

LAPORAN PENELITIAN

Studi Literatur Mengenai Penggunaan *Activity Based Costing Systems* di Beberapa Negara

*Adoption of Activity Based Costing Systems in Selected Countries
A review of the literature*

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Abstrak

Sejak awal tahun delapan puluhan, banyak pendapat, baik dari kalangan akademisi maupun dari kalangan praktisi, yang menyatakan bahwa *traditional or conventional cost accounting methods* sudah ketinggalan jaman atau *obsolete*. Kritik utama terhadap metode tradisional tersebut adalah pada alokasi biaya *overhead* yang hanya berdasarkan pada *single cost driver* dapat menyebabkan distorsi biaya, terdapat *cost object* yang *undercosting* dan disisi lain ada *cost object* lain yang *overcosting*. *Activity Based Costing System (ABC System)* dianggap dapat mengatasi problem tersebut. *ABC System* membebankan biaya kepada *cost object* misalnya produk atau pelanggan berdasarkan sumber daya yang dikonsumsi.

Mula-mula dengan *ABC System* ini biaya dibebankan pada aktivitas-aktivitas dan setelah itu membebankan biaya suatu aktivitas pada *cost object* yang memperoleh manfaat dari pelaksanaan suatu aktivitas. Aktivitas-aktivitas ditelusuri kepada produk atau pelanggan tertentu yang menyebabkan terjadinya aktivitas. Biaya produk mencerminkan biaya semua aktivitas yang dikonsumsi, dengan demikian biaya dapat ditentukan lebih akurat dan manajemen dapat mengendalikan aktivitas yang muncul dan juga mengendalikan biayanya.

Istilah *activity based costing* sendiri mula-mula dikemukakan oleh Harvard Business School pada tahun 1987, selanjutnya artikel pertama dalam *Journal of Cost Management*, menggunakan istilah ini (Clarke and Mullins, 2000). *ABC System* ini oleh Johnson, 1990, bahkan disebut sebagai salah satu inovasi terpenting dalam bidang akuntansi manajemen pada abad 21 (Pierce and Brown, 2004).

Namun dalam perkembangannya, walau secara teoritis banyak keunggulan dari *ABC System*, beberapa survey menunjukkan bahwa memang ada perusahaan-perusahaan yang sukses menggunakan *ABC System* namun perkembangan penggunaan *ABC system* pada berbagai perusahaan tidak seperti yang diharapkan (Cohen, Venieris and Kaimenaki, 2005). Studi literatur ini penggunaan *ABC System* di beberapa negara, termasuk alasan mengapa menolak untuk mengadopsi *ABC System*, manfaat yang didapat oleh pengadopsi *ABC System*, dan masalah-masalah yang dihadapi saat implementasi *ABC System*.

Key-words : *traditional/conventional cost accounting* , *activity based costing (ABC)*, adopsi pada beberapa negara..

1. Introduction

Over the last three decades, competition has forced corporations to have incessant development in all aspects of business, including performance measurement and cost management. In the past, increasing capital intensity, because of automation, had changed the relationship between indirect cost and direct labor cost in a number of industries (Chongruksut, 2002, [7]).

The proportion of direct labor cost (variable costs) had contracted considerably, on the other hand; fixed costs had grown. Therefore, using direct labor, a small proportion of total manufacturing costs, to allocate indirect costs in the traditional cost systems was considered to be incorrect (Cooper and Kaplan 1988 [11]; Dugdale 1990,[15]). Furthermore, Cooper (1988, [12]) explored the ability of volume - based and activity-based cost systems to assign product costs precisely when the numbers of products manufactured are different. He found that the volume-based cost system could not generate accurate unit costs when products differ by volume since it overlooks the differences in input consumption of overhead resources.

The activity-based costing technique has been substantially developed in the last decade (Cooper 1990, [13]) because it is claimed to avoid the deficiencies of the traditional absorption costing methods, which commonly use direct labor to assign indirect costs (Kaplan 1988 [19]; Dugdale 1990 [15]). It is also claimed that it can provide more precise information about the cost of the product than the traditional cost systems can, in particular, when manufacturing processes are intricate or products are produced in varying volume because the ABC system allocates indirect costs, such as

utilities or maintenance, to the products that consume the resources (Krumwiede and Roth 1997 [21]).

The ABC system has been extended to cover non-production costs, which are not related to production or which emerge from operation, such as distributing and selling costs. Then, cost driver measurements of ABC (used as non financial measures), such as on-time deliveries or inventory turnover, help operational control, cost control and decision-making. Finally, it provides basic information for the budgeting process.

An activity-based costing (ABC) system was paid extensive attention because it does not allocate only manufacturing costs to products like the traditional cost systems, but also assigns other costs, such as administrative costs, marketing costs and so on, to cost objects, which includes activities, products and customers. ABC is claimed by a large number of authors to be able to provide more accurate product costs than the traditional cost systems do. Many authors also claim that accurate product costs possess useful information for performance measurement, cost control and strategic decisions. In addition, the results of several studies show that ABC can help companies with respect to cost reduction and improved profitability.

