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# Activity-based costing diffusion across organizations: an exploratory empirical analysis of Finnish firms

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## Abstract

This study aims to explain what drives innovation diffusion in management accounting during its various phases. Based on Abrahamson [Abrahamson, E. (1991). Managerial fads and fashions: the diffusion and rejection of innovations. *Academy of Management Review*, 16, 586–612], four perspectives with potential to explain the diffusion of accounting innovations are identified: the efficient-choice, forced selection, fad and fashion perspectives. The diffusion of activity-based costing (ABC) in Finland provides an empirical context to study how these four perspectives apply to management accounting innovation. Data comes from a set of four surveys (total  $n=490$ , response rate 39.5%, 114 ABC cases), from interviews of consultants, academics and software industry employees, and from archival sources. The study proposes that the driving forces behind innovation diffusion in management accounting change over the course of diffusion. 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 both by mimetic behaviour and efficient-choice. © 1999 Elsevier Science Ltd. All rights reserved.

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## 1. Introduction

Many scholars in management, economics and related fields share the goal of trying to explain why organizations behave as they do. Although a large variety of issues has attracted academic interest, change and development in organizations have been among the most difficult to explain, let alone manage (Van de Ven & Poole, 1995). In the field of accounting, issues such as why whole industries change accounting procedures when such changes are costly and have no beneficial effect on stock price (Ball, 1972; Kaplan & Roll, 1972; Watts & Zimmerman, 1986), have stimulated research for some time. Changes in accounting

systems for managerial decision-making and control have been problematized only recently (Hopwood, 1987; Preston, Cooper & Coombs, 1992), and the literature is still in its infancy.

Many changes in organizations are direct consequences of the diffusion of innovations. Although management accounting history is not rich in such innovations (Johnson & Kaplan, 1987), the recent spread of activity-based costing (ABC) provides an interesting opportunity to study the mechanisms of such diffusion<sup>1</sup>. Studies on the spread of ABC among organizations might

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<sup>1</sup> Innovation is defined in this paper as the successful introduction of ideas, perceived as new, into a given social system (Bradford & Kent, 1977). Hence, the controversy over the novelty of ABC is not addressed in this paper. Diffusion is the process whereby the innovation is spread or disseminated (Bjornenak, 1997).

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also enrich our understanding of the motivation for change at the level of a single firm.

This paper aims to explain how and why management accounting innovations diffuse among organizations. Tentative propositions concerning the driving forces involved are drawn from recent literature on innovation diffusion, organizational change and management accounting. Empirical evidence on ABC diffusion is also used. The study is explorative in nature, building on theoretical perspectives outlined by Abrahamson (1991). The elaboration of Abrahamson's framework is conducted in a particular empirical setting, a sort of national "laboratory". We propose that the driving force behind diffusion changes during the process. Efficient choice may best 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, and further diffusion is explained both by mimetic behavior and efficient choice.

The paper makes a contribution to management accounting literature for the following reasons. First, it shows that the early diffusion of ABC follows a temporal trajectory fairly similar to most other innovations. Second, and most importantly, it suggests that currently dominant economic rationales — and also those based on power and politics — are inappropriate alone to explain change in management accounting and diffusion among organizations. As management fashions and fads seem to play an important role in certain phases of diffusion, a dynamic model explaining management accounting innovation among organizations is proposed. Third, the research design is innovative. The study approaches accounting change from the society level, beyond single organizations, and builds partly on empirical evidence collected from the supply side (consultants, IT-vendors, academics, publications in the mass-media).

The paper has five sections. The first section presents a literature review. The second describes the theoretical framework which aids data collection. The third discusses the research methods employed. The fourth presents the resulting dynamic model of management accounting innovation among organizations and the final section a discussion and suggestions for further research.

## 2. Literature

Few management accounting scholars have regarded the antecedents or motives for accounting changes in organizations as problematic. As Hopwood (1987, pp. 209–210) observed:

“the majority of conventional discussions of accounting change see it in terms of organizational reform and improvement. Accounting is changed in order to get better. ... Analysis, inquiry and experimental learning together are seen as having resulted in the increasing realization of an accounting potential.”

Consider, for example, studies focusing on the information system choice in behavioral accounting research (see e.g. Waller, 1995; Hogart, 1993). The accounting system is assumed to produce information for the decision-maker, and a system producing information leading to decisions or actions that maximize decision-makers expected utility is therefore selected. If a proposed system leads to better decisions than the existing system, and the expected benefits from the proposed system exceed the cost of its implementation, the new system is adopted (Feltham, 1972; Demski, 1980). Accounting change is also seen as a reform where innovations are created and adopted to bring practice into line with advances in manufacturing technology (Anderson, 1995; Johnson & Kaplan, 1987; Kaplan, 1985). Except for those studies that find the origins of accounting in the social conflicts and power struggles inside organizations (i.e. using dialectics as a frame of reference; Cooper, 1980; Covaleski & Dirsmith, 1988; Hopper, Cooper, Lowe, Capps & Mouritsen, 1986; Hopper & Armstrong, 1991; Tinker, Merino & Neimark, 1982), the literature explains development and change via teleology; the organization's goals are the cause for action.<sup>2</sup>

The teleological approach identifies the cause of change within an organization. This is somewhat

<sup>2</sup> The terms teleology and dialectics are used here in their broadest sense (see Van de Ven & Poole, 1995), whereas in accounting literature dialectics usually refers to radical critique (see Puxty, 1993; Hopper, Storey & Willmott, 1987; Burrell & Morgan, 1979).

unfortunate, since focusing on the internal world of organizations may obscure simultaneous society-wide forces. Although calls to extend the analysis of change and innovation beyond the internal world of enterprises have been made (Bjornenak, 1994, 1997; Hopwood, 1987; Miller & O'Leary, 1987, 1990), the effect on contemporary management accounting research has been minor. The current interest in (new) institutionalism among accounting scholars (Carruthers, 1995; Mouritsen, 1994; Scapens, 1994; Scapens, Burns & Ezzamel, 1996) indicates some promise in this direction.

Questions of how and why innovations diffuse among organizations have been addressed in the innovation diffusion literature (Rogers, 1962, 1983). This literature has focused on three questions (Rogers, 1983; Wolfe, 1994). First, what is the pattern of diffusion through a population of potential adopter organizations (diffusion of innovation research, DI)? Second, what determines organizational innovativeness (organizational innovativeness research, OI)? Third, what are the processes organizations go through in implementing innovations (process theory research, PT)? DI and OI literature are discussed below as they appear relevant to this study.

DI research typically proceeds by attempting to fit a mathematical model of the diffusion process to empirical data describing the diffusion of innovation over time (Mahajan & Peterson, 1985). The models are usually fairly simple; simplicity is admired in constructing models for predicting the future pattern of innovation. Predicting innovation rates has attracted interest especially among those whose success is somehow related to the success of innovations. Changes in diffusion rates over time typically follow S-shaped patterns generally described with equations for logistic curves (Abrahamson, 1991; Rogers, 1983). Economists have traditionally explained the S-shape of the curve in terms of the shifting balance of supply and demand, which is a function of the investment required to adopt a technology and the profitability of that technology (Attewell, 1992; Freeman, 1982; von Hippel, 1988; Jowett, 1986; Mansfield, 1968, 1977). The steep "take off" of the S-curve is usually attributed to a substantial drop

in the price of the new technology, causing a surge in demand (Attewell, 1992).

Sociologists, in turn, have relied on social contagion to explain the S-shape. Early studies stressed the flow of information and the importance of contact between the originators of the technology and potential users (Coleman, Katz & Menzel, 1966). The basic assumption was that it took different lengths of time for an innovation to reach different potential users, resulting in the S-curve. Later studies have assumed that an innovation is simultaneously known to all potential adopters. Rogers (1983) argued the S-curve was a normal outcome of an increasing number of adoptions generating more information on innovation, which in turn reduces the uncertainty of innovation over time. Burt (1987), in turn, suggested that the shape of the S-curve depends on the method, cohesion or structural equivalence used to overcome the uncertainty of innovation.

