

# Relevance lost: the rise and fall of activity-based costing

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**Abstract.** In the debate between marginal decision-making and full absorbance that has been going on since the nineteenth century, activity-based costing/management (ABC/M) appeared as a promising decision support tool which answers the criticism leveled against traditional cost accounting. This paper describes the strengths and weaknesses of ABC/M from a global value creation perspective, in an effort to explain why it failed to live up to its promise and why not too many companies retained it beyond a short pilot period. The paper suggests the global decision-making methodology (GDM), as an effective alternative to costing methods, which improves the quality of decisions and enhances organization value. The paper illustrates its implementation by presenting a case study of a large international financial services organization that abandoned the ABC/M system it had been using for seven years in favor of GDM. The ABC/M system was transformed to a throughput focused “light ABC” system that supports GDM. The article describes the circumstances that led the organization to adopt GDM, and provides general guidelines for its implementation.

**Keywords:** Activity-based costing/management (ABC/M), global decision-making methodology (GDM), light ABC, Theory of Constraints (TOC), the measurements profile



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## 1. Introduction: the many paradoxes of cost accounting

Though cost accounting systems do not usually rank high in organizational hierarchies, the information they generate plays a major role in the decision-making process and has a crucial influence on organizational performance: sometimes it is used to determine product prices and product mix, to decide on outsourcing or

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off-shoring activities, investments etc. Indeed, the mismatch between the perceived importance of cost systems and their impact on organizational value is one of the main paradoxes of cost accounting usage.

Ever since the nineteenth century, firms have been oscillating in their cost accounting practices between marginal decision-making and full absorbance, that is, between contribution costing and absorption costing. Consistent with the basic economic theory of the firm, which claims that decisions should be made according to marginal costs and not by the total average cost per product, contribution costing (also called “direct costing”) focuses on direct costs and is perceived as suitable for decision-making. It differs from absorption costing in its treatment of fixed production costs, regarding them as periodical costs and presenting inventory according to its variable costs, whereas absorption costing allocates a proportional rate of the fixed costs to the units produced during the period but not sold yet. The decision-making direction of The Theory of Constraints (TOC) [16] is based on contribution costing principles. Unfortunately, in practice most organizations prefer absorption costing, even though it involves arbitrary allocation of overhead costs. One of the main reasons for the use of absorption costing is that it is the mandatory generally accepted accounting principle for external financial reporting, and integrating financial and managerial accounting systems ensures better costing control. Yet another reason is that it avoids the alleged dangers of marginal costs leading to lower contribution, which can happen when organizations facing fierce competition are tempted to lower prices, sometimes to the point where each sale barely has a positive contribution. As the challenge is to achieve enough contribution to cover all the fixed costs and obtain profits, the danger is therefore that extensive use of contribution pricing may lead to an absurd situation where each activity creates positive contribution and supposedly should be carried out, but the organization, as a whole, is unprofitable since the cumulative contribution does not cover the fixed costs.

Over the years, the proportion of fixed costs attributed to products on the basis of arbitrary allocation has grown and created grave distortions, which have in turn led to real damage to organizations. Kaplan’s 1984 paper [20] “Yesterday’s accounting undermines production”, was one of the first among many publications to depict the faults of traditional cost accounting, and the time was ripe for the rise of the new methodology – “activity-based costing”, which was developed mainly by Cooper and Kaplan [6,7].

Though the deficiencies of traditional cost accounting led many organizations to turn to activity-based costing/management (ABC/M) as a promising decision support tool, not too many of them retained the methodology beyond a short pilot period. Despite the praise heaped on it by academics and management consultants, in practice, most firms still use traditional accounting systems [14,19], even though their faults are well known.

This paper suggests the global decision-making methodology (GDM) as a tool for effective decision-making, prescribing a “light ABC” mechanism that may help “heavy users” of ABC to make the transition to GDM. Section 2 examines ABC/M critically and explains its strengths and weaknesses. Section 3 presents the global decision-making methodology and the rest of the article describes a case study of a large service organization that had been using ABC/M for seven years before deciding to adopt GDM. Section 4 depicts the organization and its ABC system. Section 5 demonstrates the use and misuse of the ABC system. Section 6 outlines the proposed solution: adoption of GDM and making the transition from the “cost world” to the “throughput world”. Section 7 discusses the issues relating to GDM implementation and the required organizational changes. Section 8 concludes the paper.

## 2. ABC: a critical review

ABC is still perceived by practitioners and academics as the normative appropriate cost system, and most managerial accounting text books [18] contain chapters that explain its principles and demonstrate its superiority over traditional absorption costing. It is intended to support strategic decisions and as Cooper [5], one of its foremost supporters, claimed its purpose is merely to focus management attention on resource consumption. Nevertheless, many additional benefits of using ABC have been reported, among them the following:

- Managers at all organizational levels perceive ABC data as more accurate and reliable than those generated by traditional costing and are willing to use them for decision-making and performance evaluation. For instance, Kaplan, Weiss and Desheh [22] reported a successful implementation of ABC transfer prices at Teva Pharmaceutical Industries, which diminished the endless disputes between the marketing and production departments.