ABC is a management accounting process that allocates resource costs to products or customers based on activities, which are the factors causing work and incurring cost, used by products or customers (Atkinson et al. 1995 [4]; Krumwiede and Roth 1997 [21]). In other words, ABC assigns costs to products according to the activities and resources consumed in producing, marketing, selling, delivering and servicing the product. The heart of ABC is the activity concept. ABC assumes that activities originate cost and that outputs build the demand for activities. An ABC system is designed to

eliminate boundaries among departments and to create more exact cost information or to disclose 'the hidden profits and the hidden losses' (Argyris and Kaplan 1994 [3]).

2. Problem Formulation

However, despite this evidence of the potential benefits of ABC adoption, firms have been slow to adopt it, with reported adoption rates of between 10 per cent to 20 per cent across a range of countries.(Chongruksut, 2002 [7]). The contrast between the demonstrated and widely known benefits of ABC and its relatively low adoption rate identify an important research paradox: why so few firms have adopted ABC?

Through a literature review, this study attempts to investigate the adoption of activity based costing in selected countries. The primary objective of this study is to identify and provide a comparative analysis of activity based costing adoption in these countries. The second goal of the research is to assess, for the companies implementing ABC (ABC adopters), the benefits that they have experienced and to identify the problems they have faced regarding the process of implementing their ABC systems. Furthermore, I try to understand why some companies, despite the theoretical benefits of ABC, do not use it (non-ABC adopters).

3. Adoption of Activity Based Costing in 9 Countries

ABC is a relatively contemporary cost accounting system crafted to cure some of the deficiencies of traditional cost accounting systems. Advocates of ABC argue that it provides several benefits such as, tracing overhead cost to products accurately, supporting process improvement, eliminating non-value added activities, and reducing overall cost and raising operating profits. The benefit derives from its enhancement of conventional overhead costing practice. This has traditionally involved the attaching of

overhead cost to each unit of output in proportion to a time-based work measure such as labor or machine hours. The underlying assumption of this approach is that overhead resources are consumed on a time basis, that is, the longer an item is worked on the greater should be its share of overhead. As labor and machine hours will vary closely with output levels, this approach can be viewed as being primarily volume-based. Thus the greater the output of a product or service line the more overhead it attracts. While this approach has the advantage of simplicity it will result in systematic miscostings where overheads are not volume driven. Products that consume a high (low) portion of overhead would bear a high (low) amount of overhead cost. The arbitrary method, which has been called a “Peanut Butter Approach” is unfortunately not reliable and, consequently leads erroneously to incorrect costing and pricing decisions. The problems stemming from using traditional cost systems become even more exacerbated, especially with the growth of overhead level and complexity of production.

In many areas of contemporary business it has been realized that activity levels other than final output volume are significant determinants of overhead; in these circumstances conventional overhead costing no longer applies. Overheads are increasingly influenced by the diversity and complexity of output and by the need to ensure quality and high service levels to customers in an increasingly competitive marketplace. The more accurate tracing of resource consumption to final outputs will indicate more clearly what potential impact a decision of the latter type will have on costs. In addition, the activity-based costs will show more exactly the cost recovery necessary for setting selling prices to generate required levels of profitability.

Despite its proclaimed benefits and the broad interest expressed by academics and professionals, the international rate of adopting has been disappointing.

Presented below, the adoption of Activity Based Costing System in 9 countries, 4 countries are in Europe, United Kingdom, Ireland, France and Greece, 2 countries are in America, USA and Canada, 1 in Australia, and 2 countries in Asia, Saudi Arabia and Thailand.

3.1 Adoption of Activity Based Costing in United Kingdom

Innes and Mitchell ,in 1997 [17], conducted a survey by postal questionnaire to the UK's 60 financial institutions, with 52% usable responses or 31 respondent. The results indicate that the UK's largest financial institutions have been relatively late (most have adopted ABC within the last two to three years) but enthusiastic converts to ABC. Their adoption rate is markedly higher than that found in other industrial sectors (Innes and Mitchell, 1995,[16]) and, while this may in part be attributed to the sample bias in favor of large organizations (which have the resource to accommodate a substantial and costly development), it is also indicative of a strongly perceived superiority for ABC over earlier practice in many of the core areas of management accounting.

Seventeen respondents (54%) were applying ABC, and on average had been using it for 1.8 years. Moreover, it was apparent that multiple types of application were favored by each user. The table below outlines the range of specific applications which respondents has adopted.

APPLICATION	n	% of Users	Average Importance Rating*	Average Success Rating*
Cost reduction	16	94	4.4	4.1
Output pricing	14	82	4.3	4.1
Cost modeling	12	71	4.1	3.9

Budgeting	10	59	4.1	3.9
New service design	10	59	4.0	3.4
Output decisions	10	59	4.1	3.9
Customer profitability analysis	9	53	4.8	4.1
Performance measurement & improvement	7	41	4.3	3.5
Other applications	2	12	-	-

Cost reduction. This was the most popular single motive for the adoption of ABC, and was evident in all but one of those firms using it. The other respondent had plans to introduce ABC for this purpose in future. Its importance and success ratings were also extremely positive and the strength of its impact may be judged from the fact that over half of those using ABC for this purpose (nine respondents) claimed to have already made significant cost reductions from its use.