DI research focuses on innovation at the aggregate level. It sheds no light on the individual firm's adoption decision and hence fails to provide a behavioral explanation of why some firms are quicker to adopt than others (Jensen, 1982). OI research has attempted to discover the determinants of an organization's innovativeness. Early adopters are contrasted with late adopters to generate a list of factors related to early adoption. Most studies have relied on a variance research model (Mohr, 1982) such as the regression model and on survey data collection. Firm size, profitability of an innovation, innovation champions inside the firm, production type, degree of centralization, organizational slack, proportion of specialists, functional differentiation and intensity of competition have been linked to adoption (e.g. Abernathy & Utterback, 1978; Aiken & Hage, 1971; Davies, 1979; von Hippel, 1988; Kimberly & Evansko, 1981; Rothwell & Zegveld, 1985; Tornatzky & Fleischer, 1990). Factors that have been related to early adoption of ABC include firm size (Ask & Ax, 1992; Bright, Davies, Downes & Sweeting, 1992; Drury & Tayles, 1994; Innes & Mitchell, 1995), product diversity (Bjornenak, 1994; Malmi, 1996) and a large share of indirect costs relative to total costs (Bjornenak, 1997). Although OI studies provide some indication of

which organizations might first adopt innovations, researchers have seldom addressed aggregate diffusion among organizations based on knowledge of organizational innovativeness (but see Jensen, 1982; Chatterjee & Eliashberg, 1990). In other words, OI studies have been of limited help in trying to explain reasons for most innovations following the S-shape pattern.

Both DI and OI studies have been criticized for several reasons. Brown (1981) claims diffusion studies place too much emphasis on the demand-side and not enough on the supply-side institutions of diffusion. This seems especially relevant when managerial innovations such as ABC are considered, since consulting firms, business schools and mass-media are actively involved in promoting managerial innovations. Another forceful critique against diffusion research is its pro-innovation bias (Downs & Mohr, 1976; Kimberly, 1981; Rogers, 1983; Van de Ven, 1986). The pro-innovation bias implies that an innovation should be diffused and adopted by all members of the social system, that it should be diffused more rapidly, and that the innovation should be neither re-invented nor rejected (Rogers, 1983, p. 92). Given these biases, it makes little sense to ask why companies adopt or reject innovations; innovations are adopted when they benefit organizations and rejected when they do not. Rogers (1983, p. 98) urges us, however, to increase our understanding of the motivations for adopting innovation and notes that such “why” questions about adopting an innovation have rarely been probed by diffusion researchers. This study poses one of these “why” questions.

### **3. Alternative explanations for the innovation diffusion in management accounting**

Abrahamson (1991) argued that the dominant perspective in diffusion-of-innovation literature reinforces pro-innovation biases because it relies on a model of choice in which adopters make independent, rational choices guided by goals of technical efficiency. The efficient-choice perspective is based on two major assumptions (March, 1978): (a) organizations can freely and independently

choose to adopt an administrative technology, and (b) organizations are relatively certain about their goals and their assessments of how efficient technologies will be in attaining these goals. Abrahamson develops counter-assumptions to reject the efficient-choice perspective. If non-adopting organizations (regulatory bodies and consulting firms) influence the choices, we may ask how free and independent are the decisions. Similarly, by assuming that organizations have unclear goals and high uncertainty about the technical efficiency of administrative technologies, we may reject the possibility of efficient choices. As organizations are not able to assess the technical efficiency of administrative technologies, organizations imitate other organizations (DiMaggio & Powell, 1983). Abrahamson identified four perspectives to explain the diffusion and rejection of administrative technologies; these are efficient-choice, forced selection, fad and fashion, which are summarized in Table 1. Abrahamson’s typology is used as a frame of reference in this study, because it addresses the issues not fully covered in earlier diffusion studies and conventional discussions on accounting change. In other words, it regards the limited attention to the influence of supply side organizations on adoption decisions and the reliance on rationality, or teleology, as the sole explanation for adoption.

Theories attributing innovation diffusion to the efficient-choice perspective build on the notion of performance gaps. Performance gaps are discrepancies between an organization’s goals and what it can attain (Abrahamson, 1991, p. 592). Environmental changes create similar performance gaps across organizations. Organizations with similar goals tend to react to performance gaps by adopting the same efficient administrative technology. Organizations which do not experience these gaps, or have different goals, will not adopt these technologies. Innovations are diffused when they help to reduce performance gaps created by environmental changes (cf. accounting lag, see also e.g. Williamson, 1970). According to theories based on the efficient-choice perspective, organizations determine the diffusion and rejection of innovations themselves; their behavior is, therefore, not imitative.

Table 1  
Theoretical perspectives explaining the diffusion and rejection of administrative technologies (source: Abrahamson, 1991, p. 591)

		Imitation-focus dimension	
Outside-influence dimension	<div style="border-left: 1px solid black; border-right: 1px solid black; padding: 5px;">                     Organizations within a group<sup>a</sup> determine the diffusion and rejection within this group                       Organization outside a group<sup>b</sup> determine the diffusion and rejection within this group                 </div>	Imitation processes do not impel the diffusion or rejection	Imitation processes impel the diffusion or rejection
		Efficient-choice perspective	Fad perspective
		Forced-selection perspective	Fashion perspective

<sup>a</sup> “Organizations within a group” refers to those firms or units with the potential to adopt the innovation (ABC in this study).

<sup>b</sup> “Organizations outside a group” refer to consulting companies, business-schools, etc., i.e. those organizations that promote innovations but do not necessarily adopt innovations by themselves.

Theories building on the forced-selection perspective assume that organizations such as governmental bodies (Carroll, Delacroix & Goodstein, 1988; DiMaggio, 1987; Scott, 1987), have sufficient power to dictate which innovations are diffused.<sup>3</sup> Forced selection assumes that adopting organizations face a situation of no choice; their motives play no role in explaining the diffusion and rejection of innovations.

Theories building on the fashion perspective also assume that non-adopting organizations have an impact on diffusion. The impact is, however, less strong than in the forced selection perspective, as these fashion setters are usually consulting firms, business schools and mass-media. The key to distinguishing the fashion perspective from efficient-choice and forced selection perspectives is uncertainty. The choice to be efficient, relatively little ambiguity concerning environmental forces, goals or technical efficiency may exist. If the

decision to adopt or reject is forced, uncertainty is not a concern. It has been argued that under conditions of uncertainty, organizations tend to imitate other organizations (DiMaggio & Powell, 1983). The fashion perspective assumes that organizations in a group imitate administrative models promoted by “fashion-setting organizations” (Abrahamson, 1991, 1996). The administrative technologies promoted by fashion-setting organizations may or may not be efficient.

The fad perspective is different from the fashion perspective; here organizations are assumed to imitate other adopting organizations instead of fashion-setting organizations. Therefore, non-adopting organizations are not assumed to influence diffusion in theories based on the fad perspective. Organizations imitate other organizations to appear legitimate (DiMaggio & Powell, 1983; Meyer & Rowan, 1977) or to avoid the risk that competitors will gain a competitive advantage (Abrahamson & Rosenkopf, 1993; Katz & Shapiro, 1985). Although conventional innovation diffusion literature widely acknowledges the uncertainty of innovations, it assumes that the uncertainty is resolved as the decision to adopt is made. These theories do not fit under the fad perspective.

<sup>3</sup> Exceptional conditions, such as a war, may cause governments to impose restrictions on how to calculate e.g. product cost (see Virtanen, Malmi, Vaivio & Kasanen, 1996). Similarly, a powerful purchaser (e.g. a defense industry) may require certain norms for cost calculation.

Abrahamson's (1991) typology presented above is an analytic one. In some innovations a theory based on a single perspective may well explain the whole diffusion. In others, an explanation may require a combination of perspectives. Combining perspectives refers here both to the temporal dimension, i.e. in various phases of any diffusion process some perspective may capture reality better than others, and to the parallel dimension, i.e. more than one perspective is required to capture reality.

#### 4. Method and data

An explorative study is needed to find out which perspective(s) drive the diffusion of management accounting innovations in its various phases. Our attempt is not to test hypotheses derived from these perspectives, but to investigate the applicability of Abrahamson's framework on management accounting innovation. Combining Abrahamson's framework and empirical data, this study attempts to take an initial step towards establishing propositions or a dynamic model to explain innovation diffusion in management accounting.

This study approaches innovation diffusion at the aggregate, societal level rather than at the level of a single firm (calls for this type of analysis, see e.g. Downs & Mohr, 1976; Hopwood, 1987; Miller & O'Leary, 1990; Swanson, 1994; Van de Ven & Rogers, 1988). We focus on ABC, partly because there is a limited number of management accounting innovations which have been diffused in recent years, and partly because a careful study of even a single diffusion process is a large task.

