A Review of Activity-Based Costing: Technique, Implementation, and Consequences

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Abstract: Accounting history has shown that new techniques have periodically been incorporated into the accounting craft. The context of the 1980s and the 1990s has led to the emergence of activity-based costing (ABC). This chapter will include a review of the evolution of ABC from its emergence around 1985 to its most recent development, “time driven ABC.” The academic research on ABC of the last 15 years will be reviewed to identify research opportunities on ABC. The consequences of ABC on the evolution of management accounting and its impact on our comprehension of the accounting process of change will be discussed.

1. Introduction

Activity-based costing (ABC) is considered by many academics and practitioners as one of the most important innovation in management accounting of the twentieth century along with variance analysis, return on investment, and the balanced scorecard. The concept of ABC is subject to varying interpretation and its definition has evolved over time. According to Hilton (2005, p. 786), “ABC is a two-stage procedure used to assign overhead costs to products and services produced. In the first stage, significant activities are identified, and overhead costs are assigned to activity cost pools in accordance with the way the resources are consumed by the activities. In the second stage, the overhead costs are allocated from each activity cost pool to each product line in proportion to the amount of the cost driver consumed by the product line.”

ABC emerged at the end of the 1980s in the United States (Jones & Dugdale, 2002). It rapidly spread to Canada and Europe. Early in the 1990s, academics and practitioners who observed or participated in ABC implementations, found that there were other advantages, such as the capability to better manage costs and activities than just an improved calculation of costs. These conclusions not only led to the emergence of activity-based management (ABM) but also conducted academics and managers to examine how ABC could interact with other management innovations and improvement initiatives such as total quality management (TQM), economic value added (EVA) or the theory of constraints (TOC).

Academics who had already been urged by Hopwood (1983) and Kaplan (1984a, 1984b) to examine how cost management systems and models were designed within real organizations, conducted field studies in different countries in Europe and North America to better understand why and how firms implement ABC. The majority of them, if not all, found that implementing ABC was much more complex than what they expected. They also performed more than 25 surveys in different countries to evaluate the extent to which organizations were implementing ABC. These surveys have shown that the implementation rates for ABC were lower than anticipated. Furthermore, they demonstrated that there was a lot of confusion among the management accounting community on what exactly ABC is.

From 1995, academics started to examine what were the contextual factors that influence the implementation of ABC at various stages (Anderson, 1995; Gosselin, 1997; Krumwiede, 1998), the perceived success of the implementation (Anderson & Young, 1999; Foster & Swenson, 1997; McGowan & Klammer, 1997; Shields, 1995; Swenson, 1995), and the impact of ABC on performance (Cagwin & Bouwman, 2002; Ittner et al., 2002; Kennedy & Affleck-Graves, 2001). These studies were criticised by Kaplan (1998) who considered that the implementation of ABC was a too recent phenomenon to enable researchers to evaluate
if it created values for organizations. Kaplan (1998) suggested that scholars should wait before assessing the effect of ABC. He also claimed that if ABC was not successful in a specific organization, it could be explained by a poor management of the ABC project.

The interest in ABC seems to have weakened at the end of the 1990s because many organizations found that ABC was too complex to implement. Innes et al. (2000) replicated a survey conducted in the United Kingdom in 1994 (Innes & Mitchell, 1995). They found that many organizations that had adopted and implemented ABC abandoned it because of several difficulties. Kaplan & Anderson (2004) also suggested that many large organizations abandoned their ABC project because of rising costs and employee irritation.

ABC has now been incorporated in most management accounting courses offered in Organisation for Economic Co-operation and Development (OECD) country universities, and in management accounting textbooks in the United States, United Kingdom, Canada, and Australia. Accountant institutes are also providing executive training on ABC to their members. There is also an enormous amount of information on ABC on the Internet.1 Despite favourable context for the adoption and the implementation of ABC and even though ABC exists since almost 20 year, surveys have shown that the diffusion process for ABC has not been as intense as it may have been expected. This is the essence of what has been called the ABC paradox (Gosselin, 1997; Kennedy & Affleck-Graves, 2001). If ABC has demonstrated so much benefits, why not more firms actually employ it? This ABC paradox still remains unexplained.

There are several potential explanations for the ABC paradox. Kaplan (1986) suggested four explanations for the management accounting lag: the lack of adequate role models, the prevalence of computer-based accounting systems, the emphasis on financial accounting, and the fact that top management do not emphasize the improvement of the relevance of their management accounting systems. Almost 20 years after the emergence and the publication of this paper, these explanations are still relevant. Kennedy & Affleck-Graves (2001) also identified three potential answers to this paradox:

1. ABC may not be suitable for every firm.
2. ABC may not, per se, add value, but may merely be correlated with other variables that are the true value drivers.
3. Little evidence has been presented that documents a direct link between a change to an ABC system and increases in either shareholder value or firm profitability (Kennedy & Affleck-Graves, 2001, pp. 22–23).

The purposes of this chapter of the Handbook of Management Accounting Research are first to examine the evolution of ABC from the works of Kaplan (1984a) and Miller & Vollmann (1985) to the recent emergence of “time driven ABC” that provides a link with customer accounting but seems to be a return to standard costing (Kaplan & Anderson, 2004). The second goal is to examine the results of the survey studies that were performed to assess to what extent firms have adopted and implemented ABC and to review the academic research carried out on ABC over the last 15 years. Finally, the chapter will also provide an opportunity to identify research opportunities on ABC and to discuss about the consequences of ABC on the evolution of cost accounting and management accounting.

The chapter is organised as follows. The first section includes a review of the evolution of ABC from the early ABC model to activity-based cost management (ABCM) and comprises a brief examination of the 1,477 papers published on ABC.2 The second section includes a brief review of the 25 surveys on ABC performed in several countries with a special emphasis on the adoption and implementation rates. The third section focuses on the empirical research on ABC and the fourth section attempts to provide a better understanding of the organisational and social consequences of ABC.

2. The Evolution of ABC: From Transaction Costs to Time-Driven ABC

2.1. The Early Activity-based Costing (ABC) Model

For the last century, accounting for overhead costs has been a major issue for management accounting researchers and practitioners. Current conventional allocation methods emerged in the beginning of the twentieth century (Chandler, 1977; Kaplan, 1984a). During that period, manufacturing firms were producing a small range of products requiring similar amounts of support services. Overhead costs accounted only for a small portion of total costs. After the Second World War, attempts were made in United Kingdom, France (Bouquin, 1993; Cibert, 1976), Denmark (Israelsen, 1993, 1994), Germany and Holland (Boons et al., 1992), and the United United Kingdom, France (Bouquin, 1993; Cibert, 1976), Denmark (Israelsen, 1993, 1994), Germany and Holland (Boons et al., 1992), and the United

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1A search on Google with the words ABC yielded 324,000 results in December 2004.

2A review of the ABC literature from 1988 to 2004 is included in Gosselin (2005).
2.2. The Literature on ABC

In order to better understand, the evolution of ABC over the last 20 years, the articles published on ABC...
during the 1988–2004 period were identified, examined, and classified. Abrahamson (1996) has used the number of articles on stock options and quality circles to better understand the diffusion process for management fads and fashions. Jones & Dugdale (2002) performed a similar search for the 1988–1998 period to explain the diffusion process for ABC. The following approach was employed to identify the articles published on ABC since 1988. The word “activity-based costing” was entered in the Proquest ABI/Inform Global database. All the abstracts of the papers identified through this search were examined. Book reviews, editorial and other irrelevant references to “activity-based costing” or “activity-based cost management” were deleted. After this first step in the review process, the final number of papers on ABC was 1,477, published from 1988 to 2004, inclusively. Table 1 shows the number of publications for each year and Fig. 1 depicts the evolution in the number of papers. The number of papers published can be considered as a proxy for the interest of the management accounting community for ABC. Table 1 and Fig. 1 clearly show that the interest for ABC quickly rose at the end of the 1980s. While only a few papers were published in the 1980s, almost 150 papers were published every year in the middle of the 1990s. This analysis will be used throughout the first section of this chapter to better demonstrate the evolution of ABC. Bjornenak & Mitchell (2002) and Lukka & Granlund (2002) have examined the ABC literature. A more in-depth review of the 1,477 papers published on ABC from 1988 to 2004 is included in Gosselin (2005).

Table 1. Number of papers on ABC per year from 1988 to 2004.

<table>
<thead>
<tr>
<th>Year</th>
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<tbody>
<tr>
<td>1988</td>
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<td>1989</td>
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<td>Total</td>
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2.3. ABC in the Early 1990s
In the beginning of the 1990s, the focus was on ABC system implementations and their outcomes (Bhimani & Pigott, 1992; Cooper et al., 1992; Cooper & Kaplan, 1992; Eiler & Campi, 1990; Foster & Gupta, 1990). Most of these studies were conducted by consultants and academicians who had recently been responsible for designing such systems. They consisted essentially of “success stories of ABC installation.” In many cases, researchers seemed to be closely associated with the case study firms, the ABC software, and the ABC implementations (Ferrara, 1993).

At that time, only a few researchers questioned the relevance of ABC (Johnson, 1992a, 1992b, 1994;...
Piper & Walley, 1990, 1991). For instance, Johnson (1990) contended that ABC does not show managers how to make their organizations more competitive and profitable. Nanni et al. (1992) also suggested that organizations should stop tinkering with their cost accounting systems. They advocated that firms do not have to install an ABC system to benefit from activity management (AM).

Noreen (1991) launched an interesting discussion on the usefulness of ABC. He identified three conditions under which ABC provides relevant cost information:

1) “Total costs can be partitioned into cost pools, each of which depends solely upon one activity”;
2) “Cost in each cost pool must be strictly proportional to the level of activity in that cost pool”;
3) “Each activity can be partitioned into elements that depend solely upon each product” (Noreen, 1991, p. 164).

These conditions are important and are not met in many instances. That may explain why managers that developed an ABC model have difficulties employing it for decision making. Bromwich & Hong (1999) extended Noreen (1991) to show that some costs cannot be assigned under ABC and that this situation may lead to cost distortions.

The interest for ABC rose rapidly in the beginning of the 1990s among the management accounting collectivity. Many organizations in the United States, the United Kingdom, and Canada developed seminars, training sessions, and conferences on ABC. One proxy for this growth in interest is the number of articles published on ABC. The number of publications, as shown in Table 1 and Fig. 1, increased quickly from 3 in 1988 (Cooper’s articles in the Journal of Cost Management) to 152 in 1995, the year during which the largest number of papers on ABC were published. ABC also became a research topic for researchers in management accounting. For example, the European Institute for Advanced Studies in Management (EIASM) launched in 1993 a new Seminar on Manufacturing Accounting Research that was held at that time in Eindhoven, in the Netherlands. The plenary speakers at that conference discussed ABC, the new costing technique.