Output pricing. Over 80 per cent of ABC users (n = 14) utilized output costs in the pricing decision and two of the remaining three organizations had plans to do so in future. Their responses indicated that a high level of importance and success was attributed to this application. The significance of the new ABC information is reflected in the fact that many respondents using ABC in pricing claimed that prices were both raised (50 per cent, n = 7) and reduced (57 per cent, n = 8) in response to it. Moreover 36 per cent (n = 5) considered that it had a significant impact on their firm's sales performance. However, several respondents had found that there remained some suspicion apparent among managers that ABC did still contain significant subjective allocations which limited the accuracy of its cost information. In addition some considered that the generation of costs by the ABC system occurred less frequently than was desirable in a highly dynamic business environment.

Cost modeling. Just over two thirds of ABC users (n = 12) had developed the technique to support cost modeling and held favorable views on its importance and success. Four of the remaining organizations had plans to use it in this way in future.

Budgeting. Budgeting was another popular application, having been adopted by 59 per cent (n = 10) of the ABC users. On average it was viewed positively both in terms of success and importance. Six other users had plans for the future development of activity-based budgeting.

New service design. A similar number of ABC users (n = 10) had adopted it to influence the new service design process and considered it an important and successful application in this respect.

Output decisions. This application was also found in 59 per cent (n = 10) of the ABC users and it was also considered on average to be both important and successful. Four of the remaining respondents had plans to use ABC for this purpose in future.

Customer profitability analysis. Just over half of the ABC users (n = 9) were involved in customer profitability and found it both an important and a successful application. All of the other users had plans to introduce customer profitability analysis in the future.

Activity performance measurement and improvement. Under half of the ABC users (n = 7) had utilized ABC in this function, although a further seven planned to extend their applications in this way.

Other Issues

ABC users were asked about a number of other issues relating to the nature and success of their new systems. The commitment of top management to the development of ABC had typically been very strong (n = 8) or fairly strong (n = 6).

The other side there was 14 respondents was non user of ABC or 46% of usable respondents. The 14 non-users of ABC had a variety of views on the appropriateness of ABC for their organization. Only one had considered ABC and then rejected it. The justification provided related to the immediate pressure for substantial downsizing. It was felt by the respondent that the imposition of blanket cost reduction targets for this was more appropriate and effective than the use of ABC. Five others were currently in the process of assessing ABC. All were considering it as a means of improving cost control, particularly as a means for enhancing budgetary procedures. One viewed it as also being relevant to pricing and another valued the analysis of profitability by product, customer and sales channel which it promised. Finally, eight respondents had not considered ABC and in only one case was there a plan to do so.

3.2 Adoption of Activity Based Costing in USA

In 2003, Kiani and Sangeladji made a research regarding the implementation and the extent of use of ABC/ABM techniques by 85 out of the Fortune 500 largest industrial corporations in the USA. The 85 companies that participated in the study had primary operation in areas of service, electrical/electronics, food, pharmaceutical, oil, rubber, glass, aerospace, paper, transportation equipment, chemical, machinery, steel, non-ferrous/metal and other. About 29 percent of these companies used large-batch sizes manufacturing operations, 27 percent used customized services and the rest employed other methods of operations. Seventy five percent of the companies had over 5000 employees; 92 percent reported annual sales volume over \$1-billion; 78 percent reported an average period of six months to three years for modification and enhancement of their products; and 74 percent indicated an average of five years or less for the major redesign

of their products. In regard to ABC/ABM topics, 52 percent responded that they had developed and implemented ABC/ABM techniques in their operations. The factors that influenced the remaining 48 percent for not implementing ABC/ABM techniques, ranked in terms of importance, from: did not get top management sponsorship/support, cross-functional cooperation was difficult to get, the accounting/information system did not support ABC/ABM, did not have resources to implement, lack of familiarity with ABC/ABM, unwillingness of people to change, perception that ABC/ABM was a passing fad, and ABC/ABM was not relevant for our kind of business.

Regarding the application of ABC/ABM, the benefits achieved by these companies ranked in terms of importance: (a) improvement in the overall profitability, (b) reduction in the manufacturing costs, (c) development of more profitable products, (d) reduction in the number of design changes, (e) reduction in the time required for new production information. However, the degree of achievement of the above benefits, in a scale of 5 to 1 (5 representing extensively achieved and 1 corresponding to not achieved at all) was between 2.34 to 1.65 descending.

On the other hand, the difficulties and obstacles faced by the 44 companies that adopted ABC/ABM, were ranked in terms of their importance: (a) did not get top management sponsorship/support, (b) unwillingness of people to change, (c) lack of adequate competent personnel, (d) complexity in process design, (e) takes too long to implement these systems, (f) complexity in plant layout, (g) complexity in product design, (h) lack of adequate cooperation from our suppliers, and (i) inadequate returns from expenditures on these models. In view of benefits and obstacles, non-the less, 57 percent

of 44 respondents recommended the use of ABC/ABM techniques to other companies in the same line of business.