Finland provides the setting for this study. Finland is well-suited for this type of study for at least two reasons. First, it is reasonably small in size (5 million inhabitants), yet the institutional context (e.g. legislation, universities, trade unions, mass-media, professional bodies and stock-markets) is similar to that of most industrial nations. Finland can, therefore, be thought of as a microscopic version of some larger nation, its small size allowing a careful study of the diffusion process. Second, as a member of the European Union, Finland is a fairly wealthy, industrialized nation

exposed to international competition. Therefore, the diffusion of ABC in Finland should not differ appreciably from that in other industrialized western societies. Although the diffusion of ABC in Finland represents some later stage of the overall diffusion of ABC across the world, a unique language, remote location, culturally and religiously coherent population and the existing accounting traditions are all likely to make Finland a social system of its own — a sort of laboratory in which the diffusion process may be studied.

Relevant data may be collected both from organizations adopting ABC (i.e. demand side), and those supplying or promoting it. Moreover, there are basically two options for discovering the motives for ABC adoption. The first is to ask organizations directly, both on the demand and the supply sides. The problem here tends to be that, *ex post*, all behavior is explained as rational. The second is to rely on secondary measures hypothesized to support one or another perspective. In this study, all four types of data are used.

Three data collection methods were used. Four postal surveys were conducted to gather data from the demand side, including both structured and open questions about motives of adoption as well as background data allowing examination of correlations. Consultants, academic persons and the software industry were interviewed about their motives, perceptions and involvement in ABC diffusion. The frequency of published material (articles and books) on ABC in Finland over time was tracked to provide secondary evidence of supply-side effects (see Abrahamson, 1996).

##### 4.1. Surveys

The first of the surveys on the metal, engineering and electromechanical industries was conducted in the summer of 1995. The following three surveys on the forest, food and chemical industries were conducted in the summer of 1996. The surveys were conducted in two phases as earlier surveys addressing the spread of ABC in Finland indicated that ABC had not gained a firm foothold until the end of 1992 (Lukka & Granlund, 1996). Thus, one industry was surveyed first to find out the extent of ABC applications there. As ABC seemed to

have gained a strong foothold in the metal, engineering and electrotechnical industries in Finland, other industries central for the Finnish economy were targeted.<sup>4</sup>

Surveys were targeted on business units,<sup>5</sup> since there may exist more than one cost accounting system in a large company. These surveys dealt with large and medium-sized units only, employing more than 30 persons, as it may be presumed that the smallest units lack systematic cost accounting. In each survey, the same questionnaire was used. Most units responded with their names attached to the survey instrument, thus, allowing us to ensure that the shifts in diffusion curve are not due to the operations of one major company and its sub-units.

In the first survey, the basis of the sample was all members of the Federation of the Finnish Metal, Engineering and Electrotechnical Industries (FINET, an employers' organization). Likewise, in the second survey, the basis of the sample was all members of the Finnish Food and Drink Industries' Federation (FDI, also an employers organization). In Finland, most (~95%) of the large and medium-size companies in the metal, engineering and electrotechnical industries belong to the FINET, and in food and drink industries (~90%) to the FDI. The only systematic bias relates to small companies, a large number of which are not members. As this study concentrates on units employing more than 30 persons, firms belonging to the FINET and the FDI represent the target population in both industries fairly well. Members of the FINET and the FDI were targeted in the hope of high response rates. After removing all small units with fewer than 30 employees from the FINET mailing register, we ended up with a sample of 690 units. As we received 287 usable responses, the response rate

was 41.8%. In the food and drink industries, the sample size was 173 units. With 71 usable responses, the response rate was 41%.

In the chemical industries, the survey was conducted without the aid of the employers' organization. Therefore, all units in the chemical industries in the Register of Enterprises and Establishments of Statistics Finland served as the basis for the sample. The sample contained 182 units employing more than 30 persons. As we received 75 responses, the response rate was 41.2%.

In the forest industry, we had every reason to believe that ABC was not widely used. Hence, we did not conduct a separate survey addressing ABC and other costing issues there. Instead, we included a question on ABC use in a mail survey on productivity measurement (conducted by the University of Technology at Tampere). The basis of the sample was all members of the Federation of Forest Industries (FI, an employers' organization). Roughly 85% of all units in Forest Industries employing more than 30 persons belong to the employers' organization. As in other industries, there is a systematic bias because some small units do not belong to the FI. Moreover, a group of 60 sawmills have their own employers' organization. As these sawmills are small on average, the sample covers the target population fairly well. The productivity questionnaire was mailed to 195 units; the response rate was 29%. Two of the 57 responding units stated that they were using ABC and one was currently implementing it, which confirmed our initial expectations of limited use in the forest industry. As both ABC users were similar business units of the same large corporation with similar accounting systems, one of them and the unit which was currently implementing ABC completed the questionnaire we had been using in collecting data from other industries.

Because all the samples comprised units, not companies, a severe response bias analysis was not performed owing to the non-availability of corresponding data. However, a response bias test was performed with respect to size by comparing the personnel size of the responding units with those of the proxy of the sampled population. All establishments in each of the four industries with

<sup>4</sup> The industries studied were selected for their central role to the Finnish economy. These four industries represent 78% of the total gross value of production. Excluding the energy sector from industrial production will raise the share of these four industries to 88.5% of the gross value of production.

<sup>5</sup> In the case of single-unit firms the concept of "unit" refers to the firm as a whole; in the case of multi-unit firms it refers to one of the responsibility centers. Both manufacturing and service units were included in the study.

50 or more employees included in the Register of Enterprises were used as a proxy for the sample population. The chi-square test indicated that the sample in the chemical industries was not biased, whereas the samples in all the other three industries were biased towards large units (in metal, engineering and electrotechnical industries, chi-square 13.49, D.F. 1; in food and drink industries, chi-square 24.60, D.F. 1; in forest industry, chi-square, 9.54, D.F. 1).<sup>6</sup> There are at least two possible reasons for the bias. Large companies and units may have closer ties to employer organizations than small ones, and in these companies people may be more responsive to employer–organization-based initiatives like this survey. Also the concept of ABC is more likely to be familiar to large units than to small ones, thus provoking more comments from the former.

The response bias has only a limited impact on the study's validity regarding the stated motives of adopting ABC, as ABC appears to be rare in small units.<sup>7</sup> Hence, a larger share of small units in the sample would hardly have had a significant effect on the distribution of motives for adopting ABC. On the other hand, figures representing the adoption-rate for ABC are likely to be biased upwards, as it appears that the adoption of ABC is more common in large units than in small ones (see Appendix). Hence, the diffusion curve reported below should be interpreted with care. For the purpose of this study, the data from all four surveys were combined in a single file and analyzed in an SPSS for windows environment.

ABC was initially presented as a two-stage method to allocate overhead costs to products. Later it has been described as a method to assess resource consumption in organizations and as a tool for activity management. Hence, it seems that

at least at the conceptual level ABC systems have evolved over time, making it impossible to define what exactly diffusing is. Furthermore, academics do not share a common view of what makes an accounting system an ABC system; neither is there agreement on whether it includes anything innovative. Further, the concept of ABC in practice is used to describe accounting systems of various kinds (Malmi, 1996). Therefore, all units that indicate use of either ABC or ABM, or are currently implementing ABC, are classified as ABC adopters in this study.

#### 4.2. Interviews

Ten persons, three from different consulting companies, three academics, three from the software industry and one from the Federation of the Metal, Engineering and Electrotechnical Industries were interviewed during January and February 1995 (see Appendix). These persons were selected on the basis of prior knowledge of their central role in the early phases of ABC diffusion in Finland (connections to CAM-I, authors of articles on ABC, etc.). As interviewees were asked to name the most important persons and organizations in the supply-side associated with the diffusion of ABC in Finland, the same persons interviewed here appeared in most responses. Interviews were semi-structured, lasted from 1 to 2 h each and were all recorded.<sup>8</sup> The focus in interviews was not only on the surveyed industries, but on the Finnish economy as a whole.

