

Effective Factors of Activity-based Costing Application in SCM: A Review

S.Sharafi¹ and M.Zarei*¹

¹ Department of industrial Engineering College of Engineering, Shiraz Branch, Islamic Azad University Shiraz, Iran

Abstract: The world is getting smaller and competition is growing .In today's advanced manufacturing environment and competitive environment, accurate costing information is crucial for all businesses, such as manufacturing firms, merchandizing firms, and service firms. Activity-Based Costing system (ABC) has increasingly attracted the attention of practitioners and researchers alike as one of the strategic tools to aid managers for better decision making. Previous research on ABC have examined pertinent issues related to ABC implementation such as the levels of ABC adoption in various countries, the reasons for implementing ABC, the problems related to ABC and the critical success factors influencing ABC. This paper reviews the research on ABC carried out within the last decade. Specifically, this paper examines the selection of factors influencing ABC successful implementation, variables used by previous research. The review revealed that past research concentrated mainly on behavioral, organizational, and technical variables as the main determinants of ABC success. Several activity-based costing models for inter-firm cost accounting have been proposed. Evaluating these models, a conceptual framework for activity-based costing in a supply chain has been developed. These also forms the basis for a multi case study conducted at world's largest company for components.

Keywords: Supply chain management Cost management Activity-based costing Case study research

1. Introduction

Activity-based costing (ABC) has been developed by the industry in the US already in the 70's and 80's. It has gained broader awareness in businesses around 1988, when Cooper and Kaplan published a number of articles in the Harvard Business Review. In figure 1 the basic principle of traditional activity-based costing is demonstrated which is that all cost categories (e.g. personnel related cost, IT cost, building cost etc.) are assigned to activities.(Zondervan, 2009)

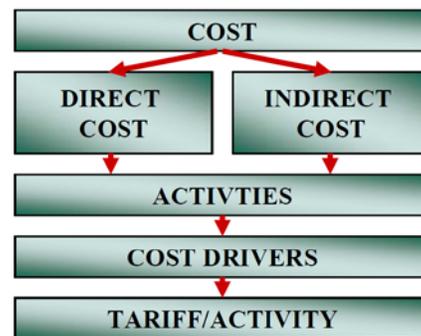


Figure 1: Traditional ABC(Zondervan,2009)

Additionally drivers are specified which determine the cost level, like orders, orderliness, number of products or square meters. Through the cost per activity and the volumes of the drivers, a tariff per activity can be calculated. Traditional activity-based costing is focusing on the assignment of all costs to activities. Originally, activity-based costing was mainly focused on production companies. Nowadays it is also implemented in types of business it

would not be expected, like hospitals, libraries, in large banking and telecom firms. Also in logistics, there are developments around activity-based costing, yet often it is still considered a financial tool. This is unfortunate, because although ABC is a cost analysis tool, it can be a great help for operational managers. (McGuire, Kocakulah, Wagers, 1998)

1.1 Different ways to use ABC

There are many different ways of activity-based management, which can be split in two main groups as displayed in figure 2:

1. Cost allocation handles the process of allocating cost of a department/organization to a certain customer and/or product. The outcome of activity-based costing can be used to determine the allocation. ABC is typically used to influence customer behavior and to assign cost as fair as possible

2. Another method of activity based management is cost reduction and analysis for which the outcome of the activity-based costing can be used as well. In this group the objective of using ABC is mainly to influence behavior within the department/business itself.



Figure2: Different ways to useABC (Zondervan, 2009)

2. Literature review: Overview of Activity based costing models for supply chain management

An overview of recent contributions regarding the development and application of

ABC models in the context of supply chain management is presented. Accordingly the contributions of LaLonde and Pohlen (1996); Dekker and van Goor (2000); Seuring (2002), M'oller and M'oller (2002), Bacher (2004) and Pohlen and Coleman (2005) are presented in the sequence of their publication. This list comprises all major contributions at the intersection of ABC and supply chain management, but are limited to such ones, where emphasis is placed on the overall supply chain, not just a selected decision or issue within it. For the purpose of this paper, it seems more appropriate and relevant to discuss these contributions in detail than outlining a wider range of literature. (Coleman 2005)

One of the early contributions that also coined the term "supply chain costing" is the paper by LaLonde and Pohlen (1996). In their paper, they point to the use of ABC and outline a six step process for managing costs across a supply chain. Their approach stays on a normative level where it is neither discussed how it can be applied, nor is an example provided. (Pohlen 1996)