2.4. Activity-Based Management (ABM)

During its early period of development, ABC was perceived essentially as a new device to determine product and service costs more accurately. A few years after its emergence, both academics and practitioners started to observe that providing financial and non-financial information on activities and cost drivers could also have important management implications. This evolution conducted to the emergence of adaptations of the early ABC model and more specifically to ABM. Consultants also found in ABM an opportunity to move ABC from a “costing technique” to a “management philosophy” (Jones & Dugdale, 2002). Consequently, the concept of ABM first appeared in 1991. Hilton (2005, p. 786) defines ABM in the following manner: “Using an activity-based costing system to improve the operations of an organization.” This step in the development of ABC was critical. After several implementations that had been performed with some success according to the implementers, ABC proponents recognized that the benefits derived from ABC lied in activity analyses and cost driver analyses rather than in the new costing technique per se. Thus, ABM evolved out of ABC. What was considered strictly to be a product costing system became much more as Turney (1991) explained in the following quotation: “The real key to success is putting ABC to work to identify appropriate strategies, improve product design, and remove waste from operating activities. Using ABC to improve a business is called activity-based management (ABM). It guides efforts to adapt business strategies to meet competitive pressures as well as to improve business operations.”

Another argument in favour of a move to ABM was the degree of emphasis placed on the numbers or cost components under ABC. Johnson (1994) argued that focusing on the accounting numbers traps managers in old-fashioned hierarchical thinking. Managers need to focus on the business processes. These processes form a system of interdependent (co-operative, not competitive) components that have an aim. The general aim of the business, according to Johnson, should be “exceeding customer expectations profitably.” For a business to focus only on costs may only result in a better allocation of “bad (excessive) costs.”

While ABC emphasizes more accurate product costing, ABM emphasizes activity analysis (AA) that consist in understanding the organization’s goals and how the processes within the organization work together to accomplish those goals. The AA within ABM can provide cost, quantity, and time measures suitable for TQM, value engineering, or continuous process improvement. Turney (1992a, 1992b, 1993) and Soloway (1993) suggested that the goal of ABM was to identify and eliminate non-value-added activities and reduce costs. The emergence of ABM drew a lot of attention on ABC outside the management accounting community. For a short period, ABM became one of the leading improvement initiatives.
During the same period, other approaches to improving organizational effectiveness like TQM (Hackman & Wageman, 1995) and re-engineering (Hammer & Champy, 1993) emphasized the need to review processes and activities.

The interest for ABM grew very quickly especially after the publication of Turney’s book (1991) entitled “Common cents: The ABC performance breakthrough.” An examination of the literature on ABM in the Proquest ABI/Inform Global database confirms the importance of the attention for ABM in the middle of the 1990s. Fig. 2 depicts clearly this evolution. The number of articles on ABM that amounted to 7 in 1992 grew to 25 in 1995. In 1998, 40 articles were published on ABM. After that period, the number of articles declined rapidly to reach five in 2003.

ABM was and still is an interesting way to link a cost accounting device, ABC, to the management of organizations. However, ABM challenges actual processes and activities in organizations and leads to a cross-functional view of the organization (Mevellec & Bertrand, 2005). Ultimately, it could even lead organizations to need to review in depth their organizational structure and power networks (Armstrong, 2002).

The evolution from ABC to ABM had some positive impact on the development of ABC and its use in practice. However, it created some confusion around ABC and the concepts that are relevant to it. The multiplicity of expressions such as activity accounting (Brimson, 1991), ABM (Reeve, 1996; Turney, 1992a), AA (Gosselin, 1997), activity cost analysis (ACA) (Gosselin, 1997), and cost driver analysis (CDA) that emerged in the 1990s is a good example of the variety of terms used in practice. This inference reflected to some extent the diversity of the ABC models that have been implemented. Gosselin & Mevellec (2003) interviewed managers from 42 firms in Canada and in France and concluded that none of the 42 models implemented were similar.

2.5. Deconstructing ABC
Gosselin (1997), and later Baird et al. (2004), examined ABC and ABM from a different perspective. Instead of considering ABC as a single innovation, Gosselin (1997) considered that ABC was part of a much more complex management innovation that he called “activity management”. Under this approach, AM was considered as “the effective and consistent organization of the enterprise’s activities in order to use its resources in the best possible way to achieve its objectives” (Brimson, 1991). According to Gosselin (1997), AM can be divided into four levels of complexity: AA, ACA, pilot ABC, and full ABC. Fig. 3 depicts these levels. AA is the initial level while full ABC is the final and most complex one. Full ABC subsumes pilot ABC, ACA, and AA. Pilot ABC requires the completion of the ACA and AA levels. AA is a pre-requisite to performing an ACA.

AA consists of reviewing the activities and the procedures carried out to convert material, labour, and other resources into outputs. Activities that do not contribute to the value of those outputs are identified in AA in order that they may be replaced, diminished, or removed. AA is quite similar to process analysis and business process re-engineering (Hammer & Champy, 1993; Harrington, 1991). These two approaches focus on the process itself while AA concentrates on the activities within each process. AA

![Activity-based management](image)

*Figure 2. Number of articles on ABM (1991–2004).*
does not include financial or accounting analyses. It is aimed at identifying areas of wasted effort, eliminating waste and improving cycle time, product quality, and speed of response to customer demands. However, cost reduction is not necessarily the primary objective of AA. Reduction of cycle time, quality improvement, and zero inventories are also the objectives of such analysis. Just-in-time (JIT) inventory management, cellular manufacturing, continuous flow processing, flexible manufacturing systems implementation, and TQM are all initiatives under which AA may be performed. AA is the simplest version of AM. AA does not require cost analysis and does not necessarily lead to a new overhead allocation method. Most relevant to this approach, AA is also a pre-requisite to all three of the AM approaches examined here.

ACA or CDA is the next level in the AM hierarchy. It consists in analyzing the factors that affect the cost of an activity. ACA and CDA focus on cost minimization by identifying the cost drivers and their associated activities and by tracing the interactions between cost drivers and activities (Aiyathurai et al., 1991). There are two different levels of cost drivers. Porter (1980) uses the concept of cost drivers as a designation for structural variables that explains the cost of an activity. Following Porter, Shank (1989) and Shank & Govindarajan (1989, 1993) classify cost drivers into two categories: structural and executional cost drivers. Structural cost drivers such as scale of investment and product diversity involve strategic choices made by the firm about its economic structure. Executional cost drivers are factors on which an organization depends upon to execute its activities successfully. Cooper (1988a) defines a cost driver as a measure of the manner in which products consume activities. Setup time, number of setups, material-handling hours, and ordering hours are examples of cost drivers under this definition. The strategic cost management and ABC perspectives on cost driver complement each other in a strategic cost management perspective. The first represents the structural or executional cost determinants while the second is the operationalization of those determinants. For example, product diversity is a structural cost driver (Shank, 1989), the number of setups or setup time represent some ways to measure the impact of product diversity on production costs.

In an AM system, ACA and CDA enable management to identify the costs of each activity and the factors that cause them to vary. Identifying the cost drivers of an activity may enable managers to better understand how they perform a task and may help them find new procedures, activities, and processes to reduce costs. Therefore, ACA focuses on the costs of wasted efforts. It may be accomplished without implementing a product costing system that allocates overhead costs on the basis of these drivers. Nanni et al. (1992) suggested that many firms have not implemented ABC system because most of the benefits are found in the CDA. Organizations would prefer to take actions to reduce the effects of the drivers instead of using them to allocate indirect costs. As an extension beyond simple AA, ACA, and CDA allow firms to prioritize the changes they want to make.

Gosselin (1997) divided the use of ABC into two levels: pilot ABC and full ABC. Pilot ABC is usually the first level in an ABC implementation process but may be an end in itself. It consists of designing and installing an ABC system for only one aspect of an
organization such as a department or a product line. Most of the firms, if not all, that have implemented ABC have limited themselves to this level. The purpose of a pilot ABC system may depend on the organization in which it is implemented. Full ABC is the ultimate level in the implementation of an ABC system. It consists of a cost accounting system in which all products and services are valued on the basis of the output of the ABC system. ABC cost information is used for financial reporting as well as for managerial purposes such as make-or-buy decisions, transfer pricing, performance measurement, and strategic cost management. Full ABC is still at a theoretical level. Most field studies and surveys, if not all, performed during the 1990s, have shown that this level was never achieved. This state of affairs is even recognized by ABC proponents (Kaplan & Anderson, 2004).

2.6. Activity-Based Costing from 1995 to 2000s

After 1995, the interest in ABC and ABM started to decline. The management accounting collectivity noticed that several organizations that had adopted and implemented ABC were meeting difficulties during the implementation process and that several organizations were abandoning their ABC projects (Gosselin, 1997; Innes et al., 2000; Kaplan & Anderson, 2004). Likewise, the number of articles on ABC listed on the Proquest ABI/Inform Global database declined from 120 to 40, in the period from 1995 to 2000, as shown in Table 1 and Fig. 1. Similarly, the number of papers on ABM also declined from 40 to 20, as shown in Fig. 2. This reduction occurred essentially in professional journals. In academic journals, the number of papers on ABC increased after 1995. Researchers began to report on the contextual factors that influence the adoption and implementation of ABC, the perceived success of the ABC implementations and their impact on decision making and performance.

The discussion on ABC also evolved in the second half of the 1990s while practitioners attempted to design procedures and softwares to facilitate ABC implementations. For instance, consulting firms developed activity dictionaries that list the typical activities of departments and processes of manufacturing and service organizations. These dictionaries would enable consultants to apply a generic ABC model in several organizations. Many consulting firms also developed ABC softwares to facilitate data processing. Surveys have shown that electronic spreadsheets like Excel are more frequently used than these softwares because the costs of customization of the softwares are too high. Many articles in the professional literature described the difficulties in the ABC implementation process and attempted to provide solutions to them.

The management accounting collectivity also witnessed the emphasis on the application of ABC in specific industries in the professional literature. For example, the professional journal “Progressive Grocer” published more than 20 articles such as Garry (1996) on the specific application of ABC to the grocery industry. Table 2 includes a list of article, which reports the implementation of ABC in different contexts. This list is of course incomplete.