#### 4.3. Published material

One way to assess the influence of the supply side on innovation diffusion is to investigate the amount and timing of published material on that innovation, and to contrast this pattern to that of the actual spread of an innovation (Abrahamson, 1996). All Finnish papers and magazines (see Appendix) covering issues of management and accounting, and having a media coverage of over 1%, were identified with the aid of Finnish Gallup

<sup>6</sup> The Register of Enterprises classify establishments according to personnel size into groups of which one ranges from 20 to 49. As this study was addressed to the units employing 30 or more persons, we tested the response bias with units employing 50 or more persons. A chi-square tests using 20–49 class, and thus also including units where the personnel size is between 20–30 in the proxy of the target population, gave an even stronger response bias towards large units, as might be expected.

<sup>7</sup> 6.4% of the small units in the sample use ABC.

<sup>8</sup> Questions covered in interviews are available from the author.



Oy. This resulted in nine journals. Moreover, two magazines targeted to accountants were included in the study. A 10-year period from 1986 to 1995 was covered. Only one of the papers is indexed; every issue of each of the 11 papers or magazines was checked for articles on ABC or ABM.

## 5. Explaining management accounting innovation diffusion

Fig. 1 describes the temporal pattern of ABC diffusion among firms and business units in Finnish industry. The figure is derived from surveys where respondents were asked to determine the year in which they employed ABC or ABM for the first time. As ABC is still a fairly recent phenomenon, we cannot make any conclusions concerning the final shape of the curve. However, it appears that ABC had been diffused fairly slowly until 1990, followed by the take-off period. Thus, irrespective of the final shape of the curve, the early diffusion of ABC in Finland appears to follow the S-shape familiar from a number of other innovation studies. In interpreting the diffusion curve, recall that the possible ABC adoptions in the metal, engineering and electrotechnical industries during the second half of 1995 are absent from the

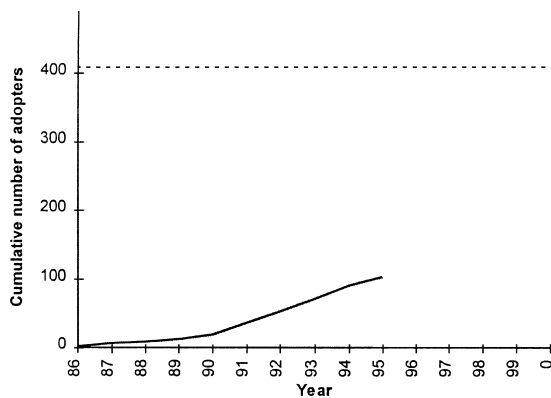


Fig. 1. Cumulative diffusion of ABC in Finnish industry [ $N(\text{all})=490$ ;  $N(\text{ABC})=104$ ]. As 15.3% of the respondents indicated they had made a decision not to adopt ABC, and two units stated they had adopted ABC and later rejected it, a dotted line was drawn to represent this new maximum level of adoptions.

figure and analysis due to the timing of data collection in these particular industries.

The following analysis of the driving forces of innovation diffusion in management accounting is divided into three parts according to the diffusion curve above: the initial phase (years 1986–1990), the take-off phase (1991–1992) and later phases (1993–). Unfortunately, we are not able to define the exact beginning and ending of the various phases. The distinction between take-off phase and subsequent phases was made here to advance discussion rather than to prove that the take-off phase ends in 1993.

### 5.1. Initial phase

#### 5.1.1. The analysis of stated motives

To find out what causes the diffusion of management accounting innovation in its initial phase, let us first consider the survey responses to the questions of motives and timing. The respondents had ten alternatives for motives: nine pre-given answers plus an option to formulate their own answer. The following table (Table 2) summarises the frequency of each motive by year.

The first two motives “we did not trust the information from the old system” and “the old system did not meet the needs of management” in the early years of 1986–1990 were the most frequent. This gives some support to the efficient-choice perspective in the initial phase. However, these two motives were also the two most obvious ones to mention, at least retrospectively. Moreover, they were both mentioned frequently by later adopters, hence giving limited insight into the possible temporal patterns of the motives.

One often cited motive (31%) for adopting ABC between 1986 and 1989 was the parent or headquarters “suggestion”. A closer look reveals that those earliest adopters in Finland were subsidiaries of multinationals, following their company policy. As headquarters may be in the position to force sub-units to adopt certain innovations, the forced selection perspective may also have the potential to explain innovation diffusion among units of for-profit organizations. (Based on the available data, it is not possible to assess which perspective(s) best explain(s) the initial adoption by

Table 2  
The frequency of motives for adopting ABC

Motive	Year 1986–1989 <i>n</i> = 13	1990 <i>n</i> = 6	1991 <i>n</i> = 16	1992 <i>n</i> = 18	1993 <i>n</i> = 19	1994 <i>n</i> = 19	1995 <i>n</i> = 13
<i>Efficient-choice</i>							
Existing system not reliable	7	2	6	7	9	5	3
Existing system not useful for management	7	3	10	10	6	8	8
Information system updating	1	1	3	2	4	1	2
Competitors use ABC	–	–	–	–	–	–	1
Other units of company benefited	1	–	–	3	–	2	3
Process organization requires new accounting	2	1	4	3	4	6	5
<i>Forced selection</i>							
Parent/headquarters advice	4	–	1	3	4	6	1
<i>Fashion and fad</i>							
Wish to try a new tool	–	1	9	10	7	9	6
Auditor/consultant advice	–	–	1	2	–	–	1

headquarters of foreign-based multinationals.) Although the decision to adopt may be forced from the perspective of these sub-units of multinationals, the driving force for these adoptions resides inside the group of adopting organizations.

#### 5.1.2. The analysis of organizational determinants

Let us next focus on the organizational determinants of adopting organizations instead of the adopter perceptions of motives. Accounting literature suggests that ABC is better suited for certain kinds of organization. If such organizations adopt ABC more often than other types of organization, we may assume that the adoption decisions have in general been fairly rational ones.

Cost accounting literature has argued that traditional cost accounting systems are obsolete in the new environment characterised by modern production technology and intensive competition (Cooper, 1988; Johnson & Kaplan, 1987). New production technology was seen as a crucial factor changing the cost structure of many companies, i.e. to increase indirect costs relative to direct costs.<sup>9</sup>

<sup>9</sup> Miller and Vollman (1985) argued that there are also a number of balancing and correcting activities, which increase the proportion of indirect costs in modern factories. Bjornenak (1994) used data from Norway to test the impact of the share of indirect costs on the probability of companies adopting ABC and found it to be significant. This is one reason why this study concentrates on capital costs.

ABC has been offered as a solution for handling these increased indirect costs. We would then expect that units with a high proportion of capital-related costs are more likely to benefit from ABC than units with a low proportion of capital-related costs. This study found no support for this hypothesis, as the difference in the proportion of capital-related costs in total costs was not statistically significant between the adopters and non-adopters.<sup>10</sup>

Competition is said to influence the need for accurate cost accounting information because in highly competitive industries mistakes made while relying on the wrong cost information are likely to be exploited by competitors immediately (Cooper, 1988, 1989). Hence, we would expect that units faced with intense competition find ABC more useful than units facing only moderate competition. Ideally we would like to measure competition in the main market area(s), taking the market type and relative market shares into account. For this study we had limited possibilities for data collection. The proxy used instead is the proportion of exports (%) in turnover. This variable is based on

<sup>10</sup> The two forest industry cases were excluded from this and other adopter characteristics analysis presented in this section as the corresponding data from non-adopters were not collected in the productivity survey. The tests for differences in unit size are exceptions.

the assumption that exporting units face more competition than units selling on the domestic market. A related proxy used is the change in competition. A scale variable from  $-2$  (decreased) to  $2$  (increased) is used.

The results indicated that both a high proportion of exports (*t*-test,  $t = 2.40$ ,  $p < 0.05$ ) and perceived change in competition (*t*-test,  $t = 2.82$ ,  $p < 0.01$ ) are correlated with ABC adoption.

Shank and Govindarajan (1993) suggest that differences in strategy will cause differences in cost management. Building on Porter (1980, 1985), they argue that companies aiming at cost leadership need more sophisticated product costs than companies competing in product differentiation. In this study, units were asked to say which better describes their strategy, cost leadership or product differentiation. However, we found no correlation between cost leadership strategy and ABC adoption. This lack of correlation between strategy and ABC is contrary to the findings of Gosselin (1997), who found support for the hypothesis that companies following a prospector strategy (see Miles & Snow, 1978, 1994) are more likely to adopt the activity management approach than companies following other strategies.