- ABC handles overhead costs, which in most organizations constitute the main operating costs, and addresses marketing, general and administrative costs, as well. Whereas traditional cost systems frequently understate profits on high-volume products and overstate profits on specialty items [6], ABC reveals the cost of complexity arising from the range of products and variations by allocating all costs to the products or services that consume them. ABC implementation leads to a better understanding of the cost drivers that generate these costs, thereby focusing management attention on the way resources are consumed by activities and supporting effective management of these activities.
- ABC/M is suitable for service organizations, while traditional costing is irrelevant for them. Thus, for example, ABC systems have been implemented by banks [9], healthcare organizations [1], government organizations [3], telecommunications organizations [17] and insurance firms [24].

Nevertheless, as ABC is essentially a refinement of absorption costing, it suffers from the weaknesses that are typical of absorption costing, and may be criticized as follows:

**ABC is based on subjective arbitrary cost allocations.** The main difference between traditional absorption costing and ABC is the number of allocation bases, or cost drivers in ABC terminology. The use of absorption costing requires subjective selection of absorption criteria, allocation criteria, and volume assumptions. ABC creates a more complicated costing system, but not necessarily an accurate or useful one [25]. When the production volumes change, ABC cannot predict profits, therefore it is not adequate for decision-making.

**ABC ignores constraints and does not differentiate a bottleneck from resources with excess capacity.** If a firm has an internal capacity constraint, i.e., the demand for its products is greater than its production capacity, the firm should determine the optimal product mix according to each product's contribution per unit of the limited resource [26]. The "costs" of the various products are not relevant for the product mix decision. **ABC regards the relation between activities and resource consumption as linear, absolute and certain.** This means that additional activities result in additional costs, and reduced activity levels imply cost reductions. However, in reality, there are discontinu-

ities of costs. For example, if an airplane takes off half empty, neither the cost per passenger calculated under the assumption of full capacity nor the cost per passenger based on actual capacity is relevant for decision-making. Suppose the cost per passenger based on full capacity is \$300 and there are 150 seats on the plane. The usual ticket price is \$400. If the airline reduces the price to \$299, for last-minute travelers, it can fill the airplane. Most of the flight costs are fixed, so the **cost per passenger** datum is **irrelevant** for decision-making. A profit & loss per flight report based on these data is similarly flawed.

All in all, allocation of all kind is arbitrary, and the use of any method based on full allocation (traditional cost accounting or ABC) may cause a misleading decision-making process.

The feeling is [12] that it was disappointment with traditional cost accounting and the lack of appropriate alternatives that prompted the initial enthusiasm for ABC, and when its weaknesses became apparent the interest in the method naturally waned. Managers also felt that traditional cost accounting is not relevant, and that they "have to do something different". This may explain much of the ABC proliferation during the 1990's.

Nevertheless, even though most firms that tried ABC ultimately decided to abandon it, they did seem to regard it favorably, judging by the many case studies and articles in the literature [7]. However, it seems that the benefits to the firms stemmed not from the cost allocation data but rather from the fact that the ABC pilots involved thorough analysis of processes and costs, and drew attention to neglected aspects of organizational activities. This resulted in improvements that were attributed to ABC and thus enhanced its positive image. What ABC actually did was to emphasize the need to focus and to cut down the cost of operational complexity. However, once managers internalized these lessons, they no longer required complex cost data to make improvements, and used non-financial measurements instead.

### 3. The global decision-making methodology (GDM)

GDM is a simple practical method for organizational decision-making. It supports decisions on issues such as pricing, make or buy, capital investments, adding new products or services, closing product lines and more. The three stages of GDM are as follows.

- Stage one: Make a global economic decision from the CEO's point of view.
- Stage two: Take into account strategic considerations.
- Stage three: If necessary, change and refine local performance measurements.

### 3.1. Stage one: global decision-making

The goal of a business firm is to increase its shareholders' value over time. The value of the firm is derived from the capitalization of its future cash flow [8]. As we have seen in the previous section, local performance measurements such as cost per unit, transfer prices, P&L of a profit center etc., might distort the decision-making process and cause sub-optimization. A decision should add maximal contribution to the organization's target function, and as such it should be taken from the CEO's point of view. The two tools that support the GDM process are:

- The measurements profile.
- The cost/utilization (CUT) diagram.

#### 3.1.1. The measurements profile

The measurements profile is a tool to support global decision-making that examines alternative courses of action through the organization's global performance measurements. It is a two-dimensional matrix of which the columns present the different action alternatives and the lines present the performance measurements, as shown in Table 1. The first three measurements were defined by Goldratt and Cox [16] and the other three were suggested by Eden, Ronen and Spector [13].

We now describe briefly the six global performance measurements presented in Table 1 (for an elaboration see [11]), noting that they are not the only ones that support the decision-making process; some of the measures can be modified or dropped, and others can be added to fit the organization's particular characteristics.