Another phenomenon appeared at the end of the 1990s. Some practitioners and academics attempted to link and adapt ABC to other techniques in accounting and management like capital budgeting (Cooks et al., 2000), change process (Brewer et al., 2003), transfer pricing (Kaplan et al., 1997), or to innovations in accounting and management such as balanced scorecard (Maiga & Jacobs, 2003), customer accounting (Foster et al., 1997), target costing (Horvath et al., 1998), TQM (Armitage & Russell, 1993), EVA (Roztocki & Needy, 1999), TOC (Fritzsche, 1997; Huang, 1999), total cost of ownership (Ellram, 1995), and life-cycle costing (Emblemsvag, 2001). Similarly, many articles pertained to specific activities such as procurement (Degraeve & Roodhooft, 2000), phase in the life cycle of a project such as product development (Ben-Arieh & Qian, 2003), operation management (Gupta & Galloway, 2003), reverse logistics channel (Goldsby & Closs, 2000), and supply chain management (Lin et al., 2001).

During the last 5 years of the twentieth century, the interest for ABC seemed to decline. Many organizations faced transformations that implied changes that went beyond improvements to their cost management systems. The limitations of ABC

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<tr>
<th>Industry</th>
<th>Article</th>
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<tr>
<td>Financial institution</td>
<td>Innes &amp; Mitchell (1997)</td>
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<tr>
<td>Grocery</td>
<td>Garry (1996)</td>
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<td>Life insurance industry</td>
<td>Adams (1996)</td>
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<td>Hospitals</td>
<td>King et al. (1994), Aird (1996)</td>
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<tr>
<td>Postal service</td>
<td>Carter et al. (1998)</td>
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<tr>
<td>Universities</td>
<td>Acton &amp; Cotton (1997)</td>
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such as those identified by Noreen (1991) lead several organizations to abandon their ABC projects. This trend was confirmed in Innes et al. (2000).

2.7. Activity-Based Costing after the Year 2000
The decline of ABC continued after the year 2000. The number of articles on ABC referenced in the Proquest ABI/Inform Global database diminished from 102 in 1999 to 53 in 2004. Similarly, there were only five articles that referred to ABM in 2003. The concept of ABM was still referred to in academic journals (Armstrong, 2002) but was now rarely used in the professional literature. Because of the overlap and the confusion between ABC and ABM, some authors (Foster & Swenson, 1997) preferred to use the term ABCM. These different labels did not help to reduce the confusion around ABC.

While ABC in the 1990s had focused essentially on allocating actual costs incurred during past period, several organizations claimed that they needed to use ABC for budgeting purposes. Dierks & Cokins (2000) defined activity-based budgeting as “An approach to budgeting where a company uses an understanding of its activities and driver relationships to quantitatively estimate work load and resource requirements as part of an on-going business plan.” ABB is a major change in comparison to ABC because it would enable an organization to plan and prepare a budget based on an ABC model (Blekker, 2001; Hansen & Torok, 2004; Stevens, 2004). There are only 25 articles on ABB referenced in the Proquest ABI/Inform Global database. There has not yet been any academic research on ABB. Only a few case studies were completed (Block & Carr, 1999; Borjesson, 1997; Liu et al., 2003; Mason, 1996).

Other new costing techniques or adaptations of ABC came out in the beginning of the 2000s. These new costing approaches were aimed at solving the fundamental problems that are inherent to ABC and its implementation: full costing and idle capacity. Attribute-based costing is a method derived from ABC, and provides detailed cost–benefit analysis of customer needs (Walker, 1998). It breaks customer needs into the specific product attributes and focuses on planning rather than analyzing past costs. Resource consumption accounting, which claims to leverage the best of the last several decades of developments in cost accounting in Europe and the US was developed and explained in several articles (Benjamin & Simon, 2003; Clinton & Webber, 2004; Keys & Van der Merwe, 2001; Van der Merwe & Keys, 2002a, 2002b). But the most recent development in ABC is the emergence of “time-driven ABC” (Kaplan & Anderson, 2004). Kaplan (1998) had claimed that if ABC was not successful in an organization, it could simply be explained by poor management of the ABC project. In their more recent article, Kaplan & Anderson (2004) suggested that many organizations were abandoning their ABC model because the costs were too high and employees were irritated. Kaplan also recognized that ABC was very difficult to implement. Kaplan & Anderson (2004) proposed a new approach that they essentially describe as a change from a “rate based ABC” to a “time-driven ABC.” The conventional ABC approach is considered rate based. Cost driver rates are determined to assign activity costs to cost objects. Under “time-driven ABC,” rates are established on a time basis. Kaplan & Anderson (2004) explain their new concept with a customer department. This supposedly new approach does not solve the conceptual problems inherent to ABC such as: fixed costs considered variable, idle capacity costs, and the design and maintenance of the ABC model. It enables an organization to determine periodically unit cost based on the time-driven rates but it does not provide the benefits that may be earned from AM. Cleland (2004) outlines some of the limitations of time-driven ABC when compared to another approach labelled “contribution-based approach CBA.” The innovation process for cost accounting continues.

In 2005, the ABC paradox remains unexplained. ABC has several interesting features from a conceptual point of view. It is very attractive for managers since it can provide relevant information for decision making. ABC has been included in most, if not all, management accounting textbooks. It is also part of the curriculum of most business schools and professional accounting associations. The ABC paradox remains because, even though, ABC seems to be well-known and accepted in the management accounting collectivity, it has not been considered by the majority of organizations and it has been abandoned by many organizations that had sometime in the 1990s decided to adopt and implement it.

3. Research on the Diffusion of ABC
Since the beginning of the 1990s, researchers have attempted to evaluate the degree to which organizations have adopted and implemented ABC in several countries and to identify the factors that influence the decision to adopt and implement ABC. In this section, these studies will be reviewed to better understand the diffusion process for ABC and to provide some explanations for the ABC paradox (Gosselin, 1997; Kennedy & Affleck-Graves, 2001).
3.1. Descriptive Research on ABC

A large number of survey studies on ABC have been conducted in different countries over the last 15 years especially during the 1990s to determine to what extent organizations have adopted and implemented ABC. Some researchers also attempted simultaneously to associate some contextual factors with the adoption and the implementation of ABC. The results of these studies showed that despite the fact that academics and management accountants have demonstrated a great deal of interest for ABC, the diffusion process for ABC has not been as intense as one may have expected. The results of all these surveys have to be considered cautiously since there is no single definition of ABC. Gosselin (1997) showed that there may be some confusion among the survey respondents about what exactly ABC is. Baird et al. (2004) confirmed these findings. Furthermore, respondents that are working in organizations that have not implemented ABC may not be inclined to respond to ABC surveys. In other words, it is possible that most ABC surveys overestimate the ABC implementation rates.

In the following pages, we shall briefly examine most of these surveys to better understand to what extent ABC has become part of the management accounting tools that are used by organizations. The description of the surveys is divided into three periods.

3.1.1. Surveys Published from 1990 to 1994

The Cost Management Group of the Institute of Management Accountants, formerly the National Association of Accountants (IMA, 1993; National Association of accountants, 1991) conducted a large survey of controllers of 2,500 American firms in 1991 and 1,500 in 1993. The response rates were 23% in 1991 and 27% in 1993. The results of these two surveys are shown in Table 3. According to these surveys, there was an increase in the percentage of firms that implemented ABC in the United States between 1991 and 1993 and a similar reduction in the percentage of organizations that had not considered ABC, diminishing from 70% to 50%. These results were interesting at the time because they suggested that there was a discernible upward trend in the proportion of firms that were implementing ABC. Other surveys will show that this trend was more the result of the different potential biases inherent to the surveys like the confusion about what exactly ABC is and non-response biases.

Innes & Mitchell (1991) conducted a survey of the use of ABC by members of the Chartered Institute of Management Accounting (CIMA) in the United Kingdom. They surveyed 720 firms in the manufacturing and financial services sectors. The overall response rate was 26%. This survey revealed an implementation rate of only 6% among the respondents but 33% of them indicated that they were currently assessing ABC. There were also 9% of the respondents who indicated that they rejected ABC. The majority of respondents mentioned that they had not considered ABC. Again, the results of this survey suggested that there was a potential for growth in the proportion of firms that would implement ABC. Innes & Mitchell (1995) and Innes et al. (2000) replicated this survey to verify this hypothesis. These results will be examined further in this chapter.

Cobb et al. (1992) also conducted a follow-up study of the respondents to their Innes & Mitchell (1991) survey. They selected 30 of the 62 respondents that had previously mentioned that they were still considering ABC. These respondents were chosen because they had indicated that they had identified potential problems in installing ABC. The purpose of this study was an attempt to explain why so few firms implement ABC. The first stage of the study consisted of telephone interviews while the second involved company visits and personal interviews. The most important finding of this study was that two-thirds of the 30 respondents who had considered ABC a year ago were still considering it a year later without having reached a decision. The amount of work involved and the existence of other priorities were the most often-mentioned reasons for not having decided to install an ABC system.

Another study was done by Nicholls (1992) in the United Kingdom among a group of participants at an ABC seminar that was held in May 1990. About 10% of the respondents mentioned that they had adopted ABC, 18% were experimenting the ABC technique while 62% were considering the adoption of ABC. These results are, of course, biased because of the nature of the sample and cannot be generalized to the population of United Kingdom firms. Nicholls (1992) investigated the factors that would motivate firms to adopt ABC. The respondents indicated the need for more accurate cost information (65%), the dissatisfaction with the actual costing system (65%), the need to reduce costs (45%), and the growing proportion of overhead costs (32%). Respondents that adopted ABC were asked to identify the difficulties that they have encountered during the ABC implementation. They mentioned that the availability of data, the shortage of resources, the resistance to

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This section includes descriptive parts of exploratory and explanatory studies on ABC.
change, and the lack of training were the most important problems they had faced.

Armitage & Nicholson (1993) also used a questionnaire to capture information about Canadian firms’ attitudes towards ABC. Their survey was sent to 702 large Canadian firms. The response rate was as high as 50%. The results, shown in Table 3, demonstrated that 14% of the respondents had implemented ABC. They also indicated that most of the firms that implemented ABC were not planning to replace their conventional cost accounting systems with ABC and that larger organizations were more likely to consider ABC. Like Innes & Mitchell (1991), the majority of the respondents (67%) mentioned that they had not considered ABC. At that time, many considered such a result as an indication of the potential for ABC, the results of the surveys conducted subsequently refuted this proposition. Organizations that had not considered ABC, did not adopt ABC subsequently.