Basic text-books commonly argue that the underlying production process and the type of cost system used in a unit are somehow related (e.g. Horngren & Foster, 1987; see also Cooper, 1988; Banker, Datar, Kekne & Mukhopadhyay, 1990). The basic assumption is that the complexity of the production process has an impact on the choice of costing system. The more complex the production process, the more complex the costing system which models it. Moreover, product diversity is said to drive production process complexity. The more complex the product, the more activities are required to manufacture it. To find out the resource consumption of different products in a complex setting, complex cost accounting systems are required. This is to say that the system should feature more cost pools and assignment bases, as in ABC. In this study, three questions were used to identify the production process used. Respondents determined whether they are mass, batch, single-product or project producers, whether they make-to-order or make-to-stock and whether they mainly

make customised or standard products. None of these characteristics of the production process were correlated with adoption. On the other hand, high product diversity, measured in five group scale based on the  $\log_{10}N$  value (1:1–10, 2:11–100, 3:101–1000, 4:1001–10000, 5: more than 10000), was found to be positively correlated with ABC adoption (Mann–Whitney,  $p < 0.01$ ).

In general, differences in competitive position and product diversity between adopters and non-adopters of ABC seem to give some support to the efficient-choice model of the adoption of ABC. It is not clear, however, how the lack of correlation between strategy and cost structure with ABC adoption should be interpreted. Does this lack of correlation result from poor operationalization of measures or does it indicate that non-rational motives are also involved? In addition to competitive position and product diversity, we found evidence that size affects the likelihood of adopting ABC (see Appendix; compare Ask & Ax, 1992; Drury & Tayles, 1994; Davies & Sweeting, 1993; Innes & Mitchell, 1995).

This type of analysis is of limited help, however, in trying to understand the temporal distribution of adoptions as portrayed in the diffusion curve. To provide some insight into possibly different motives at different times, we checked to see whether the units likely to benefit most from ABC also adopt it earlier than the other types of organization. If this is true, we may assume that at least the early adoption decisions have been fairly rational. To test whether the early adopters are different from the late adopters (cf. OI studies), ABC adopters were classified into three groups based on the diffusion curve. Units which adopted ABC between 1986 and 1990 ( $n = 19$ ) formed the first group of early adopters. Units which adopted ABC during the take-off phase in 1991 and 1992 ( $n = 34$ ) belonged to the second group, whereas the rest of the units which adopted ABC in 1993 or later ( $n = 51$ ) formed the third group. We examined whether these groups were different from each other with respect to the variables discussed above, namely size, cost structure, strategy, competition faced, product diversity and production type.

Early adopters appear to have been smaller in size, measured both in terms of turnover (*T*-test,

$t=2.47$  when the groups of 86–90 and 91–92 were compared, and  $t=2.53$  for a comparison of groups 86–90 and 93–95,  $p < 0.05$ ) and number of personnel (Mann–Whitney,  $p < 0.05$ ) than the later adopters. It is interesting to note that the largest firms and units have not been the first to adopt ABC in Finland. Neither is this explained by the use of small units to pilot test ABC (see Table 6 below), as the majority of the early adopters appear to be independent companies. It also appears that those units which adopted ABC in 1993 or later export a larger share of their output than early adopters do (i.e. 86–90 group;  $T$ -test,  $t=2.49$ ,  $p < 0.05$ ). With respect to other tested variables, units were not statistically different from each other.

The differences in unit size alone can hardly be said to support any one of the four perspectives with potential to explain the diffusion and rejection of innovations. On the other hand, one could expect those units facing intensive competition to adopt ABC first, not last as seems to be case in Finland. But since the validity of exports as a proxy for competition is easily questioned, neither do the results here indicate strong evidence against the efficient-choice perspective.

5.1.3. The analysis of the role of the supply side

Another way to assess the motives for adopting ABC is to look for the impact of supply-side factors. Survey respondents were asked whether they had used consultants in their ABC or ABM project. The following table presents the number and percentage of units which had used consultants for each year of adoption.

Until the 1990s, only a few ABC adopters used consulting services. As interviews revealed that consulting services for ABC were set up in Finland in 1990, the early adopters of ABC that used consultants were interviewed by phone. The unit that adopted ABC in 1988 used a Swedish consultant,

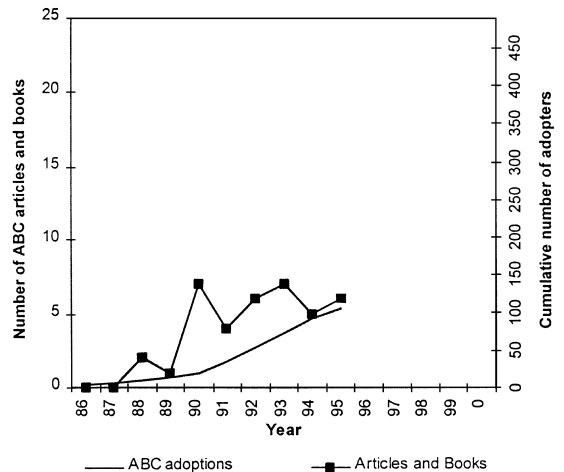


Fig. 2. Articles and books on ABC in Finland.

whereas the unit that adopted it in 1989 bought consulting services from an engineering professor. “When it comes to ABC, in 1990 the situation was virginal.” This was how one consultant described the fact that the business community was not in general aware of those few early ABC cases shown in Fig. 1 and that before 1990 there was still no ABC consulting markets. Moreover, there was no software for ABC at that time, nor were there courses or seminars devoted to the topic in the late 1980s. Only three articles and no books on ABC appeared in Finland before 1990 (see Fig. 2).

Given that consultants played almost no role in the initial phase of ABC diffusion in Finland, ABC was not taught in Finland, and there was no suitable software for ABC, it appears unlikely that the fashion perspective could explain these adoptions. Furthermore, as there were no other local companies to imitate, and no-one appeared to be aware that some subsidiaries of foreign based multinationals used ABC, it also seems that the fad perspective was insignificant in this early phase of ABC diffusion in Finland. There was also no evi-

Table 3  
The use of consultants in an ABC project

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
No. of adopters	3	3	3	4	6	15	18	18	18	13
Use cons.	–	–	1	1	1	8	9	5	3	8
% of adopters	0	0	33	25	17	53	50	28	17	62

Table 4  
The frequency of motives for adopting ABC in percentage terms

Motive	Year 1986–1990 <i>n</i> = 19 (%)	1991–1992 <i>n</i> = 34 (%)	1993–1995 <i>n</i> = 51 (%)
<i>Efficient-choice</i>			
Existing system not reliable	30	18	17
Existing system not useful for management	33	27	22
Information system updating	7	7	7
Competitors use ABC	–	–	1
Other units of company benefited	3	4	5
Process organization requires new accounting	11	9	15
<i>Forced selection</i>			
Parent/headquarters advice	13	5	11
<i>Fashion &amp; fad</i>			
Wish to try a new tool	3	26	22
Auditor/consultant advice	–	4	1
Total	100	100	100

dence to suggest that the adoption decisions of these units were somehow forced by an outside organization. Although the analysis of respondent characteristics did not provide much support for any of the perspectives in the initial phase, the motives of the respondents were mainly centred around rational ones at that time. Hence, out of the four perspectives outlined by Abrahamson, the efficient choice perspective probably explains the adoption of ABC by the Finnish firms in the early years.

The dominance of the efficient-choice perspective among Finnish companies during the early phase of diffusion in the 1980s may be questioned by suggesting that these decisions were affected by the international debate on ABC. We believe that there must be a difference between searching for new ideas and following fad or fashion. Although international magazines may have channelled the idea of ABC to these firms, we question whether these few journals could cause a management fad or fashion, especially without any local support. The first small independent Finnish companies adopting ABC (see Table 6) hardly associate themselves with US-based multinationals. The dominance of the efficient-choice perspective may also be questioned by focusing on the organization's ability to assess the efficiency of ABC in attaining their goals. As any new cost accounting method

under consideration poses at least some uncertainty, we would not argue that adoption decisions are fully rational. However, out of these four stereotypes presented, efficient-choice best describes the behaviour.<sup>11</sup> We therefore propose that

**Proposition 1.** *The efficient choice perspective has the strongest explanatory power in explaining adoption behaviour in organizations in the initial stage of innovation diffusion in management accounting. The driving force for innovation diffusion in this phase is inside the group of adopting organizations.*

### 5.2. Take-off phase

From 1991 on ABC gained wider acceptance in Finland. This type of “take-off” period is familiar from a large number of diffusion studies. Is it the efficient-choice perspective that dominates

<sup>11</sup> It is acknowledged that accounting change in any single firm may have various origins. Hopwood (1987) denies the possibility of any unitary force driving accounting change, whereas a number of other authors have demonstrated that change may stem from political tensions (a dialectical explanation) instead of from a collective management decision aimed at common goals. Our purpose here is not to undermine these arguments, but to suggest that change in the early phase of diffusion is driven by forces inside an organization, whether rational or political.