Since 44 companies out of 85 (or 52 percent of total respondents) participated in the study indicated that they had used ABC and/or ABM models in their companies, it thus behooves us to recommend that colleges and universities continue to include ABC/ABM techniques in their curricula. However, it should be noted that the level of achievement of the expected benefits, such as “the improvement in overall profitability,” “reduction in cost,” “development of more profitable products,” “reduction in number of design,” “reduction in the time for new product,” and “reduction in cost of purchasing materials” was not high. The overall average for achieving the previous attributes was 1.97 on the scale of 1 to 5. In other words, on a scale that “not at all” level of achievement corresponds with “1” and the “extensively” achieved represents “5”, the average of 1.97 falls below the “somewhat” level of achievement.

3.3 Adoption of Activity Based Costing in Ireland

Clarke and Mullins in 2000, conducted a survey by postal questionnaire to 395 non-manufacturing companies. Respondents were asked about the benefits of using ABC. 70% of the respondents (that adopted ABC) agree that ABC provides more accurate profitability analysis. In addition, 60% of the ABC-adopters agree that ABC provides an improved insight into cost causation and facilitates cost control and management.

Secondly, there is a marked difference in the responses of adopters and non-adopters. Generally speaking, the reported actual advantages are greater than the perceived advantages reported by non-adopters. The following are some examples.

- 70% of ABC-adopters believe that ABC results in more accurate profitability analysis, while only 39% of non-adopters believe this.
- 60% of ABC-adopters believe that ABC improves cost control and management, while only 45% of non-adopters believe this
- 60% of ABC-adopters believe that ABC encourages a greater understanding of opportunities available to reduce costs, while only 43% of the non-adopters agree with this.
- 60% of ABC-adopters believe that ABC results in improved decision making, while only 45% of non-adopters believe this.

The marked differences in the responses between the adopters and non-adopters suggest a (relative) lack of understanding of ABC on the part of the non-adopters. In other words, management accountants in those companies that have not adopted ABC do not perceive advantages associated this technique. In turn, this may explain their reluctance to adopt ABC. Unfortunately, this study was not able to investigate whether these perceptions were, in fact, correct. Alternatively, it could be that this difference is to be expected and may be consistent with cognitive dissonance. The concept of cognitive dissonance has already been suggested as a basis for explaining accounting behavior (Report of the Committee on the Behavioral Content of the Accounting Curriculum, 1973). It is based on the idea that participants in an activity will possess more positive views on it than non-participants.

Generally speaking, the overall percentage responses for the perceived advantages, subject to some exceptions, are greater for those firms that are considering the adoption of ABC, relative to other firms. For example 86% of firms currently considering ABC

consider that ABC will result in more accurate cost information for costing and pricing. This contrasts with only 40% of respondents that would not consider ABC. In addition, companies that had considered but rejected ABC reported relatively lower figures for these perceived advantages. This suggests that the rejection decision was made on rational grounds – i.e. comparing cost with benefits.

ABC is not without its implementation problems and difficulties. These difficulties can be divided between those of a conceptual/technical nature of ABC information and those relating to the specific organizational context.

- Conceptual problems associated with implementing ABC:
 - Difficulties in collecting data on cost drivers
 - Difficulties in tracing cost drivers to products
 - Difficulties in identification/selection of cost pools and drivers
 - Difficulties in defining distinct activities

- Institutional problems associated with implementing ABC:
 - Education of managers/accountants
 - Lack of staff time
 - Lack of clear direction on how to implement an ABC system
 - Lack of adequate resources
 - Reluctance to change traditional accounting methods
 - Inadequate software

Despite the limitations associated with the use of a postal survey questionnaire in this study, these responses provide organizational and behavioral insights that could usefully be explored in subsequent studies. To Overcome the problems of

implementation: First, it is important to know what the (ABC) project is expected to accomplish. To ensure that this does not happen, the ABC system should be managed with an overview of what a firm wants to achieve by having the data in the first place. Also a good implementation plan is essential so as to ensure the implementation process is managed effectively. Secondly, a commitment to activity based costing by all employees, at all levels in the organization, is a must for its implementation to be a success. It is essential that employees understand the system and their contribution to it. All employees must be educated in the principles and mechanics of ABC. Thirdly, complexity must be avoided, as otherwise the system may be too difficult to install or maintain.

This study indicated similarly low adoption rates for non-manufacturing firms. Only 19% of the respondents reported that they had adopted ABC but a significant proportion of firms (35%) had not even considered adopting it. The findings of this research suggest that the reluctance to adopt ABC in non-manufacturing firms can be partly attributed to a lack of belief in/knowledge about the advantages of ABC. For example, Table 3 reveals that, in general terms, the actual advantages to those that have adopted ABC are greater than the advantages perceived by those companies that have not adopted ABC. For companies that had adopted ABC, there were implementation problems to be overcome. Both of a “conceptual” and “institutional” nature. Overall there was a high level of satisfaction with ABC among those that had adopted it. Finally, 90% of the ABC-adopting respondents said they would advise other similar companies to follow suit.