Table 1  
The measurements profile

Performance measurements	Alternative A	Alternative B	...
T	Throughput		
OE	Operating expenses		
I	Inventory		
LT	Lead time		
Q	Quality		
DDP	Due-date performance		

**T – Throughput** – throughput is the effective output of the organization. In business organizations throughput is defined as the cash flow generated by sales. More specifically, it is the total actual sales (i.e., sales less refunds and cancelled transactions) less the real variable costs (i.e., raw materials, commissions, subcontracting etc.) of these sales. The decision about a certain course of action should be based on its contribution to the organization's throughput.

**OE – Operating expenses** are the total fixed expenses of the organization at the measured period. These include direct labor, indirect labor, rent, machine maintenance etc. As with the organization's throughput, the operating expenses concept requires a global examination of the influence of a proposed action (e.g., outsourcing of a certain activity, closing a product line, investing in a new machine) on the total expenses of the organization.

**I – Inventory** is usually divided into three categories: raw materials, work-in-process and finished goods. The three inventory types are measured only by the costs of raw materials with no further allocation of costs. All the conversion costs are considered fixed operating expenses. This facilitates the calculation of inventory values and its analysis. For instance, if the value of work-in-process increases, it is clear that it was not caused by changes in allocation rates.

**LT – Lead time** – the organization should identify its main processes and measure their response time from the customer's perspective, disregarding the internal division of the responsibility for delays.

**Q – Quality** enhances value creation. Each organization should define its own relevant measurements, such as percentage of defects, percentage of products returned by customers, non-conformance quality costs etc.

**DDP – Due-date performance** reflects the organization's ability to adhere to its quoted delivery schedule. Not only do late deliveries mean decrease in goodwill, they usually mean more expenses.

#### 3.1.2. The cost/utilization (CUT) diagram

The cost/utilization (CUT) diagram is a simple graphic tool that supports global decision-making. Borovits and Ein-Dor [2] originally developed the cost/utilization model to analyze the utilization of computer systems components in relation to their cost. Later, Ronen and Spector [27] adapted the tool to analyze system constraints. The CUT diagram implements the concepts of the Theory of Constraints methodology.

The CUT diagram is a histogram of a system’s resources, each bar representing one of the resources. The height of the bar denotes the utilization of the resource, which is between 0% and 100%, and the width of the bar denotes the relative cost of the resource. Figure 1 presents three different systems: a system with a plausible resource constraint, a system with a “dummy” constraint (i.e., a very inexpensive resource that prevents the system from achieving more throughput), and a system with excess capacity (i.e., throughput growth is constrained by the market demand for the firm’s products) [27].

The CUT diagram enables managers to review the system resources and make their decisions accordingly. Thus, for instance, a make/buy decision will be very different, depending on whether it has a resource constraint (a bottleneck) or it has excess capacity. If the firm has a resource constraint, outsourcing of certain activities may enable it to increase throughput. However, in the excess capacity case, outsourcing will decrease throughput, because sales will remain unchanged while variable costs increase.

3.2. *Stage two: strategic considerations*

Strategy relates to long-term considerations, including intangible benefits. At Stage one, the decision is made from a global economic perspective. Now, the decision-makers can weigh strategic considerations that may change the economic decision, and they will know the “price” of the strategic consideration. Too often, when decisions are made superficially without regard to economic values, on the claim that they involve “strategic customers”, “strategic products” or “strategic territories”, one is left to wonder whether these terms might perhaps be a cover for the inability to ra-

tionally justify the investment or the decision. Strategic considerations are important, but management should be better equipped to make qualitative decisions when they have a “price tag” attached. It may not be easy to quantify strategic benefits, but most managers will know if they are willing to pay a certain price to get these benefits, or if the price is too high. For instance, a firm may be willing to invest 100 000 USD in order to prevent its competitors from accessing a certain market segment. However, if the required investment is 1 million USD, they may decide to take the strategic risk. Strategy should have a “price tag”.

3.3. *Stage three: change local performance measurements*

Frequently, local performance measurements distort the decision-making process. Sometimes, managers knowingly make a wrongful decision that maximizes a local performance measurement, rather than a decision that would increase the entire organization’s profit but at the same time impair their local performance measurements. Hence, it is necessary to examine and adjust local measurements so that they contribute to enhancing the goal of the entire organization. Local measurements such as “cost per unit”, “machine utilization”, “profit per product”, “transfer prices” and “number of produced units” may distort decisions and should be changed.

For example, suppose we want to measure the performance of a call center that takes care of customers’ complaints. If the local measurements are “number of calls handled” and “cost per call”, this means that the more calls the center handles the better its local performance measurement. However, is it in the best interest of the organization for the call center to get a lot of