Table 5

The frequency of motives for adopting ABC in percentage terms in units with both rational and fashion or fad related motives

Motive	Year 1986–1990 <i>n</i> = 0 (%)	1991–1992 <i>n</i> = 19 (%)	1993–1995 <i>n</i> = 20 (%)
<i>Efficient-choice</i>			
Existing system not reliable	–	25	19
Existing system not useful for management	–	25	19
Information system updating	–	4	4
Competitors use ABC	–	–	2
Other units of company benefited	–	2	4
Process organization requires new accounting	–	6	15
<i>Forced selection</i>			
Parent/headquarters advice	–	4	8
<i>Fashion and fad</i>			
Wish to try a new tool	–	34	35
Auditor/consultant advice	–	4	–
Total	0	100	100

this “take-off” phase as economic theory would suggest? Or are theories based on fad, fashion or forced-selection perspectives more effective in explaining organizational behaviour at this stage?

### 5.2.1. Analysis of stated motives

In survey responses there was no systematic variation in “rational” motives for ABC adoption over time (see Table 2). On the other hand, while during the 1980s none of the adopters indicated that they wanted to try a new tool, from 1991 on more than half gave this as one of their motives. Moreover, in 1991 and 1992 auditor and/or consultant advice was given as a motive for adoption for the first time. Taken together, a little less than two thirds of the adopting units refer to a fashion- or fad-related motive during these years.<sup>12</sup>

Furthermore, responses to the open question concerning the timing of ABC project suggest that ABC was in fashion by 1992. These changes in the pattern of answers seem to support the fashion or fad perspective.

A number of respondents gave more than one reason for their ABC adoption. This raises the

interesting, but difficult, question of the importance of various motives. One way to analyse the relative importance of various motives is to look at the distribution of answers in percentage terms, as portrayed in Table 4.

At first glance, it may look like fashion- or fad-related motives weigh relatively little when all responses are considered. There are, however, at least two problems with this type of approach. First, in the questionnaire there were more “rational” reasons than fashion- or fad-related motives to choose from. Given multiple answers by a large number of respondents, results are bound to be biased towards the rational motives. Second, most actions tend to be explained in rational terms. Relying only on the distribution of answers, it would, therefore, be hasty to conclude that the rational type of motives dominate the take-off phase.

A further analysis of motives reveals three main types of adopter at the take-off phase:<sup>13</sup> those who argue that the motives are mainly rational (~38% of adopters in 1991–1992; ~49% of adopters when all periods are considered), those who indicate fashion or fad as the sole motive (91–92: ~6%; all

<sup>12</sup> A wish to try a new tool may involve either fashion or fad as a motive for adoption. Consultant/auditor advice refers here to fashion.

<sup>13</sup> In addition to these three groups, five units (4.8%) follow parent/headquarter advice only at other than take-off phase, hence adoption is more or less forced.

Table 6  
Motives for ABC adoption by the status and origin of the unit

Organization type and motive	Years	1986–1990		1991–1992		1993–1995	
		Units	#	%	#	%	#
<i>Units of Finnish companies</i>							
Efficient-choice <sup>b</sup>		–	–	9	26	13	25
Forced selection only <sup>c</sup>		1	5	–	–	3	6
Fashion/fad only <sup>c</sup>		1	5	1	3	2	4
Mixed efficient and fashion/fad <sup>d</sup>		–	–	11	32	18	35
<i>Independent Finnish companies</i>							
Efficient-choice		13	68	2	6	7	14
Forced selection only		–	–	–	–	–	–
Fashion/fad only		–	–	–	–	4	8
Mixed efficient and fashion/fad		–	–	6	18	1	2
<i>Units of multinationals<sup>a</sup></i>							
Efficient-choice		3	16	2	6	2	4
Forced selection only		1	5	–	–	–	–
Fashion/fad only		–	–	1	3	–	–
Mixed efficient and fashion/fad		–	–	2	6	1	2
Total		19	100	34	100	51	100

<sup>a</sup> Multinationals refer to units with either origin or ownership other than Finnish. Units of companies with Finnish origins, but multinational operations, are classified as Finnish.

<sup>b</sup> Efficient-choice includes those units with rational type of motives only, or both rational and forced selection types of motives.

<sup>c</sup> Forced selection only and fashion/fad only refer to units with those motives alone.

<sup>d</sup> Mixed efficient and fashion/fad refers to units with both rational and fashion/fad type of motives.

periods ~9%), and those who have both rational and fashion- or fad-related motives (91–92: ~56%; all periods ~38%). As the respondents own assessments indicate no question about the motives in the first two groups, it appears that focusing on those units that have both rational and fashion- or fad-related motives (in total 39 units) is the more appropriate way of looking at the issue of the relative importance of these motives. During the take-off phase, 58% of the answers fall in the category of rational motives, 38% in fashion or fad motives and 4% in forced selection (Table 5). Hence, acknowledging the difficulties discussed above, the data on motives alone do not allow us to determine whether the rational or fashion- or fad-related motives are more dominant in units with several motives.

### 5.2.2. The analysis of motives and firm type

As there is a fairly consistent response over time to the efficient choice reply, and it appears that motives vary among the adopting units, we

considered whether adopters with different motives also had different characteristics. In other words, it is of interest whether certain types of firm always behave rationally while others are influenced by fashion or fad. For this purpose, whether these three groups were different with respect to origin (i.e. multinationals vs indigenous) or status (independent firms vs divisions) was investigated. Table 6 illustrates the results.

Most of the adopters in the early phase of the diffusion appear to be independent Finnish companies, with mainly rational motives. On the other hand, during the take-off phase the vast majority of adopters were divisions or units of Finnish-based companies. Within all types of companies, both at the take-off and subsequent phase, there was an almost equal number of units starting with rational motives or both rational and fashion- or fad-related. Similarly, all types of organization mention fashion or fad as a sole motive. Hence, based on the respondents' own accounts of motives, we cannot say that companies of different

Table 7  
The use of consultants by different type of units

Organization type and motive	Years Units	1986–1990 #	1991–1992 #	1993–1995 #
<i>Units of Finnish companies</i>				
Efficient-choice		–	3 (9) <sup>a</sup>	3 (13)
Forced selection only		–	–	–
Fashion/fad only		–	–	2 (2)
Mixed efficient and fashion/fad		–	10 (11)	7 (18)
<i>Independent Finnish companies</i>				
Efficient-choice		3 (13)	1 (2)	–
Forced selection only		–	–	–
Fashion/fad only		–	–	2 (4)
Mixed efficient and fashion/fad		–	1 (6)	1 (1)
<i>Units of multinationals</i>				
Efficient-choice		–	1 (2)	1 (2)
Forced selection only		–	–	–
Fashion/fad only		–	1 (1)	–
Mixed efficient and fashion/fad		–	–	–
Total		3	17	16

<sup>a</sup> Figures in parentheses illustrate the total number of adopters in that cell.

origin or status systematically have different motivations.<sup>14</sup>

Taken together, the analysis of the respondents own assessments of motives suggest that both rational and fashion- or fad-related motives explain behaviour at this phase of innovation diffusion, but it would be difficult to claim, based on this evidence alone, that one or the other perspective is more or less dominant in the take-off phase.

The comparison of early adopters with late adopters suggested that units adopting in 1991 and 1992 were larger in size than the early adopters. Although large size as such may not support any of the perspectives, large corporations, and units of them, are usually the prime targets for the best-known consulting organizations. Therefore, the sudden interest in ABC by the units of the largest Finnish corporations could be interpreted as supporting the fashion perspective, irrespective of the motives they give.

<sup>14</sup> It was also checked whether there are systematic differences between units with different motives in dimensions other than origin and status. Motive appears not to be related to size, strategy, cost structure, competition, or to production or process complexity either.