In fact, organizations that were not planning to adopt ABC or that had rejected ABC (Armitage & Nicholson, 1993; Cobb et al., 1992) provided the following explanations for their decisions:

- Organizations’ products or services were not the types that would benefit from ABC
- Information technology inadequacy
- Lack of senior management commitment
- AA is already performed to determine value-added and non-value-added activities
- Difficulties in linking cost drivers to individual products
- Amount of work involved in comparison to the benefits resulting from ABC
- Difficulty of collecting quantitative information on cost drivers

During the same period, Ask & Ax (1992), Bright et al., 2002, and Drury & Tayles (1994) conducted survey studies on product costing systems in Swedish and British firms. Ask & Ax (1992, 1997) showed that 7.2% of Swedish engineering firms were involved in pilot ABC projects. The vast majority of the

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**Table 3. Surveys on the diffusion of ABC (1990–1994).**

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Response rate</th>
<th>Period</th>
<th>Implementation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAA (1991)</td>
<td>United States CMAs of 2,500 firms</td>
<td>23%</td>
<td>Spring, 1991</td>
<td>11% had implemented ABC</td>
</tr>
<tr>
<td>Innes &amp; Mitchell (1991)</td>
<td>United Kingdom 1990 survey of manufacturing and financial service firms</td>
<td>26%</td>
<td>September, 1990</td>
<td>6% began to implement ABC, 33% were considering, 52% had not considered ABC, 9% had rejected ABC</td>
</tr>
<tr>
<td>Ask &amp; Ax (1992)</td>
<td>Sweden Engineering industry</td>
<td>67.3%</td>
<td>January–April, 1991</td>
<td>2% are applying ABC, 23% are considering, 32% are re-applying ABC</td>
</tr>
<tr>
<td>Bright et al. (1992)</td>
<td>United Kingdom Manufacturers</td>
<td>12%</td>
<td>Latter half of 1990</td>
<td></td>
</tr>
<tr>
<td>Nicholls (1992)</td>
<td>United Kingdom 179 companies that attended an ABC seminar in May 1990</td>
<td>34.6%</td>
<td>January, 1991</td>
<td>10% had implemented ABC, 18% were piloting ABC techniques</td>
</tr>
<tr>
<td>IMA (1993)</td>
<td>United States CMAs of 1,500 firms</td>
<td>27%</td>
<td>Spring, 1993</td>
<td>36% had implemented ABC</td>
</tr>
<tr>
<td>Armitage &amp; Nicholson (1993)</td>
<td>Canada Financial Post list of 700 largest companies in Canada</td>
<td>50%</td>
<td>Summer, 1992</td>
<td>14% are applying ABC, 15% are considering</td>
</tr>
<tr>
<td>Drury &amp; Tayles (1994)</td>
<td>United Kingdom Sample of 866 business units drawn from a population of 3,290 manufacturing firms</td>
<td>35%</td>
<td>1991</td>
<td>ABC has been introduced in 4% of the firms, 9% are planning the introduction, 37% are considering ABC, 44% had not considered, 5% rejected ABC</td>
</tr>
</tbody>
</table>

*aThe authors of this study have shown some scepticism about the validity of the disclosed usage of ABC in their survey.*
respondents (80%) mentioned that they wanted to improve their costing systems. Bright et al. (1992) consisted of a large study on product costing techniques in the United Kingdom firms. The results of the part of their study on the adoption and implementation were astonishing. They indicated that 32% of the respondents were using ABC and that 60% of the remaining group was planning to use ABC within the next 3 years. Even the authors of this study showed some scepticism about these results. There are potential explanations for these results. The response rate was low, 12% and the authors have not performed any test for non-response bias. Drury & Tayles (1994) also conducted a large study on product costing practice in the United Kingdom. Their instrument included a series of statements relating to the actual and planned use of ABC. There were 4% of the firms that introduced ABC while 9% intended to introduce ABC.

Surveys on ABC that have been conducted between 1990 and 1995 demonstrated clearly that there was at the time a strong interest for ABC but that the majority of firm managers in industrialized countries had not yet considered implementing an ABC system. Walley et al. (1994) contended that questionnaire surveys were overstating the level of adoption and implementation of ABC and that there was a gap between the leading edge practices described in the management accounting literature and current practices within firms. Bright et al. (1992) who reported that 32% of the organizations they surveyed were currently using ABC and that 60% of their respondents, expected to be using ABC within the next 3 years, have also suggested this potential overstatement.

3.1.2. Surveys Published from 1995 to 2000
Several survey studies were completed in the second half of the 1990s. Their results are summarized in Table 4. Innes & Mitchell (1995) replicated their 1991 survey. The population surveyed comprised the 1,000 largest firms in the United Kingdom. The results showed that 20% of the respondents had adopted ABC. In 1991, that rate was 6%. They also demonstrated that even though ABC had been developed since 7 years at that time, the proportion of firms that had not considered implementing ABC was still very high (40%). Furthermore, 13% of the firms had rejected ABC (9% in 1991). The adoption rate was almost similar in both manufacturing and service organizations (19.8% in comparison to 18.9%). This result is interesting since at first ABC was intended for firms from the manufacturing industry. Again, respondents mentioned that the objectives of their ABC system were: cost reduction, pricing, profitability analysis, performance improvement, and cost management.

Shields (1995) did a survey in 1994 to identify the factors that influence the success of ABC implementation. This was one of the first academic paper on ABC and the first survey study that tried to identify the factors that influence the perceived success of ABC implementations instead of attempting to determine to what extent firms have adopted ABC. The population was made up of 143 firms that were known to be ABC implementers. Therefore, there was no implementation rate. The model used by Shields was based on Shields & Young (1989). The results are further explained in the next section.

The study of Lukka & Granlund (1996) was aimed at providing a better understanding of the cost accounting practices of Finnish firms. The population surveyed consisted of 309 Finnish manufacturing firms. They found that that 30% of the respondents had implemented or were in the process of implementing ABC. Like in several studies that had been completed at that time (Armitage & Nicholson, 1993; Ask & Ax, 1992; Gosselin, 1997; Innes & Mitchell, 1995; Nicholls, 1992), size was associated with the adoption of ABC. The other factors that significantly influenced the adoption of ABC were the number of products and the complexity of the manufacturing process.

In 1994, Bjornenak (1997) did a survey in Norway to develop a conceptual framework to explain the diffusion process for ABC and to identify the factors that influence managers’ decision to adopt ABC. Among the 75 respondents, 53 had some knowledge of ABC. Within this group, 30 had adopted ABC, 12 had not considered its implementation, and 11 had rejected it. The results of this study were mixed. Consistent with the literature, firms with high level of overhead costs tended to adopt ABC more frequently but, on the other hand, firms that manufactured customized products and that face a high level of competition did not adopt ABC. The percentage of exports and the number of competitors were the proxies used to measure competition. In Finland, Malmi (1997) conducted a survey to understand the diffusion process for ABC. The study enabled Malmi to conclude that capital-intensive firms, firms with a wide range of products, larger firms, and firms that export a more important proportion of their products tended to adopt ABC.

A second survey on ABC was conducted by Gosselin (1997) in Canada after Armitage & Nicholson (1993). Among the 161 respondents, 77 indicated
that they had adopted ABC but only 49 finally implemented it. Thus, the implementation rate was high at a level of 30.4%. The population in this survey was limited to manufacturing organizations. Most surveys have clearly demonstrated that the ABC implementation rates are higher in manufacturing firms. Gosselin (1997) conducted the first survey study that examined the differences between the innovation that the organization adopted and finally implemented. The results of this survey showed that many respondents were confused about what ABC really was. This study will be reviewed in depth in the next section.

Chenhall & Langfield-Smith (1998) did a survey on the adoption of management accounting practices in Australia. They report that the adoption of ABC is relatively low. ABC was ranked 24 out of 27 in their study. Clark (1999) performed the first survey on ABC in Ireland. A total of 204 firms responded to the survey. Approximately, 12.5% of the firms mentioned that they use ABC, 20% were currently assessing ABC, and 13% said they assessed ABC but decided not to use it. The largest group, 55%, again, like in previous surveys, comprises firms that had not considered ABC. This study also demonstrated that subsidiaries of multinational firms and larger firms tend to adopt and implement more ABC. Groot (1999) performed a survey in Dutch and US firms from the food industry and found that the implementation rates in the two countries were quite similar.

Innes et al. (2000) replicated their 1994 survey (Innes & Mitchell, 1995) in the United Kingdom’s largest companies and compared the results. They showed that the ABC adoption rate had not increased during the 1994–1999 period. It had actually dropped from 21% of the respondents to 17.5%. On the other hand, the rejection rate had grown. Larger companies were still more likely to adopt ABC than the smaller ones. The use of ABC was important in firms in the financial service industry. Although small changes were apparent in the popularity ranking of ABC application, cost reduction, pricing, performance

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Response rate</th>
<th>Period</th>
<th>Adoption rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innes &amp; Mitchell (1995)</td>
<td>United Kingdom</td>
<td>Firms listed in TIME 1000</td>
<td>33.2%</td>
<td>Early 1994</td>
</tr>
<tr>
<td>Lukka &amp; Granlund (1996)</td>
<td>Finland</td>
<td>Manufacturing firms</td>
<td>43.7%</td>
<td>November 1992 to January 1993</td>
</tr>
<tr>
<td>Bjornenak (1997)</td>
<td>Norway</td>
<td>Manufacturing organizations</td>
<td>57%</td>
<td>1994</td>
</tr>
<tr>
<td>Gosselin (1997)</td>
<td>Canada</td>
<td>Manufacturing strategic business units</td>
<td>39.5%</td>
<td>October, 1994 to January, 1995</td>
</tr>
<tr>
<td>Groot (1999)</td>
<td>Netherlands and USA</td>
<td>Food industry</td>
<td>24% and 17%</td>
<td>1994–1995</td>
</tr>
<tr>
<td>Clarke et al. (1999)</td>
<td>Ireland</td>
<td>Manufacturing firms in the Business &amp; Finance listing of Ireland</td>
<td>41%</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>Innes et al. (2000)</td>
<td>United Kingdom</td>
<td>Firms listed in TIME 1000</td>
<td>22.8%</td>
<td>1999</td>
</tr>
</tbody>
</table>
measurement/improvement, and cost modelling remain the most common applications, with over 60% use by the adopters. The overall success of ABC was rated 3.9 on an average (on a five-point scale) by the 1999 respondents (3.8 in 1994) and 25 of them (of the 28 who answered the question) considered that the investment made in ABC had been financially beneficial to their organizations. The results of both the 1994 and 1999 survey like Shields (1995) showed that top management support had a strong impact on the success rating of ABC. Finally, on the question of whether ABC represented a fad, this survey evidence is inconclusive.

The survey studies that have been done over the 1995–2000 period have shown that despite the large number of articles published on ABC during that period, the inclusion of ABC in most management accounting textbooks, the presence of several consulting firms and the development of ABC softwares, and the ABC adoption rate have not increased as much as the management accounting community would have expected. These results support the proposition of the existence of an ABC paradox.