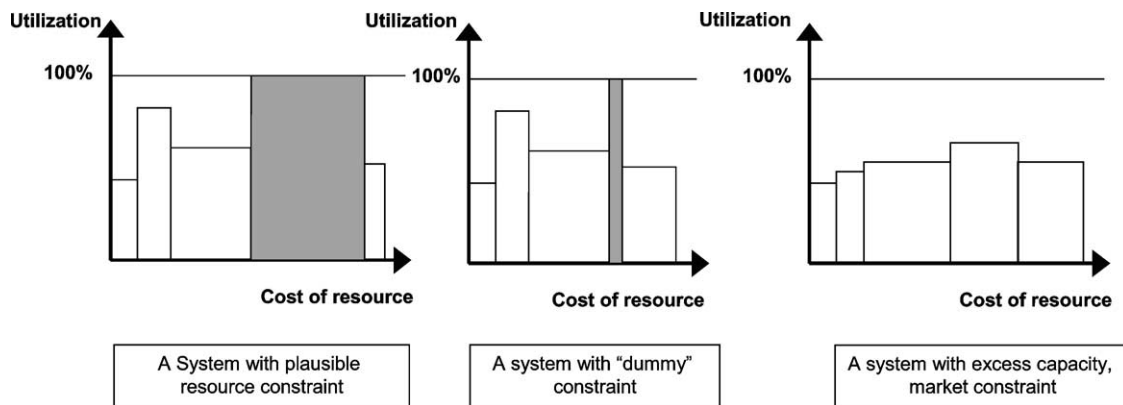


Fig. 1. Cost/utilization (CUT) diagram.

calls? Actually, the call center is considered a “garbage plant” [28] which cleans out mistakes made by other departments of the organization. What would happen if the call center manager initiates actions that reduce the number of calls received? This can be done by analyzing the causes of the calls and informing the responsible department for each cause, thus helping them to improve the quality of their processes [10]. In the short term, the local measurement of “cost per call” will show an unfavorable result of higher cost, since the fixed costs are allocated to fewer calls. The “number of calls handled” local measurement will show that fewer calls were handled. This might be considered “bad” if one expects a call center to handle more calls, but it is “good” if the goal is to eliminate the “garbage plant”. In the authors’ experience, using the measurements profile is a move that yields a better global view of a subsystem such as the call center.

#### 4. A case study

This section and the following sections present a case study of a large international service company that had been using ABC/M for seven years and decided to adopt the global decision-making methodology. Here, we describe the company and its ABC system.

##### 4.1. Company background

The company is a large international financial services organization with an estimated annual turnover of over 1 billion USD. The industry is very competitive and comprises a few large companies. Although there are high entry barriers due to the major investment required in information systems infrastructure, customer lock-in virtually does not exist. Private customers may choose their service provider on the spur of the moment. Business customers can easily switch their service providers. The type of service given by all the competitors in this industry is essentially the same.

Competition is based mainly on price and customer service. Managers must decide on issues such as pricing policy, discounts, customer bonuses, customer loyalty program policies, new product versions and the level of effort and resources to invest in retaining a certain business client. The costing system has to provide the necessary information to make these decisions. If the information is not adequate the business consequences may be undesirable. Thus, top management attributes great importance to the costing system and the accuracy of the information it provides.

##### 4.2. The ABC system

The ABC system was implemented in 1997 and was based on a thorough analysis of processes and activities. The result was a system with several hundred activities that would take two days of computer time to calculate the costing data. Moreover, the time and efforts required to collect the input data was huge, and it involved gathering information from people across all organizational levels. Each quarter the system had to be updated due to changes in working processes and organizational structure that affected the estimates of resources consumed by the various activities.

The company started to use the ABC data for decisions concerning the pricing of products and services and for estimating the profitability of proposals for new products and services. The ABC system yielded another important result: the Industrial Engineering department used ABC information to locate costly processes and improve them. These improvements were perceived as a concrete evidence of ABC’s usefulness, since they produced measurable cost savings.

Up to this point, the company had followed a routine similar to many others that tried to implement ABC, gained some benefits from analyzing processes, but decided to abandon it and continue using their traditional costing systems. However, this company acted differently. When management understood that the ABC system’s complexity was making it infeasible, they decided to downsize it, cutting the measured processes by half and running the analysis twice a year.

In the seven years that followed, the company continued developing the ABC system and it became a strong core competence of the organization that supported the decision-making processes. The core competence tree (CCT) presented in Fig. 2 describes the links between the costing systems’ main strengths with the goal of the firm. The tree is built by applying a root-cause-analysis methodology [4]. With the strong support of the company’s CEO and CFO a systemic infrastructure was created for information handling. The information system, which includes a database at the individual customer level, gives immediate responses to queries regarding the contribution of a single customer, be it a business or a person, and gathers other qualitative information regarding the customer and, of course, various costs that are attributed to the customer. Altogether, its capabilities and its support for customer-retention decisions, such as discounts, tariffs and other benefits, are unparalleled by the com-

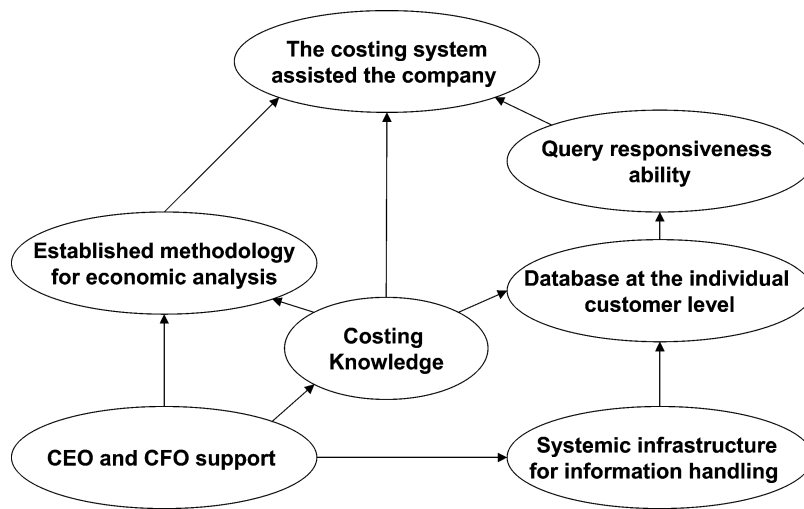


Fig. 2. Core competence tree.