### 5.2.3. The analysis of the role of the supply side

For the use of consulting services by units, refer to Tables 3 and 7. In 1991, 53% of all units adopting ABC indicated that they used consultants. This was in contrast to a few single cases in 1990 and before, and a smaller percentage in later years (except in 1995). A further analysis reveals that it is mainly divisions or units of Finnish-based companies that use consultants in the take-off phase (76% of the units which used consultants were units of Finnish-based companies; 12% were units of multinationals and 12% were independent Finnish companies). This is not particularly surprising given the large number of units of Finnish-based companies adopting ABC at that time. What is interesting, however, is that ten out of the eleven units of Finnish-based companies with mixed motivations (both fashion-related and rational) used consultants in the take-off phase. In contrast, only three out of nine units of the Finnish based companies with rational motives used consultants. Why do the units that are curious about ABC seem to use consulting services more than those with rational motives only?

It would appear somewhat unlikely that the provision of consulting services is not related to



the increase in ABC adoption. Although one may argue that the decision to adopt ABC came first, and that consultants were hired to handle the implementation, we doubt it. The interviews revealed that the idea of setting up ABC consulting services was suggested by international consulting organizations; we found no evidence that establishment was a response to the demand for ABC on the market.<sup>15</sup> All promotional material on ABC came from the U.S. and the U.K. Both interviews with consultants and questionnaire responses show that consultants were engaged in active selling of ABC (in fact, the enthusiasm of the consultants was mentioned as a motive for adopting ABC in one questionnaire). Moreover, the first time survey respondents indicated that auditors had suggested improvements in cost accounting was in 1991. In Finland, the most active ABC consultants are subsidiaries of large auditing organizations, or closely connected to them. Hence, both survey and interview data suggest that some of the adoption decisions were influenced by consultants. This supports the fashion perspective as an explanation of behaviour in the take-off phase.

Based on interview evidence, it may well be argued that from the early 1990s supply-side organizations other than consulting firms have also had an interest in influencing adoption decisions. A comment by a FINET director interviewed — “we strongly promoted ABC at the beginning of 1990s” — clearly confirms their support for ABC. Academics, in turn, had both research-related interests (research projects, publications and tenure) and personal interests (selling consulting services) in promoting ABC. But even more interestingly, FINET and academics, working together in the late 1980s, recognized the need for pilot cases to obtain evidence of the viability of ABC. They actively sought companies which might be interested in developing cost accounting. A few companies agreed to join and students from technical universities designed new costing systems for these companies as their master’s theses (Uusi-Rauva,

1991).<sup>16</sup> “The activity of the University of Oulu”, as one survey respondent commented on their motives for adopting ABC in 1992, demonstrates the enthusiasm of some business schools.

Moreover, in 1991 and 1992 there were numerous seminars organized by various institutions providing executive education in which ABC and ABM were clearly promoted. The spread of ABC was also in the interests of the software industry. Two projects to develop ABC software were included in large, countrywide technology-driven programs, and the development work was done in close co-operation with a number of pilot firms. As a software consultant put it, some of them were acting like aggressive, door-to-door salespeople. Hence, we may conclude that there were a number of non-adopting organizations which attempted at that time to persuade Finnish firms to adopt ABC.

Abrahamson (1996) suggests that the impact of management fashions on the adoption decision could be studied by comparing the temporal frequency of articles on innovation in the mass-media with the innovation diffusion curve. For theory to hold, an increase in the number of publications should precede and accompany the take-off of an innovation.<sup>17</sup> As is evident from Fig. 2, the first writings on ABC appeared in 1988. An increase in the number of articles on ABC seems to have occurred in 1990, when ABC took off in Finland. This also supports the fashion perspective in the take-off phase.

The empirical data suggest that both rational and fashion perspectives explain the adoption decisions in the take-off phase. We found little evidence to support either forced selection or fad perspectives. Although there appear to be two perspectives important in explaining adoption behaviour in companies during the take-off phase, we suggest that the steep increase in adoptions depicted in the diffusion curve is best explained in terms of fashion. Support for the efficient-choice perspective as an explanation for the increasing

<sup>15</sup> This is not to say that Finnish firms were not in need of cost accounting consulting. ABC systems, or analysis, were simply not requested at that time.

<sup>16</sup> Student involvement is also evident in questionnaire responses, as from 1990 on one or more of the adopters in each year named student project as explaining the timing of adoption.

<sup>17</sup> All except one article were positive on ABC. The only article not positive on ABC simply pointed out that the limited research evidence precluded any definitive conclusions.

number of adoptions is not particularly convincing. We cannot explain the increasing adoption by the decreasing cost of implementing ABC. No software existed in the market, and there was no advanced “how to implement” type of written material on ABC on the Finnish market at that time. Hence, the evidence suggests that although economic factors have had an influence on adoption decisions, they are not sufficient to explain the growing use of ABC by Finnish firms from 1991 on. We therefore suggest that

**Proposition 2.** *The efficient choice and fashion perspectives both explain adoption behaviour in organizations during the take-off phase of innovation diffusion in management accounting. The driving force for innovation diffusion of management accounting in this phase comes from outside the group of adopting organizations.*

### 5.3. Subsequent phases

As our data only cover the years up to mid-1995, it is difficult to judge whether the last years in our sample are part of the take-off phase or some later stage of diffusion. However, our data do suggest that the motive for adoption may have changed again. One such notion is that in 1992 and later a number of units cited a suggestion from headquarters as their motive for adoption. At this time, these were sub-units of Finnish-based multinationals in which ABC had been applied earlier in some other units. It seems that learning ABC in one unit leads to its wider application among other sub-units in some organizations, suggesting that decisions to further apply ABC are more the result of efficient-choice than imitation. Also, independent indigenous companies seem to indicate fashion or fad as the only motive in a later phase of innovation diffusion. This, coupled with the limited use of consultants during 1993–1994, might suggest that imitation at a later phase is better explained by fad than fashion. However, because the wish to try a new tool may point equally to both fashion and fad, no definitive conclusions can be drawn at this point. In 1993 and 1994, the first PC applications appeared. In surveys, the existence of suitable software for PC

use was given as one reason for timing the ABC adoption. It appears that such firms have considered ABC, and realized its demands on data collection and processing. Adoption as a consequence of the lower cost of implementation suggests that the decision is a fairly efficient one.

Although our data do not provide us with clear signals on what perspective may best explain the diffusion of management accounting innovation after the take-off phase, previous research gives some hints. First, we may expect that fashion-setting organizations are able to influence adoption decisions in a fairly limited time-frame. This is partly because companies start to obtain information on earlier projects, both positive and negative. This is likely to reduce uncertainty, making the decision more rational. On the other hand, it has been suggested (e.g. DiMaggio and Powell, 1983) that organizations tend to imitate other organizations (instead of fashion setting organizations). Hence, it seems that organizations attempt to reduce uncertainty both by obtaining data on ABC projects directly, or by imitating similarly situated organizations (cf. Burt, 1987). We propose that

**Proposition 3.** *The efficient choice and fad perspectives both explain adoption behaviour in organizations in phases of management accounting innovation subsequent to the “take-off” phase. The driving force behind innovation diffusion of management accounting in this phase comes from inside the group of adopting organizations.*

To conclude, our tentative dynamic model based on empirical evidence about the diffusion of ABC in Finland suggests that the driving force behind management accounting diffusion varies over the course of diffusion. The driving force comes first from inside the adopting organizations, then shifts to the fashion-setting organizations, and eventually returns to the adopting organizations.

## 6. Discussion

This study found Abrahamson’s (1991) typology useful. Although it appears somewhat limited as

will be discussed below, it has a clear message to accounting scholars; the driving force behind accounting change may reside outside the group of adopting organizations. Thus, the teleological (and dialectic) explanation of change common in accounting literature, which assumes that the trigger for change comes from inside the organization, may not be sufficient. This is not to say, however, that teleology and dialectics are of little value as meta theories for understanding change in the accounting context (Van de Ven & Poole, 1995). We simply question the dominance of teleology. Furthermore, we argue that dialectics (as a meta-theory), applied in a somewhat different way than previously, could provide an interesting insight into innovation diffusion studies. Dialectics could contribute to diffusion studies by attributing the role of opposition (antithesis) to fashion setters, i.e. outside the adopting organization instead of to a company-internal sub-group. Fashion setters present new ideas, antitheses, against current wisdom, thesis. Adoption of an innovation, and the resulting modification of the initial idea, could be seen as a synthesis. The empirical evidence that the term ABC describes different kinds of accounting systems in practice (see Malmi, 1996) seems to give some support to this view.