### 3.1.3. Surveys Published from 2001 to 2005

After the year 2000, the number of surveys decreased significantly. Table 5 includes a summary of the findings of these surveys. Bescos et al. (2002) compared the implementation rates for ABC in France and in Canada. This was the first ABC survey in France. Lebas (1994) had pointed out that the French cost accounting method called “méthode des sections homogènes” was different from the British and

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Country</strong></td>
</tr>
<tr>
<td>Bescos et al.</td>
</tr>
<tr>
<td>Cotton et al.</td>
</tr>
<tr>
<td>Kiani &amp; Sangeladji</td>
</tr>
<tr>
<td>Pierce (2004) and Pierce &amp; Brown (2004)</td>
</tr>
<tr>
<td>Cohen et al. (2005)</td>
</tr>
</tbody>
</table>
American costing methods. However, unlike ABC, this approach is based on functional areas not on activities (Lebas, 1999). Some French academics and practitioners have claimed that French firms were already using a system similar to ABC. It was therefore useful to examine the extent to which French firms apply ABC. The results of this survey show that the implementation rates were similar in Canada and in France. However, the use of mail questionnaire is not part of the French research tradition. The response rate in France was very low (4%). This rate did not enable the researchers to draw a satisfactory conclusion.

Cotton et al. (2003) replicated the Innes et al. (2000) survey in New Zealand in 2001. The response rate was high at 40%. Their results are quite similar to Innes et al. (2000). The adoption rate was slightly higher (20.3% vs. 17.5%) but fewer firms were considering ABC (11.1% vs. 20.3%). The authors suggest that these variances could be explained by the difference in size of the firms in the two samples. It is not clear that the fact that New Zealand firms are smaller is the right explanation for the differences in the results of these two surveys. Both surveys also explored the factors that influence the success of the ABC implementations. Overall, the perception of the success of ABC implementations by New Zealand respondents was high like those of UK respondents (Innes et al., 2000). In Australia, Baines & Langfield-Smith (2003) examined the antecedents and found that a change towards a differentiation strategy would result in an increased use of advanced management practices such as ABC. This result was consistent with Gosselin (1997).

The most recent survey done in the United States was by Kiani & Sangeladji (2003). The questionnaire was sent to 500 presidents, controllers, and managers of the Fortune 500 largest industrial corporation in the United States. The number of responses amounted to 85. Among the respondents, 44 firms had used ABC at various levels. The adoption rate was high but, again like in many surveys, the questionnaire did not enable the researchers to assess what was the nature of the ABC model implemented.

Pierce (2004) and Pierce & Brown (2004) also conducted a survey in Ireland with a questionnaire similar to that used by Innes et al. (2000) and found results that they consider to be quite similar to those of Cotton et al. (2003). Even though they report an adoption rate of 27.9%, they indicate that the proportion of Irish firms that have not considered ABC is still high at just over 50%. The adoption rate of this survey is much higher than the one reported by Clark et al., 1999. The responding companies included 51.6% of manufacturing firms. Subsidiaries of multinational companies accounted for 49.2% of the respondents. This is probably one explanation for the adoption rate of 27.9%, which is larger than the one disclosed in Innes et al. (2000). Regarding the use and the perceived success of ABC for a series of specific applications, the results of this Irish survey are, in general, quite similar to those obtained in Innes et al. (2000). Cohen et al. (2005) surveyed Greek firms and found that a large number of firms had adopted ABC but also that many firms had decided not to adopt ABC. Lastly, Bhimani et al. (2005) conducted a survey study in seven countries (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States). In this investigation, the response rates in Canada and Italy were the lowest at a rate of 7% and highest in Japan with 19%. United Kingdom, Germany, United States, and France produced response rates of 17%, 15%, 11%, and 8%, respectively. The results of the study suggested the prevalence of outcome-based rather than process-based dependencies between ABC and strategy orientation across the organizations investigated. They also indicated that the strategy and perception of ABC implementation success are associated. On the other hand, strategy orientation was neither found to affect the decision to implement ABC, nor the speed or stage of ABCM. The investigation was also indicative of the stability of ABC and corporate strategy relationships across different country contexts.

3.1.4. Survey Findings

Despite the fact that ABC has been incorporated to the syllabus of most accounting training programs and is the topic of at least one chapter in most popular accounting textbooks in the United States (Atkinson et al., 2004; Hilton, 2005), in the United Kingdom (Horngren et al., 2002), surveys show that the adoption rates for ABC have been and remain low.

Many have argued that the use of the survey method in management accounting does not enable to gather valid data from which general responses would be found to questions like: Why firms implement ABC, how they implement it, or which decisions are based on ABC information. It is even difficult to evaluate to what extent ABC is really used within organizations. There are some factors that may lead us to the conclusion that implementation rates of ABC are overestimated. First, in most survey studies on ABC, respondents were working in the management accounting area, their responses may not necessarily reflect the perception of other managers. Second, the concept of ABC is not clearly
defined in most surveys. Thus, there may be some confusion about what ABC really is. Gosselin & Mevellec (2004) have interviewed managers in 42 organizations to find out that there was no single ABC and that all the models developed and implemented were to some extent different. This conclusion led them to design a cladogram (a classification device) to categorize the different types of ABC and cost management systems.

3.2. Exploratory and Explanatory Research on the Diffusion of ABC

The empirical studies on ABC can be organised into three different groups. The first group of research studies is aimed at identifying the factors that influence the decision to adopt and implement ABC. The second group is made up of studies that have attempted to go beyond the first level of analysis and examine what are the factors that influence the success of ABC implementations. The third group includes research projects that seek to evaluate the impact of ABC on performance and stock prices. This last category will be reviewed in the section on the organizational and social consequences of ABC while the first two will be examined in the following pages.

3.2.1. Contextual and Organizational Factors Influencing the Adoption and the Implementation of ABC

From the mid-1990s, researchers have started to examine what were the contextual factors that influence the adoption and implementation of ABC in studies that were not aimed primarily at evaluating the extent to which organizations had adopted and implemented ABC like in the previous section. Table 6 comprises a list of the factors that affect the adoption and the implementation and the studies that have examined these factors.

Anderson (1995), Bjornenak (1997), Innes & Mitchell (1995), and Krumwiede (1998) noted that organizations that face more competition tended to adopt ABC. Anderson (1995), Innes & Mitchell (1995), Gosselin (1997), Malmi (1997), and Chenhall & Langfield-Smith (1998) found an association between environmental uncertainty and the adoption of ABC. Gosselin (1997) reported that centralization was associated with the implementation of ABC among firms that had adopted an AM approach. Bjornenak (1997), Krumwiede (1998), and Malmi (1999) demonstrated that firms with more product diversity adopted ABC while Krumwiede (1998) and Ittner et al. (2002) associated the complexity of the production process with ABC adoption and implementation. Many field studies and surveys have demonstrated that the adoption of ABC tends to be more frequent within large organizations (Armitage & Nicholson, 1993; Bjornenak, 1997; Gosselin, 1997; Innes et al., 2000; Innes & Mitchell, 1995; Krumwiede, 1998; Pierce & Brown, 2004). Gunasekaran et al. (1999), Gunasekaran & Singh (1999), and LaScola et al. (2003) examined how small and medium enterprises implement ABC and what are the specific difficulties that are met within this context. Strategy was also another determinant of the adoption of ABC that was considered in Gosselin (1997), Baines & Langfield-Smith (2003), and Bhimani et al. (2005). Finally, Clark et al. (1999) have shown that subsidiaries of multinational firms tend to adopt more ABC.

Some researchers suggested that the influence of contextual and organizational factors would depend on the stage in the innovation process. Anderson (1995) and Krumwiede (1998) used the six stages proposed by Kwon & Zmud (1987) and Cooper & Zmud (1990) in the management information system literature while Gosselin (1997) referred to the

| Table 6. Contextual factors that affect the adoption of ABC. |
|---------------------------------|----------------|
| **Contextual factors**          | **Articles**   |
| Organizational structure        | Gosselin (1997) |
| Production process              | Krumwiede (1998), Ittner et al. (2002) |
| Strategy                        | Gosselin (1997), Baines & Langfield-Smith (2003), Bhimani et al. (2005) |
| Subsidiary of multinational firms | Clark et al. (1999) |
four stages used in the innovation literature (Hage, 1980).

Anderson (1995) examined the contextual factors that influenced the adoption and implementation of ABC at a large US automobile manufacturing industry and developed a model to explain the implementation process within a large firm. The study was based on more than 40 hr of interviews with managers from different hierarchical levels of a firm in the automobile industry during the 1986–1993 period. The model developed based on Kwon & Zmud (1987) and Cooper & Zmud (1990) had six stages:

1. Initiation
2. Adoption
3. Adaptation
4. Acceptation
5. Routinization
6. Integration

The observations and interviews enabled Anderson to identify 19 factors that influence positively or negatively the implementation of ABC at four stages of the Cooper & Zmud (1990) model. The four stages were initiation, adoption, adaptation, and acceptance. These factors are presented in Table 7. Some of the factors have an influence only at one specific stage. The impact of contextual factors such as competition, relevance to managers’ decisions, and compatibility and organizational factors such as top management support, training, and satisfaction with the existing system vary according to the stage studied. Therefore, this model can only be useful and reliable if the stage of the implementation can be identified properly.

Anderson (1995), as shown in Table 7, suggested that at the initiation stage, factors such as competition, heterogeneity of demands, environmental uncertainty, disposition toward change, functional specialization, training, complexity for users, compatibility with existing systems, relative improvements over existing system, and worker responsibility have a positive influence at the initiation stage of ABC. Centralization and worker responsibility would have a negative influence.

At the adoption stage, environmental uncertainty, disposition toward change, process knowledge, role involvement, training, complexity for users, relative improvements over existing system, relevance to managers’ decisions, and compatibility with firm strategy have a positive influence on adoption. Three variables have a negative influence: internal communications, centralization, and worker responsibility.