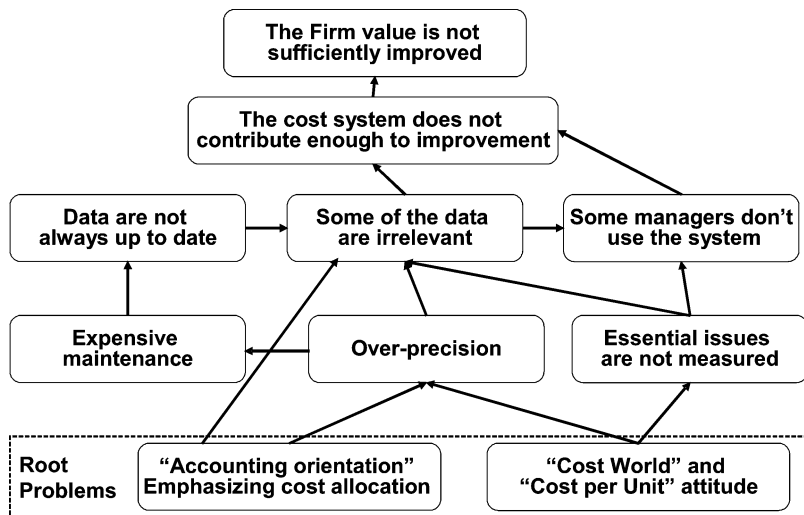


Fig. 3. Current reality tree.

pany’s competition. But good information systems are not enough. Without the backing of the CEO and CFO the system would not have developed and continued for as long as it has.

The company’s ABC system was however far from being flawless, as demonstrated by Fig. 3 showing the current reality tree [15] that analyses its weaknesses. The first root problem was that the ABC system was “accounting oriented” and emphasized cost allocation and the second, closely related root problem was the “cost world” and “cost per unit” attitude. Together, these two problems led to over-precision in the data collection processes, which resulted in relatively expensive maintenance. In order to save maintenance

costs, the figures were updated only twice a year and were not always adequate for decision-making purposes. Thus, for instance, the system focused mainly on costs but did not provide sufficient information on revenues, and it made no distinction between a one-time deviation and a deviation that required management attention. Hence, some data were regarded as irrelevant.

The consequences of all these weaknesses were that, in fact, lacking trust in the ABC data, most of the company’s managers based their decisions on “marginal thinking” and good intuition that were seldom backed by data and information. The ABC system did not therefore contribute much to the company’s value.

Together with the rising maintenance costs and the need for an increased investment of management resources, there was then the serious threat of an unwise total abandonment of the system, with the resultant loss of opportunities to use the information infrastructure for global decision-making and performance control. It was these opportunities that were later to become part of the proposed solution. Nevertheless, it is important to emphasize the huge benefit gained by the system providing “contribution per customer” and “contribution per service” information. This information, though not a vital part of the ABC/M philosophy, was important for the decision-making process.

## 5. The faults, use and misuse of the ABC

ABC is aimed to support strategic decision-making [21], to help managers make better strategic decisions on products and processes and to influence product design activities [7]. Thus, the authors conducted seven interviews with top managers of the company, including the CEO and all vice-presidents, in order to examine how they used the ABC system. Each interview addressed the following issues:

- Current uses of the ABC system.
- Decisions that were based on ABC data.
- Decisions that did not use ABC data.
- Missing data that were required for strategic decision-making.

The current core competence tree (Fig. 2) and the current reality tree (Fig. 3) that were presented in the previous section were based on these interviews, as well as additional interviews with key managers involved with the ABC system, such as the department manager who is responsible for the ABC system and for preparing economic analyses for top management.

The main conclusion from the interviews was that the ABC system did not provide senior managers with adequate support for strategic decision-making. A decision concerning a new customer retention program will illustrate how the managers did not use the ABC data, had to correct erroneous data, or had to gather additional data. As a new business idea, the retention program had to go through a stringent cost/benefit analysis, for which the company had established procedures concerning the use of costing data. A lot of managerial time was spent during this analysis on arguments between departments on where and how to allocate certain fixed costs. There were two sources of prospec-