So far, we have not found much evidence suggesting that management accounting systems are changed because of fads and fashions. However, fad and fashion as explanations for diffusion of management accounting innovation and change are not particularly radical. This is because fad and fashion perspectives closely resemble the argument of institutional isomorphism (DiMaggio & Powell, 1983; Scott, 1995). Imitative behaviour assumed in fad and fashion perspectives has roots in uncertainty, uncertainty being a central cause for mimetic isomorphism, one of the three mechanisms of institutional isomorphism that apparently lead to a homogenization of organizational forms and practices (DiMaggio & Powell, 1983).<sup>18</sup> The

outside influence emphasized in the fashion and forced-selection perspectives in turn corresponds to coercive isomorphism. Therefore, explaining organizational behaviour in the take-off and subsequent phases by fad and fashion seems to support the viability of new institutional theory for understanding management accounting change.<sup>19</sup> Similarly, the study's concern about the activities of fashion-setting organizations in the take-off phase may help to explain how norms and legitimate practices are created.

However, this study also points to some of the limits of new institutionalism in explaining management accounting change (see also Kraaz & Zajac, 1996). New institutionalism does not seem to explain the earliest adoptions of accounting innovations (cf. Tolbert & Zucker, 1983). The empirical work done in this study is unfortunately of limited help in judging whether these earliest adoptions are better explained by another form of isomorphism, namely the competitive isomorphism advocated by population ecologists (Hannan & Freeman, 1977) rather than more traditional theories of organizational adaptation (an assumption of the efficient-choice perspective). Furthermore, new institutionalism is one, but not the only theory required to explain adoption behaviour in later stages of management accounting diffusion. Hence, in order to fully understand the diffusion of management accounting innovations and change in management accounting systems, a combination of various theories is required.

The results of this study may also help to explain difficulties in and resistance towards infusion of new technologies inside organizations. Given that practitioners are knowledgeable about the environment in which they act (Giddens, 1984), they are likely to sense when the motive for introducing new ideas is based on management fashion. They may consider such behaviour irrational, or to be motivated by reasons other than seeking the best for their company, and respond with resistance. Or, such a motive may lead them to the conclusion that the new idea is only of a

<sup>18</sup> DiMaggio and Powell (1983, p. 150) suggested that institutional isomorphic change occurs through three mechanisms: coercive isomorphism that stems from political influence and the problem of legitimacy, mimetic isomorphism resulting from standard responses to uncertainty and normative isomorphism associated with professionalization.

<sup>19</sup> For the discussion of applicability of institutional theory to explain change, see Greenwood and Hinings (1996, p. 1023).

temporary nature, mainly disturbing their routines and leading ultimately to resistance.

Are fads and fashions then harmful for organizations? The adoption of management fashion is seldom attributable to non-rational behaviour alone, as also evidenced by this study. Furthermore, organizations seem to make rational modifications to core ideas of management fashions in the implementation phase in order to fit the idea to the particular needs of the organization. At best, following fads and fashions sets organizational processes in motion and forces people to critically examine the core assumptions underlying the current mode of operation. This does not suggest, however, that following fads cannot also be harmful. We only argue that the negative connotations of the words fad and fashion may not be justified in organizational contexts.

Like any research, this study has a number of limitations. The following reasons are among the most important in explaining why the tentative propositions concerning the motives for adopting the management accounting innovations presented in this study ought to be regarded as preliminary.

First, selecting one framework to assist data collection and interpretation poses problems. Our way of seeing is a way of not seeing. Although we found Abrahamson's typology useful, it appears somewhat limited as it does not account for change initiatives of a political nature. Moreover, the framework is silent with respect to one strand of literature explicitly addressing population characteristics, namely population ecology models (e.g. Hannan & Freeman, 1977). Moreover, theories of change based on claims that organizations change their structures and practices mainly in response to endogenous processes, but that such changes are only loosely coupled with the desires of managers and with the demands and threats of environments (March & Olsen, 1976; Weick, 1976), are similarly not accounted for by the framework adopted.

Second, it is difficult to weight the importance of various types of evidence gathered from a number of sources. For example, should more emphasis be put on the respondents' own accounts of their motives, on the similarity/dissimilarity of adopting

units, or on the accounts of observers of the adoption behaviour external to adopting units? The problem is accentuated in cases where different sources of evidence provide contradictory signals.

Third, both the timing of the study and the way motives were sought in the questionnaires cause problems. It may be that some respondents are unable to reconcile motives for certain actions some time after the fact. It also tends to be that most actions are explained in rational terms after the fact. Hence, the explanatory power of the respondents' own accounts of motives is difficult to interpret. Furthermore, the survey instrument used did not reliably differentiate between fashion and fad. In the questionnaire, the same variable, "the wish to try a new tool", is the most important indicator of both the fad and the fashion perspectives. This is particularly problematic with respect to the separation of the take-off phase from the subsequent phases, especially when the timing of the study did not allow us to study the whole diffusion process.

Fourth, there are problems related to the execution of surveys. Even though the response rate is relatively high (39.5% on average), there is a potential non-response bias. As discussed in the methods section, survey responses appeared to some extent biased towards large units. Although it was concluded that this bias should not be ruinous for the validity of the results of this study, we cannot conclude that the respondents are adequate surrogates for the whole target population. Despite these limitations, we believe this study makes an important contribution to management accounting research. This type of explorative research must be seen as generating insights on organizations rather than either providing or not providing support for pre-set assumptions.

How well do the propositions outlined in this study hold when other accounting innovations are considered? Mezas (1990) found that changes in financial accounting practices are influenced by institutions outside the adopting group. However, as the impacts of financial accounting innovations are often calculable, and as governments can force organizations to adopt financial accounting innovations through legislation, we may assume that

the propositions outlined in this study are less valuable in explaining the adoption of financial accounting innovations than they are in explaining management accounting innovations. On the other hand, given the current form of operation by fashion setting organizations (i.e. packaging innovations as “consulting products” like ABM, Balanced Scorecard, BPR), there is no reason to expect that these propositions would not hold when future management accounting or managerial innovations are considered.

The role of fads and fashions in shaping management accounting practices in contemporary organizations requires further inquiry. The applicability of the propositions derived in this study for other management accounting innovations and in different national contexts is of interest. The empirical separation of fad and fashion, coupled with the analysis of more complete diffusion processes, could provide more evidence on which perspectives drive the diffusion after the take-off phase. Further, the issue of how to weight the importance of various motives deserves attention. It would also be worthwhile to study whether fad or fashion as a motive for adoption is correlated to the success or failure of an innovation. Similarly, a detailed study on the interplay of academics, consultants, professional associations, and the media in creating management fashions could contribute substantially to our understanding of how and why new ideas are introduced in organizations. Moreover, longitudinal case studies focusing on how innovations are approached at various organizational stages would prove valuable in enhancing our understanding of how and why management accounting innovations either diffuse or not, and why management accounting systems are changed.

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### Appendix

#### Survey respondents

The table below presents the unit size by turnover (MFIM) for all respondents and for ABC users. The difference between the turnover among ABC adopters and the rest of the units in the sample was statistically significant (*t*-test,  $t = 2.76$ ,  $p < 0.05$ ). The difference between the number of personnel among ABC adopters and the rest of the units in the sample was also statistically significant (Mann–Whitney,  $p < 0.01$ ).

#### Unit size by turnover

Turnover (MFIM)	Mean	Median	Std dev
All respondents ( $N = 459$ ) <sup>a</sup>	286	90	610
ABC users ( $N = 107$ ) <sup>a</sup>	454	180	768

<sup>a</sup> Four company headquarters in the sample were excluded in computing these figures.

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*Papers and magazines*

	<i>Appears</i>
Kaupparehti	Daily
Talouselämä	Weekly
Kaupparehti Optio	Weekly
Tekniikka and Talous	Weekly
Fakta	Monthly
Ekonomi	Monthly
Yritystalou	Monthly
Konepajamies (metallitekniikka)	Monthly
Kehittyvä yritys	Monthly
Tilisanomat	Monthly
Tilintarkastus	Monthly

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