### Table 7. Factors that influence the attainment of stage (Anderson, 1995).

<table>
<thead>
<tr>
<th>Categories</th>
<th>Factors</th>
<th>Positive influence</th>
<th>Negative influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>External environment</td>
<td>Heterogeneity of demands, competition, environmental uncertainty</td>
<td>Initiation; initiation, adaptation; initiation, adoption</td>
<td></td>
</tr>
<tr>
<td>Individual characteristics</td>
<td>Disposition toward change, process knowledge, role involvement</td>
<td>Initiation, adoption, adaptation; adoption, adaptation</td>
<td>Adaptation</td>
</tr>
<tr>
<td>Organizational factors</td>
<td>Centralization, functional specialization, internal communications, training</td>
<td>Adaptation; initiation, adaptation, acceptance; initiation, adoption, adaptation</td>
<td>Initiation, adaptation, adoption</td>
</tr>
<tr>
<td>Technological factors</td>
<td>Complexity for users, compatibility with existing systems, relative improvements over existing system, relevance to managers’ decisions and compatibility with firm strategy</td>
<td>Initiation, adoption; initiation, adaptation; initiation, adoption, adaptation</td>
<td></td>
</tr>
<tr>
<td>Task characteristics</td>
<td>Uncertainty and lack of goal clarity, variety, worker autonomy, worker responsibility</td>
<td>Initiation; acceptance; initiation, adaptation</td>
<td>Initiation and adoption, adoption, initiation</td>
</tr>
</tbody>
</table>
uncertainty, and lack of goal clarity and worker autonomy. The number of variables that have some influence at more advanced stages of the implementation process is much lower. The third stage, the adaptation, is influenced positively by competition, disposition toward change, centralization, internal communications, training, and compatibility with existing systems. Only internal communications, training, and variety would have an influence at the acceptance stage.

This article provided a theory of implementation of change in management accounting that will be referred to in many subsequent studies in management accounting. Table 7 clearly shows that the number of factors that influence negatively the implementation of ABC at one of the four stages of Anderson model is limited. This situation is probably explained by the fact that the organization in which Anderson performed the study did not complete all the stages and has not made the decision to abandon ABC. Future research could attempt to use the Anderson’s model in the context of an organization that abandoned ABC after having completed three or four stages of the Cooper & Zmud (1990) model.

Krumwiede (1998) empirically tested the model developed by Anderson (1995). He examined how some contextual factors influence the initiation and adoption stages of ABC and how various contextual and organizational factors affect the implementation stages. In this study, the data were collected through a survey instrument mailed to members of the Institute of management accountants in the United States. The dependent variable was the stage of ABC implementation. The results show that, as suggested by Anderson (1995), the influence of the factors varies according to the implementation stage of the innovation, in this case ABC. Table 8 outlines the stages and the factors that have some significant influence.

### 3.2.2. Diffusion of Innovations

Gosselin (1997) examined the effect of strategy and organizational structure on the adoption and implementation of AM approaches such as ABC. This study was based on the literature on the diffusion of innovations. An innovation is defined as the adoption of an idea or a behaviour that is new to the organization adopting it (Bolton, 1993; Zaltman et al., 1973). Innovations are typically classified into two categories: administrative innovations and technical innovations. Administrative innovations are those that affect organizational structures and administrative processes. This type of innovation is concerned with changes in goals, strategies, and control systems. Accounting innovations such as ABC are considered as administrative innovations (Clark et al., 1999; Dunk, 1989; Hopwood, 1974; Merchant, 1981). Technical innovations are ideas for new products, processes, and services (Daft, 1978). They pertain to changes in products or services and to the way products are produced and services are rendered. Evan (1966) argued that administrative innovations tend to lag behind technical innovations because they are perceived by management as being less closely associated with the profit objectives of manufacturing organizations. On the other hand, Damanpour & Evan (1984) suggest that administrative innovations may lead technical innovations. Gosselin (1997) suggested that AM levels have characteristics of both technical and administrative innovations. AA and ACA or CDA are technical innovations because they mainly have an impact on how products are manufactured and services are rendered. AA and ACA are generally conducted at the operational level. They

<table>
<thead>
<tr>
<th>Stages of ABC implementation</th>
<th>Positive influence</th>
<th>Negative influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation</td>
<td>Perceived degree of potential cost distortions, size</td>
<td>Job shop</td>
</tr>
<tr>
<td>Adoption</td>
<td>Perceived degree of potential cost distortions, top management support, degree of decision usefulness</td>
<td>Job shop</td>
</tr>
<tr>
<td>Analysis</td>
<td>Degree of decision usefulness, information technology, number of years since ABC was adopted</td>
<td>Job shop</td>
</tr>
<tr>
<td>Acceptation</td>
<td>Perceived degree of potential cost distortions, top management support, number of years since ABC was adopted, number of purposes identified for ABC</td>
<td>Job shop</td>
</tr>
<tr>
<td>Routinization</td>
<td>Degree of decision usefulness, information technology, training, level of non-accounting ownership</td>
<td>Job shop</td>
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Table 8. Variables that influence the attainment of stage (Krumwiede, 1998).
usually involve more commitment from plant managers, engineers, and other operation management people than from management accountants. Some organizations may decide to go beyond the AA and ACA levels and implement ABC. In such a case, the innovation becomes more administrative than technical. ABC, like other management accounting innovations, is classified as an administrative innovation because it leads to new administrative procedures, policies, and organizational structures (Clark et al., 1999; Dunk, 1989). Since the implementation of ABC affects the management accounting system and the organizational structure, the involvement from management accountants becomes more essential at that level.

Several theories of organizational innovation have emerged during the last 20 years. Poole & Van de Ven (1989) insisted that no single theory encompasses the complexity and diversity of innovation processes. Downs & Mohr (1976) and Damanpour (1987, 1991) emphasized that no reliable theory of organizational innovation had yet been developed because of the instability in research findings.

Three models have been developed to better understand the diffusion process for an innovation in an organization:

1) The mechanistic and organic organizations model
2) The dual-core model
3) The ambidextrous model

These models rely mainly on distinctions between mechanistic and organic organizations, administrative and technical innovations, and initiation and implementation stages of innovations. Damanpour (1991) found strong support for the mechanistic and organic model and the dual-core model but little support for the ambidextrous model.

### 3.2.3. Mechanistic and Organic Organizations

Organizations can be classified into two groups according to the way they adapt to technological and commercial change: mechanistic and organic organizations. This model suggests that the adoption of innovations is easier in organic organizations while it is more difficult in mechanistic organizations (Burns & Stalker, 1961). Organic organizations have higher levels of specialization, horizontal differentiation, professionalism, internal and external communication, and lower levels of formalization, centralization, and vertical differentiation in comparison to mechanistic organizations. Table 9 summarizes the characteristics of these organizations. Specialization represents the presence of different specialties in an organization; horizontal differentiation, the extent to which the organization is divided into different units and professionalism, the level of education and experience of organizational members. Formalization reflects the extent to which following rules and procedures are important in the organization while centralization represents the extent to which the decision process pertaining to the management of divisions or subsidiaries is centralized. Vertical differentiation is the number of levels in an organization’s hierarchy.

The mechanistic and organic model suggests that the adoption and implementation of innovation are facilitated in organizations that have organic rather than mechanistic characteristics. Damanpour (1991) gathered data from several organizational innovation studies and compared the attributes of organic organizations with organizational characteristics that favour innovation. The results of this analysis were consistent with the mechanistic and organic model except for vertical differentiation. However, results for vertical differentiation were consistent with the model for manufacturing organizations.

<table>
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<th>Table 9. Mechanistic and organic organizations.</th>
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<tr>
<td>Specialization</td>
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<td>Horizontal differentiation</td>
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<td>Professionalism</td>
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<td>Communication</td>
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<td>Formalization</td>
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<tr>
<td>Centralization</td>
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<tr>
<td>Vertical differentiation</td>
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### 3.2.4. The Dual-Core Model

The dual-core model rests on the distinction between administrative and technical innovations (Daft, 1978; Daft & Becker, 1978; Evan, 1966). In this model, mechanistic characteristics facilitate the implementation of administrative innovations. Technical innovations are easier to implement in organic organizations. Daft (1978), Daft & Becker (1978), Kimberly & Evanisko (1981), and Damanpour (1991) found results that are consistent with this model’s propositions. Table 10 summarizes the features of the dual-core model. MacDonald & Richardson (2005) have extended this model and applied it to management accounting innovations.

ABC has characteristics of both technical and administrative innovations. Gosselin (1997) suggests that AA and ACA are technical innovations because they
mainly have an impact on how products are manufactured and services are rendered. ABC, like other management accounting innovations, is classified as an administrative innovation because it leads to new administrative procedures, policies, and organizational structures (Dunk, 1989). Gosselin (1997) hypothesized that organizations with organic characteristics would more easily adopt AA and ACA while mechanistic organizations would prefer ABC. The results of his study are consistent with the dual-core model.

3.2.5. The Ambidextrous Model

The ambidextrous model is based on the distinctions between mechanistic and organic organizations and the initiation and implementation stages of innovations (Duncan, 1976). The initiation stage consists of all the actions leading to the decision to adopt the innovation such as problem perception, information gathering, attitude formation and evaluation and resource attainment (Damanpour, 1991). The implementation stage comprises all activities between the adoption and the routinization of the innovation (Rogers, 2003). Table 11 outlines the features of this model. According to this theory, the initiation of innovations is easier in organic organizations while implementation is facilitated in mechanistic organizations.

Damanpour (1991) showed that the research in this area has not produced findings in the direction of the theory’s propositions except for professionalism. In the diffusion process for an innovation like ABC, Gosselin (1997) suggested that AA and ACA may be considered as being two steps in the initiation stage. AA and ACA are essential to implement ABC because they supply key information for the implementation. ABC may be included in the implementation stage. Some organizations that adopted ABC may be tempted to stop the implementation process at one of those two levels. Organic organizations may find AA and ACA to be better suited to their needs. Mechanistic organizations may prefer, once they have adopted ABC, to pursue the implementation of ABC all the way. Consistent with the ambidextrous model, Gosselin (1997) proposed that organic organizations that adopted ABC may limit the innovation process to the AA or ACA level while mechanistic organizations would pursue ABC. The results of his study were partly consistent with the ambidextrous model.