tive revenues from the new retention program: new customers, and current customers who might be expected to make increased use of the company’s services as a result of their inclusion in the program and boost the company’s retention rate. If the company decided against the new program, then a competitor would probably launch a program aimed at this specific market segment. In this case, revenues would decrease, since some customers would switch to the competitor. The ABC system dealt primarily with cost allocations and just collected some data on revenues without analyzing them. As it could not provide the necessary revenues estimates, the marketing managers gave their predictions based on intuition and incidental historical revenue data. The system provided ample cost data, but most of them were found irrelevant. It gave estimates of “cost per unit”, “cost per service” and “cost per customer”, most of which were overhead allocations. Usually, the numbers seemed too high, so managers asked to examine the calculations and the underlying assumptions. These checks always ended with new “costs per unit”, since some assumptions were modified and some costs were allocated differently. The final step in the decision-making process was always to match expected revenues and costs and see whether the new program was going to be profitable. If the result was positive, the analysis was over and the company would proceed with the new program. But, in many cases the prospects did not look good. In these cases, managers would ask the CEO to use only direct costs in his deliberations, as in the **throughput measurement** described in Section 3.1.1 above. The rationale for this course of action was that if the company did not launch the new program, revenues would be lost to competitors, as already noted. So as long as the additional expected revenues covered the additional expected costs, the program could be launched. In the end, common sense prevailed, and the right decisions were made in spite of the ABC system indications.

In line with its purpose of drawing management attention to issues that need to be taken care of [7], twice a year the ABC system put out detailed costing reports that contained “costs per products” and “costs per activities”, such as handling a customer call for a certain service. The reports compared the costs of the current period and the previous half year. If the cost of a specific service rose by 50% it certainly needed checking, but when such instances were further investigated, in most cases, it emerged that the process and the resources consumed were practically the same, and the cost increase was a result of a change in an arbitrary al-



location estimate. After investigating several such incidents, managers concluded that the large gaps in costs were probably not due to real major changes in activities, so they stopped checking the “exceptions”. Another outcome was that managers regarded the costs as unreliable and meaningless. Although theoretically, ABC was never intended to be used for control purposes [21], managers needed control information, and they expected their costing system to provide it.

For their part, middle managers did not use the ABC system, and were frustrated at having to spend time on providing data for it. However all the users were interested mainly in revenues and contributions and practically ignored the ABC allocations.

## 6. The proposed solution

The two root problems that prevented the costing system from adding value to the company were the “cost world” and the “cost per unit” attitude that prevailed, and the “accounting orientation” with its emphasis on overhead cost allocation. The proposed solution was aimed at eliminating the root problems and thereby all the unfavorable phenomena that stemmed from them. It involved two major actions: adoption of GDM and moving to a “light ABC” system which would control revenues as well as the significant and relevant expenses. The improved system would provide supporting information to GDM.

### 6.1. GDM adoption proposal

The proposal was for the company to switch to a “throughput world” mindset emphasizing global measuring of inputs and outputs, by adopting GDM. It was to define its own measurements profile and use it together with the CUT diagram to guide its actions. As noted in the previous section, managers were intuitively using contribution costing. Sometimes they would ask the CEO to approve actions that had positive contribution but did not cover the overhead allocations. Middle managers and employees, however, might not have been aware of the contribution concept, or were reluctant to ask for permission to disregard the cost allocations. Moreover, the fact that performance measurement was based on the ABC data encouraged acting in a way that maximized the local measurements, even when it was against the global interest of the company. Thus, establishing an appropriate measurements profile would ensure that everybody was aware of the

correct course of action, and there would be no need for special approvals to do the right things.

The CUT diagram would add an important dimension to the decision-making process by analyzing each action according to its effect on the company’s constraints. For instance, if a new retention program is expected to use resources which have excess capacity and it increases throughput, it should probably be approved. However, if the new program must use a constrained resource, additional analysis is required. Either the company will have to acquire more resources or it will have to forego some other activity in order to make the necessary resources available for the new program.

The decision process described in Section 5 ignored the company’s constraints. The new program was launched because it was supposed to have a positive contribution, but even in retrospect, it is unclear if the program indeed increased the company’s throughput since its effect on constrained resources utilization was not analyzed.

### 6.2. A “light ABC” system oriented to the “throughput world”

The proposed solution called for a “light ABC” system, designed to be business and throughput oriented, and built on the infrastructure of the existing ABC information system and the people who maintained it. The improved system would measure fewer data. Instead of measuring as much data as possible, it would focus only on the most important and relevant information. The collected data would be determined according to the Pareto rule, by which 20% of the occurrences are responsible for 80% of the results; thus, for example, 20% of the customers generate 80% of the revenues. The system would seek a satisfying level of accuracy [29].

It should be noted that the “light ABC” was **not** designed to allocate resources, but to measure more detailed **revenue data** which provide necessary information for decision-making. Other important aspects of the company’s activities, such as risk management data, were to be measured as well. The system would seek to manage all the relevant data required for decision-making and control. It would collect data of the measurements included in the company’s measurement profile, meaning that it would not be limited to financial data.

The improved focused system would require less effort to collect the data. It would be useful for global

decision-making and control by top and middle management, and its implementation would enable the company to fulfill the opportunities inherent in its information infrastructure.

## 7. Implementation guidelines

The company has decided to adopt GDM, but at the time this article was written it was still in its early implementation stages. The implementation of GDM involves an organizational change and an adaptation of the information system. This section discusses these issues and provides general guidelines that may assist organizations in GDM implementation. The section ends with a description of the company's situation a year and a half after the decision to adopt "Light ABC" and GDM was approved.