In the other research, Pierce and Brown (2004) found that there was particularly evident among manufacturing companies, where an adoption rate of almost 35 per cent was recorded, which contrasts with an adoption rate of almost 12 per cent reported by Clarke et al. (1999) for a similar sample of Irish manufacturing companies. Fewer respondents were still considering adoption of ABC/M than reported in Clarke et al. (1999) (9 per cent compared to 21 per cent). Compared to the Clarke et al. (1999) findings, a higher proportion of respondents have considered adoption of ABC/M (48 per cent compared to 45 per cent), and of those who have considered it, a higher proportion have reached a final decision. Consistent with previous findings (Clarke et al., 1999; Innes et al., 2000), adoption rates were significantly higher among large organisations.

Companies not currently using ABC/M fell into three different categories, i.e., those that are still considering it (n=11), those that have considered and rejected it (n=13) and those that have never considered it (n=64). For all three categories, there was a high degree of consistency in terms of factors militating against adoption/consideration of ABC/M, the most prominent of which related to cost/benefit considerations. Respondents from the three groups were clearly concerned about the level of resources and cost required to implement what they saw as a more complex system. At the same time, a high level of uncertainty was expressed regarding the potential benefits that would result from implementation of ABC/M. In assessing likely benefits, some respondents revealed an extremely narrow view of ABC/M (e.g., “it would not give us any more control”), while others freely admitted lack of any detailed knowledge of the technique. A further theme related to particular characteristics of the responding company (e.g., “nature of business”) and their status within the group (“dictated by corporate requirements”).

Whereas the rejectors of ABC/M revealed a narrow interpretation of potential uses and benefits, those currently considering the technique showed awareness of a much wider range of applications. In particular, those considering implementation of ABC/M consistently focused on the need for more accurate cost drivers to identify value added and provide accurate profitability analysis as the main reason for considering its introduction.

The findings do not support the conclusions of Clarke et al. (1999) that ABC/M adoption rates in Ireland are low in comparison to those reported in other countries. The overall adoption rate of 27.9 per cent is high in comparison to findings reported elsewhere, and the adoption rate of 34.9 per cent in manufacturing companies is significantly higher than the 11.8 per cent adoption rate reported by Clarke et al. for a sample of manufacturing companies in Ireland. However, the findings provide some support for the contention of Clarke et al. that there may be a lack of knowledge in Ireland regarding the importance and operation of ABC/M systems. For example, reasons given for never having considered ABC/M reflected a mistaken perception that ABC/M is not suitable for organisations involved in service industries, including financial services, or where a competitive market dictates the pricing of products or services. Respondents from ABC/M adopters and from companies considering adoption, on the other hand, showed a much greater awareness of the potential benefits of ABC/M.

Consistent with prior findings in Ireland and elsewhere, more than half of the responding companies have not given any consideration to possible implementation of ABC/M to date. Given that ABC/M has been prominent in the literature since in 1980s, this is unlikely to be due to lack of awareness and is more likely to be indicative of an

acceptable level of satisfaction with existing systems in those companies. Combined with the low numbers now considering a change to ABC/M (over 90 per cent of respondents have either accepted, rejected or are not considering ABC/M), this suggests that there is unlikely to be significant further adoption of ABC/M in the foreseeable future. In this sense, the evidence suggests that adoption of ABC/M may be approaching a relatively settled state in the Irish corporate sector.

Given the relatively high adoption rates revealed by the findings, comparatively low numbers still considering adoption, and the consistently high proportion of companies that have not considered ABC/M, it seems unlikely that there will be significant further adoption of ABC/M systems in the foreseeable future.

3.4 Adoption of Activity Based Costing in Canada

In 1993, SMAC-sponsored study was undertaken as a Masters of Accounting project at the University of Waterloo. The study consisted of a survey of over 700 large Canadian organizations. A response rate of approximately 50% was achieved.

The results indicate that ABC is in the early stages of development in Canada. Based on a similar study undertaken in the U.S. two years ago (see chart below), we can assume that the development in this country currently lags that of the United States. ABC shows signs of being highly accepted by Canadian organizations that have assessed it and shows signs of having met organizational expectations of those that have adopted it. The results indicate different stages of development by organizational size and industry sectors; for example, there has been more widespread adoption of ABC by manufacturing firms than by retail firms.

Country	Canada	United States
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# surveyed	702	2500
# responses	352	566
Response rate	50%	22%
Organizations that had not considered ABC	67%	70%
Organizations currently assessing ABC	15%	19%
Organizations that had assessed and rejected ABC	4%	---
Organizations that had implemented ABC	14%	11%
Total	100%	100%

3.5 Adoption of Activity Based Costing in Australia

According to John Corrigan (1996), in 1995, the Management Accounting CEO, in conjunction with the University of Technology in Sydney, initiated the first major survey on activity-based costing among Australian manufacturing firms. The survey, which was carried out by Professor Peter Booth and Francesco Giacobbe from the UTS School of Accounting, involved 213 firms, covering all aspects of Australian manufacturing.