In Gosselin (1997), the innovation process for ABC was divided into four distinctive stages (Gerwin, 1988; Hage, 1980):

1) Adoption
2) Preparation
3) Implementation
4) Routinization

Adoption is the first level in the innovation process. During this stage, the need for change is recognized and the organization makes the decision to adopt or reject the innovation. This stage is characterized by a high level of uncertainty about the innovation’s returns. Several contextual factors may affect the organization’s decision to adopt an innovation. Institutional and competitive pressures (Abrahamson & Rosenkopf, 1993) may also influence managers in their decision process. Once the decision to adopt the innovation has been made, the organization has to develop the infrastructure needed to support the innovation. This represents the preparation level. If the organization has adopted ABC, several key actions will have to be completed. First, managers and accountants will be trained, a consulting firm, if necessary, will be selected and computer software will be purchased or developed in-house. Second, accountants and managers will have to identify the activities and actions to be carried out to convert and support the conversion of materials, labour, and overhead into outputs, determine the activity cost pools in which activity costs will have to be collected and select the cost drivers that will be used to allocate activity costs to specific cost objects. Gosselin (1997) suggests that the preparation phase of ABC comprises AA and ACA, which he considered the first two levels of AM. During the preparation process, the organization has the opportunity to re-examine the decision made during the adoption stage (Leonard-Barton, 1988). Rogers (2003) mentioned that innovations are not necessarily invariant and that they can be adapted during the innovation process. This concept of re-invention is defined as follows in (Rogers, 2003, p. 16): “The degree to which an innovation is changed or modified by a user in the process of its adoption and implementation.”
Re-invention may occur during the preparation stage as well as during the implementation. This phenomenon has been observed throughout the last 15 years with ABC (Cobb et al., 1992; Gosselin, 1997; Horngren, 1990; Innes et al., 2000; Madison & Power, 1993; Malmi, 1999; Nanni et al., 1992). From the innovation perspective, these organizations may have decided to re-invent ABC and limit themselves to the AA, AM, ABM, or CDA that are previous stages in the implementation of ABC. This situation may be explained by the complexity of ABC implementation or by cost–benefit analysis of implementing ABC (Kaplan & Anderson, 2004). The implementation process consists of introducing the innovation and evaluating its impact. This stage also includes the management of longer-term organizational changes in terms of organizational structure, inter-functional relationships, and job design and communication patterns (Robey, 1987). The impact of the new system on these key organizational variables should be anticipated and managed as part of the implementation process. During the last stage, routinization, the innovation becomes a part of daily practices.

Gosselin (1997), as noted in the first section, distinguishes three levels of AM (AA, cost driver analysis, and ABC (pilot and full)). Gosselin (1997) examined the influence of several factors at these three stages of the implementation process of ABC. He found a significant association between competitive strategy and the adoption of an AM approach. Prospectors are more likely to adopt one of the three AM approaches, followed by analyzers and defenders. Among firms that adopted an AM approach, Gosselin found a significant positive association between vertical differentiation and the adoption of ABC. Among firms that adopted ABC, a significant positive association was found between formalization and centralization and the implementation of ABC. Thus, organizations that adopt ABC tend more to implement ABC when they are centralized. Decentralized organizations have the opportunity to adapt the innovation and stop the intra-organizational diffusion process. Ultimately, the results of the study showed that organizations that adopt and finally implement ABC are bureaucracies. Baird et al. (2004) also found evidence that support the results of Gosselin (1997). They demonstrated that there was an association between the stages of AM and size, decision usefulness of cost information, and culture dimensions of innovation.

The few studies on innovations that have been completed in management accounting have shown that the theories and frameworks developed in the innovation literature may apply to management accounting. These theories need to be adapted (McDonald & Richardson, 2005) and also have to be tested in the context of innovations that have not only been implemented but also adopted and abandoned.

The research on contextual and organizational factors and the adoption and implementation of ABC has shown that some factors influence the diffusion process for ABC. The studies of Anderson (1995), Gosselin (1997), Krumwiede (1998), and Baird et al. (2004) have demonstrated that researchers need to distinguish between the stages in the implementation process and the nature of the ABC approach that is being adopted and implemented.

3.3. Determinants of the Success of ABC Implementation

Shields’s (1995) was the first study that aimed at identifying the factors that can be associated with the success of ABC implementation. This survey study was completed with 143 firms that were known to have adopted ABC. The factors considered in the study were those identified in Shields & Young (1989). The results showed that top management support, link to performance evaluation and compensation, training, accounting ownership, and adequacy of resources are associated with the perceived success of implementation. The measurement of the success of the implementation was based on the scores from 1 (extremely unsuccessful) to 7 (extremely successful) from the following two statements related to the success of the implementation. There were two major weaknesses in this study. First, the stage of implementation was not considered. Therefore, projects at the initiation stage were compared with more advanced projects. Second, the measurement of the perceived success of the implementation was primitive. Swenson (1995) examined the level of financial and operating managers’ satisfaction with ABC in 25 organizations identified as ABC users in professional journals. The results of this study showed that the satisfaction was higher with ABC in comparison to prior cost system. Since the respondents were managers in charge with the ABC projects, these results are not necessarily reliable.

The measurement of the success of ABC implementation was refined by Foster & Swenson (1997). They grouped into four categories the measures of success:

1. Use of ABC information in decision making
2. Decisions and actions taken with ABC information
3. Perceived financial improvements from ABC implementation
4. Management evaluations of overall ABC success
Foster & Swenson (1997) conducted their investigation in 166 ABC implementation sites among 132 different companies. Their results varied depending on the measure of success that was used. The use of ABC information was the measure of success that yielded the highest $r^2$ in a regression with the five factors that Shields (1995) had identified as determinants of ABC implementation: top management support, training, link to performance evaluation, link to quality, and resource adequacy. None of these factors were significant in the four models and in a fifth one that included as independent variables the four measures of success combined. The refinement of the measure of success of ABC implementation and the results were not conclusive.

Another study by McGowan & Klammer (1997) attempted to examine the association between employee satisfaction and contextual and organisational factors of ABC implementation. They found that employee satisfaction with ABC was associated with most of the factors identified in Shield & Young (1989) and Shields (1995): top management support, involvement, link to performance evaluation and training. The major limitation of this research was the measurement of success that was limited to one dimension: the perceived degree of satisfaction with the implementation of ABC. This concept was measured on a five-point scale from strongly unfavourable to strongly favourable. There were no distinctions in this study on the type of ABC project and its stage of implementation.

Finally, Anderson & Young (1999) attempted to evaluate the impact of contextual and process factors on the success of ABC implementations in two manufacturing firms. The objective was to link empirical studies of correlates of ABC implementation with process theories of ABC implementation and provide model stability across number of dimensions. The overall evaluation of ABC is influenced by the reward environment and the quality of the existing information system. The accuracy of the ABC information is related to adequacy of resources devoted to the ABC project and if the respondent felt need for change. The use of ABC data is related to top management and local union support, adequacy of resources devoted to the project, respondent commitment to organization, if the respondent felt the need for change, likelihood of employee layoffs and rewards environment. The model was stable across firms and respondents, but was sensitive to the maturity of the ABC system, again confirming the need to distinguish between the stages in the implementation process.

The studies on the impact of contextual factors on the success of ABC have provided empirical evidence that some factors are helping to improve the success of the ABC implementation process. Even though, the measurement of ABC implementation success is not trouble free. These studies have essentially relied on managers’ perception. In general, managers were asked to evaluate several items on a scale from 1 (strongly disagree) to 5 (strongly agree). As a result, the measures bear some biases that are difficult to evaluate. In general, the perceived benefits of ABC are always very high. Table 12 shows the different measures used to evaluate the success of ABC. Anderson et al. (2002) completed a study on the performance of ABC implementation teams.

Measuring the success of ABC implementation is not a simple task. The quality of the measurement of success improved rapidly from Shields (1995) to Anderson & Young (1999). However, the results of the studies on the success of ABC implementations have not been persuasive. This outcome may explain why researchers have stopped attempting to find answers to research questions on the success of ABC implementations.

### 4. Organizational and Social Consequences of ABC

Almost 20 years after the emergence of ABC, many wonder if this important innovation was just a fad or

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<td><strong>Measurement of success</strong></td>
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<td>Shields (1995)</td>
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<td>Swenson (1995)</td>
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<td>McGowan &amp; Klammer (1997)</td>
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<td>Foster &amp; Swenson (1997)</td>
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<td>Anderson &amp; Young (1999)</td>
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if it is still relevant today. Whatever is the answer to this question, ABC has had a strong influence on cost accounting and management accounting. This section includes a discussion on the consequences of the emergence of ABC on organizational performance, management accounting, and management accountants.

4.1. Impact of ABC on Organizational Performance

Many practitioners and academics have suggested that the implementation of ABC has a favourable influence on the financial performance of organizations. However, the amount of empirical evidence that confirms this proposition is very limited. Kennedy & Affleck-Graves (2001) attempted to explain the “ABC paradox” and to show that the choice of a management accounting system, such as ABC, may have a significant impact on firm value. Specifically, for a sample of UK firms, they showed that firms adopting ABC outperformed matched non-ABC firms by approximately 27% over the 3 years beginning on January 1 of the year in which the ABC techniques was first implemented. They considered their results robust for different matching criteria and for both accounting and market-based measures of performance. Further analysis suggests that ABC adds to firm value through better cost controls and asset utilization, coupled with greater use of financial leverage. Superior subsequent performance suggests that the adopting firms made a rational value-enhancing choice when adopting ABC. Consequently, their results provide support for Malmi’s (1999) evidence in favour of the efficient choice hypothesis. Kennedy & Affleck-Graves (2001) claimed that their results do not clarify Gosselin’s (1997) ABC paradox, but rather accentuate it: If ABC-adopting firms have better stock performance in addition to the other benefits cited in the literature, then why have more firms not implemented the approach?

Another way to attempt to evaluate the impact of ABC on performance is to examine the stock market effect of the announcement of the adoption of an ABC system. This is the task that completed Gordon & Sylvester (1999). Their investigation showed that the announcement of ABC adoption had no effect, positive or negative, on stock price of the adopting firms. Ittner et al. (2002) investigated the improvement in financial performance that is associated with the use of ABC and the conditions under which such improvement is achieved. They found that firms have a net improvement in financial performance when ABC is used concurrently with strategic business initiatives such as JIT or TQM, which is greater than that obtained from the use of those without ABC. There is a positive association between ABC and improvement in ROI when implemented in complex and diverse firms, in environments where costs are relatively important, and when there are limited numbers of intra-company transactions to constrain benefits. There is an indication that other enabling conditions (information technology sophistication, absence of excess capacity, and competitive environment) affect the efficacy of ABC. Cagwin et al. (2002) also show that previously used measures of success, satisfaction with ABC, and financial benefit obtained from ABC (Krumwiede, 1998; Shields, 1995; Swenson, 1995) are predictors of improvement in financial performance.

Ittner et al. (2002) have attempted to evaluate the association between the extensive use of ABC and plant-level operational and financial performance using a large sample of manufacturing firms that responded to a survey in 1997. They indicated that they have found a positive, but “modest,” association between the extensive use of ABC and manufacturing performance. Three variables were used to measure manufacturing performance: return on net plant assets, improvements in cycle time, and quality and cost reductions associated with these improvements. Ittner et al. have not been able to evaluate if these results are the consequences of the AA or CDA or are the outcome of decisions based on ABC. They did not find a significant association between ABC and return on investment, a measure of financial performance.

After almost 20 yr of presence of ABC, there is still not much empirical evidence that the adoption and implementation of ABC has an impact on performance. There is a need to better examine the relationships between contextual and organizational factors, success of ABC implementation and performance.