### 7.1. GDM changes the organization

The implementation of GDM requires much more than a change of an information system. The organization must change its decision-making processes and its performance measurements. Resistance to change is the main obstacle, and it needs to be treated at all the organizational levels. For this reason, the implementation must start with the CEO. In our case, the CEO understood the implications of global decision-making and its potential for significantly adding value to the organization. The initiative to review the ABC system came from one of the financial managers and it was he who ultimately assumed responsibility for it. He received the CEO's approval, and the team that carried out the evaluation process got the full cooperation of the top management team.

The proposed solution was first presented to the CEO, who accepted it. Then it was presented to the CFO and the financial managers who would have key roles in the GDM implementation. These managers confirmed the solution's feasibility and embraced it. At that point, the solution was formally brought before top management and approved. The next step would be to explain GDM to middle management and finally implement it throughout the organization. At the time this article was written, this was not completed yet.

But before continuing with the implementation process, the organization must define new appropriate performance measurements. This is a crucial issue which determines the success or failure of the implementation, and its potential for adding value to the or-

ganization, insofar as people behave according to the way their performance is evaluated. The measurements must therefore reflect management policy and guide employees to act in ways that will advance the global aims of the organization.

Appropriate performance measurements must have the following attributes:

- **Global and effective**, so that improving them significantly enhances the value of business firms or considerably advance the goals of nonprofit organizations.
- **Clear and simple**, so people can understand them and act appropriately.
- **Easy to measure**. The people who use a specific measurement should be the ones who collect the required data, or the data should be drawn from existing information systems. The data collection process does not add value to the organization.
- **Satisfying**. Searching for optimal "perfect and accurate" measurements may result in a heavy maintenance burden and over-precision. This in turn, may lead to abandoning the system.
- **Fit the specific organization**. Attempting to adopt a proven successful measurements system "as is" may end in disappointment. Each organization has to gradually build up a measurements system that suits its needs. The measurements described in Section 3.1 may serve as a starting point.

Recall the call center example that was discussed in Section 3.3. In some organizations call centers are measured by the number of calls handled, or "cost per call". This encourages employees to focus on making each call as short as possible, instead of trying to solve the underlying problems. For instance, the Dell Computers call centers used to measure how many service calls they could take per hour. They abandoned this measurement, and instead focused on resolving service problems the first time a customer called, even if it required longer talks [23]. The call centers detected patterns of technical difficulties and provided feedback to product development teams. This enabled Dell to introduce improvements into its new products and services to eliminate or decrease these problems, which resulted in reduced customer calls for service and increased customer satisfaction.

### 7.2. Modification of the information system

This case is not typical since the company had an infrastructure for managing and collecting cost data,

and the move to “light ABC” meant collecting less data in a timely manner. In general, the frequency should be changed to once a month, a week, a quarter, or some other time interval, depending on the intended uses of the data.

Most organizations use traditional cost systems which collect a small amount of data and have no need for a “light ABC”. They can move directly to collecting the relevant information. “Light ABC” is intended for companies that have an ABC infrastructure, and are at risk of abandoning the benefits of this information system when making the transition to GDM.

### 7.3. *The financial services company – epilogue*

As soon as top management approved the implementation of GDM, the finance team started the conversion of the costing system to “light ABC”. Cost classification was reexamined, and it turned out that only a quarter of the company’s departments had variable costs. The costs of the other departments were defined as fixed, and therefore they are not allocated to activities and products anymore. The time required for data gathering and analysis was down by 50% and the organizational effort was considerably reduced. Moreover, the company decided that an annual cost analysis satisfies its requirements since the cost changes are negligible; therefore the effort spent on data collection and analysis was further decreased. Instead, management gets a monthly report which includes relevant measurements for decision-making and control.

As mentioned above, even before embracing GDM, decisions were usually based on contribution costing, so apparently, the change was not supposed to influence the decision-making processes. But not only that decision-making is more efficient, since there are no arguments on fixed costs allocations, it is much more effective. At the bottom line, during the first full financial year after the company implemented GDM, net profit considerably increased, but there is no evidence that it can be attributed to the change.

## 8. Conclusions

The main question emanating from the many paradoxes of cost accounting is why organizations keep using useless costing systems? The answer is that many organizations regard their cost systems as the lesser of two evils. They must have a cost system for financial reporting, decision-making decentralization, price

justification, control and performance measurement. Since ABC/M requires more effort without delivering better results, most organizations hold on to their traditional cost systems.

As an effective alternative for improved decision-making, this article suggests the global decision-making (GDM) methodology, which uses the measurements profile and the CUT diagram to support decision-making processes and to ensure that actions aim at increasing the organization’s value. The article proposes a “light ABC” system for organizations that already have an ABC base, which will provide them supporting, relevant and focused data. In order to implement GDM, an organization needs to change its decision-making process and its performance measurements, a step that requires the understanding and total commitment of top management.