The results were surprising. About 45 per cent of firms surveyed had never considered the adoption of activity-based costing while 29 per cent of firms were still in the process of considering adopting it. Another four per cent had considered its adoption but had rejected it. Only 12 per cent of firms surveyed actually used it.

The high percentage of firms that have ignored activity-based costing is not due to ignorance of it. In fact, 88 per cent of those surveyed acknowledge awareness of activity-based costing. The decision to not use ABC was deliberate. But these results were contradicted by the finding that 33 per cent of this group believe that they will consider the introduction of activity-based costing at some time in future.

Limited resources and the technical nature of the design of the activity-based costing were the major issues raised concerning its implementation by those firms surveyed.

Those who rejected its introduction claimed that the uncertainty of benefits and the high costs relative to the perceived benefits were the main reasons for rejecting activity-based costing. Some noted that current costing systems were working well.

3.6 Adoption of Activity Based Costing in France

Activity-based costing (ABC) not been adopted more extensively in France. France appears to be in a special position relative to the adoption of ABC. Few companies in France are setting up an analysis of costs by activity (activity-based costing or activity-based cost management). Instead, traditional methods including full cost seem to be adequate for French-companies. Bescos and Mendoza (1995) suggested reasons for France's non-adoption of ABC include: resistance to change, unfavorable economic conditions, cultural factors, and the cost of implementation. They determined if the limited implementation of activity-based costing is due to the concepts themselves or factors unique to France and possibly to other countries of Europe.

Bescos and Mendoza (1995) conclude that there appear to be four interrelated factors explaining the difficulty in implementing ABC in France.

The language barrier. French companies were rather late in looking at the possibility of implementing ABC. This situation exists partly because ABC was developed in English-speaking countries and translations or adaptations of publications

on this method took some time. The language barrier is therefore an important element in explaining this delay.

The current economic context. The cost of implementing a new method and the time needed often are serious impediments. These impediments especially impact during a recession when expenditures must be kept down and priorities tend toward short-term solutions. In fact, the current economic environment in France and Europe is now more difficult than in the United States. There is not enough time to implement new methods such as activity-based costing.

The existence of a preestablished French full-cost method. The full-cost method is used in many companies. This traditional method is more sophisticated than most full-cost approaches used in the United States and is used in other European countries such as Germany, The Netherlands, and Spain.

Activity-based costing theoretically may be more relevant, but the traditional French full-costing method is very similar. Therefore, many French managers perceive little or no incremental benefit to introducing ABC in their companies.

Management style of French companies and related cultural factors. Activity-based costing has been developed in the United States. It is based on a contractual system that clearly sets out the performances expected of each manager and each department. This system is consistent with the traditional managing by numbers, the operational style that underlies most American business organizations.

As ABC identifies activities and cost drivers, it also defines activities in which managers have complete freedom to maneuver and the progress for which managers are individually or jointly responsible. This same system of contracts also is applied to

interdepartmental relations. It is possible that French cultural specificities may in part explain why the implementation of the ABC method is so slow in France.

3.7 Adoption of Activity Based Costing in Saudi Arabia

Khalid, in 2003, made a research in 100 biggest Saudi Firm, with a fax survey, with 39% responses or 39 companies. With respect to the ABC adoption, the respondents were classified into five groups. Only thirteen of the responding firms (33.3 percent) presently apply ABC, whilst fourteen firms (35.9 percent) have explicitly identified themselves as have never considered ABC adoption. It is worth noting that no firm subsequently abandoned ABC after using it. All else being constant, the adoption rate is considerably high in comparison with the observations of other prior studies. To illustrate, Clarke and Mullins (2001) reported that only 19 percent of non-manufacturing Irish firms (10 firms) apply ABC. Surprisingly, Innes et al. (2000) concluded that the proportion of ABC users and those presently evaluating its implementation had fallen to 17.5 percent and 20.3 percent in 1999 from 21 percent and 29.5 percent in 199, respectively. It is also interesting to note that the study of Al-Mulhem (2002), which surveyed manufacturing companies operating on the Eastern coast of Saudi Arabia only found that 14.5 percent (9 firms out of 62) apply ABC.

In order to shed some light on the most critical incentives that may lead firms to take a discretionary decision, such as a change to ABC, firms that currently use ABC were asked to rate the importance of predetermined incentives. In a descending order, table 7 reveals the incentives and the degree of their importance, as viewed by the ABC adopting firms. In terms of importance, the collectively average score is 3.40, which

closely corresponds to the importance level of “Moderate=3.” As can be seen, the measuring cost accurately incentive ranks first with an average score of 4.61(which is closer to 5 in the scale of 1 to 5). By the same token, the measuring customers’ profitability incentive ranks second with an average score 4.07. It is very interesting to note that the measuring cot accurately incentive in this study and in the study of Al-Mulhem (2002) was considered the most important in terms of ranking and magnitude. The result also supports the findings of the survey conducted by the Institute of Management Accountants (1996), which indicated that many cost managers were dissatisfied with product costing. In some situations, managers are hesitant to use the information because they disagree with the methods by which overhead cost was applied. Contrary to the findings of Innes and Mitchell (1997) and Al-Mulhem (2002), the firms adopting ABC assign more weight to measuring customers’ profitability incentive.