4.2. ABC and Fads and Fashions in Management Accounting

Theories of bandwagons suggest that organizations adopt or reject an innovation because of bandwagon pressures by organizations that have already adopted or rejected this innovation (Abrahamson & Rosenkopf, 1993). The level of bandwagon pressures is influenced by the level of ambiguity surrounding the organizations’ assessments of the innovations’ efficiency and returns and also by institutional and competitive pressures (Abrahamson & Rosenkopf, 1993). Thus, bandwagon cycles may cause organizations to adopt inefficient innovations but may also lead organizations to reject profitable innovations because of bandwagon pressures of rejection (counter-bandwagon). Abrahamson (1991) described two sets of
theories to explain the bandwagon process: rational efficiency theories and fad theories.

Rational efficiency theories are based on the assessment made by managers about the efficiency of an innovation. Some rational-efficiency theorists assume that non-adopters are informed instantaneously about innovation’s technical efficiency and returns. Others consider that as the number of adopters increase, more information about the innovation’s technical efficiency and returns are made available to non-adopters. This access to this information would cause the innovation costs to decrease and returns to increase. This would lead to a bandwagon cycle that would increase the diffusion rate of the innovation. Abrahamson & Rosenkopf (1993) suggested that rational-efficiency theories have two major limitations. First, in many groups of competitors, information about innovation’s technical efficiency and returns may not affect potential adopters’ decisions. Abrahamson & Rosenkopf (1993) argued that this influence will occur only if

1. information about the technical efficiency and the returns of an innovation is readily available to potential adopters;
2. channels through which this information may flow exist;
3. early adopters agree to diffuse the information to potential adopters; and
4. the information may influence potential adopters’ decisions to adopt the innovation.

Thus, the bandwagon cycles would only take place if all of these four conditions are met. This might not be the case in many circumstances. Second, rational-efficiency theories sustain a pro-innovation bias. They cannot be used to explain the rejection of efficient innovations and the adoption of inefficient innovations. Therefore, in this chapter, the focus is on the next set of bandwagon theories, fad theories.

Fad theories suggest that organizations adopt innovations because other organizations have adopted it rather than on the basis of an evaluation of the innovation’s efficiency and returns. Institutional bandwagon pressures and competitive bandwagon pressures may cause this behaviour. Institutional bandwagon pressures may occur when non-adopters fear that they will appear abnormal and then lose legitimacy with their stakeholders. This threat would lead them to adopt an innovation even though they have not assessed its efficiency and returns. Competitive bandwagon pressures arise from the menace of lost competitive advantage. Risk adverse managers would prefer to adopt an innovation, even though it was not well appraised, to avoid potential losses of competitive advantage. The threat of a lost competitive advantage would outweigh the benefits of an equally competitive advantage in managers’ utility schema. Adopting an innovation similar to the competitors’ would prevent managers from being perceived as incompetent. If the returns were high, they would look as if they were good managers. If the returns were low, they would look no worse than other managers in the industry.

Bandwagon pressures may affect the diffusion process for ABC in two distinct manner. On one hand, institutional pressures such as those created by consultants and professional accounting associations may force managers to adopt and implement ABC. Furthermore, because of the high level of ambiguity surrounding the technical efficiency and returns of ABC, firms and strategic business units within an industry in which a large number of firms adopted ABC, may feel more pressures from competitors to adopt and implement ABC. On the other hand, these competitive pressures may cause counter-bandwagon effects, since managers within an industry may not feel pressures to adopt ABC if competitors tend to reject ABC. Bain & Company (2005) recently showed that US managers consider ABM as one of the management tool with a satisfaction level below the overall mean. Consequently, since managers have evaluated that ABC yielded low returns, bandwagon pressures to reject ABC could be high and pressures to adopt it would be low.

Gosselin (1999) examined the diffusion of ABC from a bandwagon perspective. The results of this study showed that pressures from competitors, suppliers, and customers affect the decision to adopt or reject ABC. Malmi (1999) also examined the diffusion process of ABC in Finland. The purpose of his research was to explain what drives innovation diffusion of ABC in Finland during its various phases. Malmi performed four surveys, interviewed consultants, academics, and software company employees. He concluded that efficient choice may explain the earliest adoptions, whereas fashion-setting organizations exert considerable influence in the take-off stage. Later on, the influence of fashion-setting organizations diminishes. Further diffusion is explained by mimetic behaviour and efficient choice. The results in the initial phase indicate that both a high proportion of exports and perceived change in competition are correlated with ABC adoption. Also, high product diversity was found to be positively correlated with ABC adoption. Early adopters appear to have been smaller in size. The largest firms and units have not been the first to adopt ABC in Finland.
There has not yet been enough empirical research on fads and fashions in management accounting that would allow to better understand the diffusion process of management accounting innovations from a fads and fashions perspective.

4.3. Relevance Recovery of Management Accounting

ABC emerged in the 1980s just after Hopwood (1983) and Kaplan (1984a, 1984b) had urged researchers to examine how management accounting systems were designed and used within real organizations and Johnson & Kaplan (1987) had documented the lost relevance of management accounting techniques. ABC was a response to this questioning. It became one of the leading topics along with other new techniques such as target costing or life-cycle costing that called for the renewal of management accounting (Bromwich & Bhimani, 1989, 1994). This is probably the most important consequence of ABC. Therefore, ABC has played a key role in the relevance recovery of management accounting.

4.4. From Manufacturing Cost Accounting to Cost Management

Even though, all the surveys examined earlier in this chapter showed that the implementation rates for ABC have been limited, ABC imposed a new cost accounting logic that is, in many respects, responsible for the emergence of other techniques such as customer accounting and customer profit analysis. Before the emergence of ABC in the 1980s, the main objective of cost accounting techniques was essentially to determine product costs in a manufacturing environment for inventory valuation in accordance with generally accepted accounting principles (GAAP). After the development of ABC, the use of cost accounting techniques was extended to service, not-for-profit, and public sector organizations and also to different cost objects like customers, projects, activities, and internal services. ABC and other costing techniques like target costing and their applications to non-manufacturing settings provided a context that led to a shift from cost accounting to cost management.

4.5. New Cost Accounting (Management) Logic

The concepts inherent to ABC like cost objects, activities and cost drivers allowed the emergence of a new cost accounting logic that bears several features. First, the concept of cost objects has enabled management accountants to broaden the scope of cost accounting to new cost objects such as services, customers, customized services, product lines, internal services, and projects. This change may have occurred despite the emergence of ABC but the interest for ABC accelerated this phenomenon. Second, while traditional accounting systems emphasized the classification of costs by categories of expenses, ABC requires this classification to be activity oriented. Thus, accounting system should enable managers to know why costs were incurred. This need may be one of the reasons why ABC is difficult to implement. Most accounting systems do not allow classifying expenses on an activity basis. Third, management accountants concluded after having experimented ABC for a few years that cost drivers and cost driver rates were key information for cost management. Volume driver rates used traditionally do not provide as much relevant information as cost driver rates do for cost management purposes. The identification of appropriate cost drivers requires managers and accountants to review processes and activities. This is essentially the ABM or AM piece of ABC. Fourth, the Cooper & Kaplan (1988) cost hierarchy provided a simple but efficient tool to explain to managers and students the influence of cost behaviour. However, despite the fact that ABC requires a paradigm shift in terms of cost classification, cost behaviour, activity definition, and cost driver management, ABC remains an extension of the traditional full costing rationale.

4.6. ABC and the Role of Management Accountants

The perception of management accountants by other managers has been influenced by the emergence of ABC. Friedman & Lyne (1997) suggested that ABC has improved the image of accountants. While traditionally management accountants were perceived to be focusing only on accounting procedures and techniques, the ABC literature and ABC projects have shown that management accountants need also to be concerned by processes, activities, and cost drivers to complete the implementation of ABC. The success of ABC implementations requires the creation of multifunctional teams in which accountants have to work with operation and marketing people. The fact that accountants need to work with other managers to complete ABC implementations provides a setting for a change in the perception of accountants by other managers.

4.7. Consulting Activities and ABC

Another important consequence of the emergence of ABC and ABM in the 1990s is the development of an important industry devoted to helping organizations to implement and use information generated by ABC models. This industry has had a strong influence on the diffusion process for ABC. The presence of consultants usually accelerates the diffusion of an innovation but can also lead, after this initial period, to
the re-invention of the innovation (Gosselin, 1997; Rogers, 2003) or to the dissatisfaction of organizations and the rejection of the innovation like ABC (Innes et al., 2000).

4.8. Organizational Learning and ABC

One key feature of ABC is that it not only requires accountants and managers to learn about cost accounting techniques like ABC but also have more knowledge about what is going on in their organizations (Argyris & Kaplan, 1994). This dimension has not been considered in many ABC implementation projects. Top management expected that managers would be able to develop an ABC model and install it within a very short period of time. Almost 20 years after the inception of ABC, it is clear that accountants, managers, and organizations need to have enough time to implement new knowledge. This may be one explanation for the large number of ABC projects that have been abandoned. Researchers could investigate the influence of organizational learning on the diffusion process for innovations in management accounting.

5. Conclusion

ABC is considered one of the most important innovation in management accounting of the twentieth century. Although ABC is very attractive from a conceptual point of view and it has been included in all management accounting textbooks and most business school curriculum, surveys have shown that it has not been considered by the majority of organizations and that it has been abandoned by many organizations that had sometimes in the 1990s decided to adopt and implement it. Survey studies have also demonstrated that there is, in practice, some confusion about what exactly ABC is and that it is very difficult to investigate on the implementation of ABC without, at first, clarifying the definition of ABC with managers. This confusion is probably, with other methodological difficulties, the explanation for the decrease in the number of surveys on ABC since 2000.

Several factors influence the adoption and the implementation of ABC. A number of studies have shown that factors such as size, strategy, environmental uncertainty, and product diversity affect the decision to implement ABC. More refined investigations, based on the innovation literature, have demonstrated that the impact of these factors is different according to the stages of the implementation. Therefore, the need to understand at what stage an ABC project becomes essential to study the factors that influence the implementation of ABC and its success.

Research on the impact of ABC on performance has also shown that the implementation of ABC does not clearly improve performance and firm value. Despite all these mixed results, most academics and practitioners will agree that ABC, since its emergence, had an important influence on the development and the renewal of management accounting and on the role of management accountants.

After all, the ABC paradox remains (Gosselin, 1997): Regardless of the inclusion of ABC in most management accounting textbooks, the large number of ABC seminars, the consulting activities, the ABC softwares, and the large number of articles published on ABC, why firms are not implementing ABC and furthermore why some that have adopted ABC, have decided to abandon it.

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A Review of Activity-Based Costing


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