Whereas most papers deal with organizations that decided to try ABC/M as a substitute for traditional costing, this paper uniquely describes an organization that practiced ABC/M for seven years before deciding to move to GDM. It confirms that though a case study is naturally limited to its specific circumstances the demonstrated inability of ABC to provide relevant information for strategic decision-making is general. It also demonstrates that organizations deciding to implement GDM should consider developing systems which focus on measuring relevant data for global decision-making, which are not usually found in traditional costing systems.

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## References

- [1] J.J. Baker, *Activity-Based Costing and Activity-Based Management for Healthcare*, Aspen Publishers Inc., Gaithersburg, MD, 1998.
- [2] I. Borovits and P. Ein-Dor, Cost/utilization: a measure of system performance, *Communications of the ACM* **20**(3) (1977), 185–191.
- [3] T.L. Carter, A.M. Sedaghat and T.D. Williams, How ABC changed the post office, *Management Accounting* **79**(8) (1998), 28–35.
- [4] A. Coman and B. Ronen, Focused-ARENA-Strategy – FAST: transforming strategic core-competences and root-problems into action, Working paper, Faculty of Management, Tel Aviv University, 2002.

- [5] R. Cooper, Explicating the logic of ABC, *Management Accounting, CIMA, UK* (November) (1990), 58–60.
- [6] R. Cooper and R.S. Kaplan, Measure costs right: make the right decisions, *Harvard Business Review* **66**(5) (1988), 96–103.
- [7] R. Cooper and R.S. Kaplan, *The Design of Cost Management Systems*, Prentice Hall, Englewood Cliffs, NJ, 1991.
- [8] T. Copeland, T. Koller and J. Murrin, *Valuation – Measuring and Managing the Value of Companies*, McKinsey & Company, Inc., Wiley, New York, 1996.
- [9] R. Cross and M. Majikes, Activity-based costing in commercial lending: the case of Signet Bank, *Commercial Lending Review (Euromoney)* **12**(4) (1997), 24–30.
- [10] W.E. Deming, *Out of the Crisis*, MIT CIA, Cambridge, MA, 1986.
- [11] Y. Eden and B. Ronen, *It Costs Me More*, Hod-Ami, Herzelia, Israel, 2002 (in Hebrew).
- [12] Y. Eden and B. Ronen, Activity Based Costing (ABC) and Activity Based Management (ABM) – are they the same thing in a different guise? *Financial Management Accounting Committee (FMAC) Articles of Merit*, Issued by The International Federation of Accountants, 2002, pp. 47–58.
- [13] Y. Eden, B. Ronen and Y. Spector, Developing decision-support tools for costing and pricing, Faculty of Management, Tel Aviv University, *The Joseph Kasierer Institute for Research in Accounting* **53**(3) (1993) (in Hebrew).
- [14] A. Garg, D. Ghosh, J. Hudick and C. Nowacki, Roles and practices in management accounting today: results from the 2003 IMA – E&Y Survey, *Strategic Finance* (July) (2003), 30–35.
- [15] E.M. Goldratt, *It's Not Luck*, North River Press, Great Barrington, MA, 1994.
- [16] E.M. Goldratt and J.F. Cox, *The Goal*, 2nd revised edn, North River Press, Croton-on-Hudson, NY, 1986.
- [17] T. Hobdy, J. Thomson and P. Sharman, Activity-based management at AT&T, *Management Accounting* **75**(10) (1994), 35–39.
- [18] C.T. Horngren, G. Foster and S.M. Datar, *Cost Accounting, A Managerial Emphasis*, 11th edn, Prentice Hall, Englewood Cliffs, NJ, 2003.
- [19] J. Innes, F. Mitchell and D. Sinclair, Activity-based costing in the UK's largest companies: a comparison of 1994 and 1999 survey results, *Management Accounting Research* **11**(3) (2000), 349–362.
- [20] R.S. Kaplan, Yesterday's accounting undermines production, *Harvard Business Review* **62**(4) (1984), 95–101.
- [21] R.S. Kaplan, One cost system isn't enough, *Harvard Business Review* **66**(1) (1988), 61–66.
- [22] R.S. Kaplan, D. Weiss and E. Desheh, Activity-based transfer pricing, *Roeh Hahesbon, the Journal of Certified Public Accountants in Israel* **46**(4) (1997), 449–456 (in Hebrew).
- [23] S. Kirshner, The customer experience, *Net Company*, Issue 001 (1999).
- [24] A. Norkiewicz, Nine steps to implementing ABC, *Management Accounting*, **75**(10) (1994), 28–33.
- [25] J. Piper and P. Walley, ABC relevance not found, *Management Accounting, CIMA, UK* (March) (1991), 42–44.
- [26] B. Ronen and S. Pass, *Focused Management*, Hod-Ami, Herzelia, Israel, 2004 (in Hebrew).
- [27] B. Ronen and Y. Spector, Managing system constraints: a cost/utilization approach, *International Journal of Production Research* **30**(9) (1992), 2045–2061.
- [28] R.J. Schonberger, *World Class Manufacturing: The Lessons of Simplicity Applied*, Free Press, New York, 1986.
- [29] H.A. Simon, *Models of Man*, Wiley, New York, NY, 1957.

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