The survey predetermined six potential pitfalls that may have been encountered firms adopting ABC in applying the system. Firms were requested to rank those potential obstacles in accordance to the degree of difficulty. In general, those obstacles can be grouped into technical and organizational variables. Indeed, this study neither intends to cover all the prospective technical and organizational problems, nor investigates their effect on the success of ABC to implementation. Technical or conceptual issues, such as tracing overhead elements to products, relate to the architectural and software design of ABC. Organizational issues, such as top management support, adequate training, and linkage to performance evaluation, relate to the behavioral aspects of ABC in a study exploring the degree and nature of the adoption of ABC by the Fortune 500 in the U.S., Kiani and Sangeladji (2003) cited failure to get top management support, change people’s

attitude, and have adequate competent personnel as important barriers to successfully implement ABC. By contrast, Clarke and Mullins (2001) and Al-Mulhem (2002) cautioned that the difficulty to point out cost drivers and, in turn, trace them to products is the most crucial problem. As can be seen, the first mentioned study places maximum emphases on the importance of organizational issues while the second study contends that technical issues are more severe.

Firms adopting ABC were requested to show whether certain claimed advantages of applying ABC have or have not been actually accrued to them following implementation. It is interesting to note that the averages range from 3.72 to 4.72. In other words, those average scores, in fact, reflect a firm's success in perceiving the benefits of ABC. More particularly, ABC adopting firms agree they have already become more able to measure cost accurately (mean = 4.64) and support process improvement (mean = 4.45).

Prior studies found similar results. To illustrate, Clarke and Mullins' (2001) study documented that 60 percent (n = 6) of ABC adopted firms in Ireland believe that ABC had provided more insight into operations, which ultimately reduced operating costs. Also, in a study assessing the extent of applying ABC by the largest financial institutions, Innes and Mitchell (1997) found compelling evidence that implementation of ABC had rewarded firms with opportunities to squeeze costs. Likewise, Kiani and Sangeladji (2003) reported that the surveyed Fortune 500 firms employed ABC largely to improve overall profitability and reduce operating cost.

An ABC system is not always suitable for every firm. If the existing costing system offers the needed information on a timely and reasonable basis, then there is no

necessary motive for adopting ABC is not as necessary. Likewise, if a firm produces one type of goods or services, allocation of overhead is less like to be a major concern. Still, there could be some other factors precluding implementation of ABC. Examples include the lack of sufficient resources to support the new innovation, lack of top management support, complexity of designing and implementing it, and so forth.

Non-ABC users comprise of two subgroups: firms that never considered ABC (n = 14) and firms that rejected ABC after evaluation (n = 9). To explore the of non-ABC users, they were requested to indicate their agreement with predetermined factors on a Likert-type scale of 1 to 5. As table 10 reveals, the most common reasons given or not considering or even rejecting after evaluation were satisfaction with the existing cost system (mean = 3.75) and its unconformity to the firm' operations (mean = 3.0). In addition, the creditability and advantages of ABC was suspect by non-ABC users (mean= 2.68), because of some failed attempts experienced by other firms. Lastly a rather important justification was the lack of adequate expertise to develop the system is rather important justification (mean = 2.60)

The perceived results are of similar to those observed by Innes et al. (2000). The study found that the most critical reasons why some firms did not consider ABC to be (1) the unsuitability of ABC to business and (2) satisfaction with the cost system being currently used. On the other hand, firms rejecting ABC after evaluation justified their rejection on the basis that ABC is a very complicated system to build and operate while others questioned the technical creditability of ABC.

Reasons	Mean	Median
ABC doesn't conform to the operations	3.75	4
The existing cost system is satisfactory	3.00	3

Lack of adequate expertise to develop ABC	2.68	3
Prior failed cases experienced by other firms	2.60	3
ABC needs much time to develop	2.60	3
Unfamiliarity with ABC	2.503	2
Employees are hesitant to change their behavior	2.37	2
Lack of top management support	2.13	1

The study reveals that thirteen firms (33.3 percent) are using ABC, three firms (7.7 percent) are still considering it, nine firms (23.0 percent) rejected it after evaluation, and fourteen firms (35.9 percent) have never considered it. To investigate the potential effect of certain structure and technological-related variables on the tendency of firms to adopt ABC, it was found that size as well as the number of products is positively associated with the adoption of ABC. However, the study did not find evidence on the relationship between overhead level and ABC adoption. The attained results confirm previous research studies mentioned earlier.

3.8 Adoption of Activity Based Costing in Thailand

Wiriya Chongruksut in 2002 [7], conducted a survey in Thailand. A survey questionnaire was sent to 292 firms listed on the Stock Exchange of Thailand (SET) operating in the Bangkok region. 101 questionnaires were returned, generating a 34.59% response rate. The results indicate that almost 39% of 101 individual participants claimed that they had never known ABC. They did not know what ABC was. The remaining 62 individual respondents (61.38%) showed that they had familiarity with ABC. In addition, the individual respondents with ABC knowledge (62 respondents) were asked to indicate experience of learning ABC. Most of them showed that they learnt ABC from university (37.1%) and seminars or conferences (37.1%). The rest of them learnt ABC by reading (22.6%) and in-house training (3.2%).

