums expended for a given project. Such capitalization may not be appropriate and may directly affect the trend and comparison of financial results over the years. Each time a Company capitalizes amounts without determining the overall return on investment, the principles of conservatism and matching, to name only these two, are violated.

The two most common methods used for calculating the amount of depreciation (hardware and vendor software) and amortization (research, development and application packages) are the straight line method and the declining method. In the past, Companies has a tendency to opt for the declining method whereas the trend today is toward the straight-line method with shorter time frames to compensate for the pace in technological changes. Notwithstanding a compliance to the cost principle, the declining method is prone to leaving excessive net book values on the balance sheet for assets approaching retirement. For example, just a few years ago, no one would have predicted the tremendous increase in the capacity and performance of the microcomputer. This environment alone has attained a level of aggressive change whereby substan-

tial reductions in pricing are experienced within months of a purchase. In fact, the office typewriter of yesterday had a better chance of lasting its pre-determined useful life.

A brief survey of some Canadian and U.S. Companies shows a definite trend toward the use of the straight-line method for assets related to information systems.

In the same survey, depreciation and amortization varied from 3 to 7 years with most Canadian Companies not exceeding 5 years. Excerpts are included in the appendix.

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Considering the level and pace of technological change in our environment today, main computers should be depreciated over a period equal to the lesser of five years or the estimated useful life of the asset using the straight-line method with no cash surrender value even though most lease agreements contain purchase option clauses.

Microcomputers should be depreciated over the lesser of three years or the estimated useful life of the asset using the straight-line method with no cash surrender value. If the product to be purchased has been on the market for a year or more, it should be depreciated over the lesser of two years or the estimated useful life of the asset.

In the case of application software, the straight-line method should be used along with a careful examination of the projected useful life of the product. It would be preferable not to exceed a 5-year term.

It is clear that technological change, whatever its undoubted benefits, in no way lessens the need for decision making. In fact, given the exponential character of technological change, managerial decision making will be an increasingly complex matter.

APPENDIX

Source : Financial reporting in Canada 1985 – Annual Reports

PE Ben Oilfield Services Ltd. (page 124)

- Computer equipment under capital lease is depreciated using the *straight-line basis over five years.*
- Computer software is amortized using the *straight-line basis over five years.*

COMTECH Group International Ltd. (page 130)

- Computer equipment under capital leases is being amortized on a *straight-line basis over seven years*.

LUMONICS Corp. (page 187) – Company develops software packages

- Development costs relating to specific products that in the Company's view have a clearly defined future market are deferred and amortized on a *straight-line basis over three years* commencing in the year following the year in which the new product development was completed.

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La St-Maurice, compagnie d'assurances

Source : Groupe Prêt et Revenu et ses filiales – Annual Report 1980

- Computer equipment is depreciated on a *straight-line basis over five years*.

WIX Inc.

Source : Financial Reporting in Canada – 1983

- Electronic Data Processing equipment is depreciated on a *straight-line basis over five years*.

Crownx Inc. (December 31, 1983)

- Electronic Data Processing equipment depreciated over a period from 2 to 6 years. The note to the financial statements is not specific as to the method used.

Source : *Accounting Trends and Techniques* – 1984 (American Institute of C.P.A.)

The Dun & Bradstreet Corporation

- Purchased computer software is being amortized using the *straight-line method over five to seven years*.

Management Science America, Inc.

- The cost of purchased software or software acquired through business combinations is amortized using the *straight-line method* periods from 3 to 7 years for financial reporting purposes. All costs associated with development and enhancement of software products are expensed as incurred.