
Abstract
RS: Radical solution
A radical solution to the problem of <producing more optimal budgets> is described, based on <simulating potential budgets using a mathematical model of the organization>. In comparison with <existing ad hoc budgetary approaches> it offers <the potential for more profitable budget allocations>, which has been demonstrated in preliminary tests, but it leaves a number of side effects to be addressed including <the challenge of constructing the initial model>. Strategies are suggested for addressing these side effects.

Why RS?
Spreadsheets have existed as a concept for a long time. (Even bankers in the Middle Ages kept books listing who owed them money.) But as far as anybody knows, Mattessich is the first person to write about using a computer to simulate the flow of money. Moreover, Mattessich realized that incorporating recent optimization techniques from operations research (specifically linear programming) would allow the selection of a most profitable resource allocation.

This paper was a watershed: it represented a new way for accountants to relate to management. Although Mattessich’s initial implementation didn’t survive, the ideas did. Over the 15 years, a profound transformation occurred in the world of accounting as practitioners took on a more mathematically formal and algorithmic view of their work. As a result, by the end of the 1970’s, accounting had become fertile ground for the invention of the spreadsheet as we know it.

Question - [Method/means of development]
<problem definition>
How can we produce more optimal budgets?

Results - [Procedure / technique]
$model-type / solution strategy$
- Step 1: Get a mathematical model of organization
- Step 2: Simulate various budgets according to model
- Step 3: Use linear programming to select the most profitable resource allocation

Validation – [Example]
$solution strategy$
The author applied Step 1 to one existing semi-qualitative model (based on somebody’s thesis, not real experience). In this paper, Steps 2 and 3 are proposed but not actually validated. Those aspects of validation were fleshed out and published in fuller form in 1964.

<existing normal solutions>
Previously, organizations had generally done informal summaries of budgetary data, apparently in a somewhat ad hoc fashion. As a result, it was difficult to try out different budgetary strategies to see which would produce the most optimal profitable budgetary allocation.

<advantages>
The new approach makes it feasible to use linear programming to find a more optimal solution, thus yielding higher profits.

<list of side effects>
The true optimality of the result is, of course, subject to the accuracy of the underlying model used to structure the simulation.