Out of 62 individual respondents knowing ABC, 12 firms (19.35%) were classified as 'adopters'. Two firms (3.23%) reported that they had adopted ABC in the past, but have abandoned it. They were classified as 'abandoners'. The remaining 48 firms (77.42%) said that they were familiar with the concept of ABC, but had not yet decided to adopt it. They were classified as 'non-adopters'. Twenty-three non-adopters expected or intended to implement ABC in the future. The rest of the non-adopters (25) did not intend to adopt ABC. Eleven of 48 non-adopters examined the use of ABC in their firm; 6 deemed ABC not suitable while 5 were reconsidering and planning to implement it again in the future. 48 individual respondents with ABC knowledge not adopting ABC gave reasons explaining their decisions to continue with traditional cost systems. The most cited reasons for not adopting ABC were the inherent difficulties with ABC design and implementation group. The complexity and time-consumption was cited as the most important reason for not adopting ABC, followed by difficulties in selecting appropriate software packages and in collecting data on the cost drivers.

Nevertheless, those firms expected to implement ABC in the near future because they believed that ABC information would support ISO 9001 or 9002 and TQM in their firms. The existing cost systems' inaccuracies of product cost , inability to provide relevant information in the new business environment and inability to adapt to increased automation in the production/service process were also cited as major reasons for adopting ABC.

4. Conclusion

ABC is a cost management process that assigns costs to products/service according to the activities and resources consumed. Several authors claim that ABC

offers many significant benefits over the traditional costing systems, such as more product cost accuracy, more cost information for performance measurement and management's decision-making, improved cost control, cost reduction and increased competitive capability and profitability. The literature shows that the rates of ABC adoption by companies around the world are not very high; however, the adoption rates of ABC and the interest in ABC are growing.

From companies that participated in several research about adoption of ABC in 9 countries, in average the percentage of adopters were lower than non adopter, except in the UK and USA. In United Kingdom, percentage of adopter is 55%, and In USA 52%. In the other countries, Ireland 19% at survey which conducted in 2000 and 35% in 2004' survey, Greece 40%, Canada 14%, Australia 12 %, Sudi Arabia 33 %, Thailand 19% and in France not be adopted extensively too.

Research on ABC adoption suggests that one of the major perceived benefits from implementing ABC is the more accurate cost information for product costing. Other reasons that justify ABC adoption are improved cost control, cost reduction, more accurate allocation of indirect costs, improved insight into cost causation, identification of activity costs and improvement of operational efficiency.

Apart from the above reasons, the decision to implement ABC is often driven by the need to improve customer profitability analysis, to gain more accurate cost information for pricing or to prepare relevant budgets. Research also reveals that many companies proceed to the implementation of ABC because they want to modernize their cost accounting system in order to better depict costs or to improve their business processes.

However, it should be stressed that the application of an ABC system is often accompanied by difficulties. First, many adopters of ABC have reported that, during the implementation of ABC, they faced reservations from employees or managers regarding the usefulness of the new system, difficulties in identifying and selecting activities or cost drivers, problems in accumulating cost data for the new system or lack of resources. Research indicates that in many cases the time schedule of the adoption process has been stretched, cost budgets have been exceeded or even the computer software has been proved inadequate. Also, ABC adopters seem to have encountered difficulties because the process of implementing ABC is often time and resource consuming.

Regardless of the numerous benefits of ABC that are widespread in the literature there are companies that strongly oppose to the possibility of ABC adoption. According to the findings of relevant researches, the main reasons for rejecting the adoption of ABC could be summarized to the following reasons: satisfaction with the existing costing system, ABC implementation being associated with high costs, lack of time to undertake an assessment of ABC implementation, ABC's perceived inadequacy to provide more accurate cost information, lack of management support or interest and, finally, requirement to follow parent company's directives, including the selection of cost accounting system. For French companies, the factors were the language barrier, the current economic context, the existence of a preestablished French full-cost method , management style of French companies and related cultural factors.

Many studies report that the successful implementation of ABC is affected by several variables, such as behavioral, organizational, technical or contextual variables. The implementation of ABC affects the organizational member's behavior and operation

and the majority of previous studies shows that the behavioral and organizational variables influence the implementation of ABC

Although valuable, ABC can be difficult to implement, but maybe with some requirements, ABC is practical even for companies in developing countries.

Some of the requirements are :

- Top management support and commitment
- ABC requires complementary accounting systems that provide reasonably accurate costs organized by cost category and department.
- ABC requires accurate information on the volume of services provided.
- Access to and strong cooperation from personnel are important.
- Technical assistance and guidance on the ABC methodology may be necessary initially.

The usefulness of ABC in developing countries probably depends on its incorporation into an on going information and management decision-making system. One-time data collection efforts are unlikely to result in information that will be useful over time. Furthermore, a major advantage of ABC is the trend data it provides on unit costs, but this requires an on going information system.

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