Dekker and van Goor (2000) present a case study conducted in the Dutch pharmaceutical industry. It describes the cost-effective optimization of a three echelon supply chain (manufacturer wholesaler retailer). Their model focuses on logistical activities and the total supply chain costs are calculated by adding up the total ABC of each company. The core principle of this model is a joint definition of activities and cost drivers in order to determine the cost-effective consequences of any process reconfiguration (Dekker 2000)

Dekker and van Goor (2000) note that their model is only applicable for rough calculation of cost effects. Nevertheless, its power is described in a case study where the effect of inventory relocation from the manufacturer to the wholesaler is evaluated. Reflecting thoughts on transaction cost economics, and based on the insights of LaLonde and Pohlen (1996); Seuring (2002) presents a three step approach to ABC in supply chains. The first step "inter-company integration of process modeling" describes a top-down process analysis based on the SCOR

model (Stewart, 1997). Through a collaborative development of a unified process definition and, further, through a separation of costs into direct, process (activity-based), and transaction costs, it is possible to allocate costs to the different process steps and to model several process options. (Seuring 2000)

The second step “analysis of cost origins” of Seuring’s model aims at assessing which of the identified process costs could be modified by the company on its own, and which of the transaction cost elements are influenced by inter-company decisions. Seuring (2002) proposes a collaborative allocation of costs to the determined cost drivers, which forms a starting point for the third step “identification of cost modification opportunities”. As the developed process scheme and underlying cost allocation is too complex to optimize all factors at once, the defined processes and cost drivers can be used to evaluate trade-offs. In doing so, it is possible to assess different supply chain design decisions regarding their cost effectiveness. Consequently, managers can assess the total costs of any supply chain modification. Seuring (2002) explains the application of his model by a case study carried out in the apparel industry. It is shown how a reduction of colors of a textile producer leads to a significant reduction of supply chain costs, both for the textile producer and for the downstream apparel manufacturer.

Möller(2002) show how suppliers are integrated in the product development process based on an activity-based analysis of the total costs of supply. ABC information is used for pre-development budgeting purposes. This allows a determination of costs during product development and, finally, an evaluation of the performance of the suppliers. This is demonstrated in a case study conducted at ZF Friedrichshafen AG, a major supplier of the automotive industry. (Seuring 2002)

Möller(2002) calculate process costs using the standard ABC methodology. Based on a three-staged process scheme, cost driver information is summed up to calculate product costs according to the necessary production processes (drilling, tempering, etc.). These costs

serve as a target for determining a cost effective product structure and thus in selecting appropriate suppliers and supply chain structure.

Bacher (2004) picks up the conceptual model of Seuring (2002) and criticizes that it implicitly presumes the application of intra-company ABC on an inter-company level. Moreover, he questions whether every company is willing to share sensitive cost information. Against this background, he proposes a three-stage model in order to facilitate an inter-company quantification of cost information. Companies at the first stage jointly carry out process mapping initiatives and collaboratively identify cost drivers for every process activity. Based upon these definitions, process optimizations are elaborated and judged aiming to improve supply chain efficiency. On the second stage, companies assign cost information to the identified cost drivers in order to assess and optimize process performance. However, this is only carried out irregularly and based on a specific demand. In contrast, on the third stage, routines are developed to assign and exchange cost information continually. (Mouritsen et al., 2001).

Pohlen and Coleman (2005) propose a framework in which ABC is used to quantify the considerations of an economic value added (EVA) analysis in terms of costs. After collaboratively establishing strategic objectives for the supply chain and jointly mapping supply chain activities, a dyadic EVA analysis offers insights into how process changes drive value, and thus aligns operations performance with supply chain objectives.

Pohlen and Coleman (2005) state that by “incorporating all of the drivers of shareholder value, managers can move beyond cost-cost discussions, where one firm “loses” and another “wins”, to identify inter-firm opportunities that create value for both firms and the entire supply chain”. However, they continue: “successful inter-firm collaboration will directly depend on the ability to accurately measure and assign any resulting cost changes”. (Coleman 2005)

This task is taken over by ABC, which links value drivers and financial measurers of the

EVA-analysis with the associated operational measurers. Activity-based cost drivers are used to translate intra-firm non-financial changes in operational performance of any activity into costs and, subsequently, into financial performance. In doing so, ABC information is translated into assignable costs that can be applied to the particular partner being studied. However, as with the model of Bacher (2004), considerations regarding supply chain effectiveness are not taken into account as supply network is seen as a given fact.

It also has to be mentioned, that some papers, which use the term “supply chain costing” are very restricted in scope. Lin et al. (2001) just look at transport issues and are hence already listed above. As the overall just deal with logistics costs, their approach is much narrower than those already mentioned (Hsiu-Fen Lin, 2014)

2.1 Analysis of the presented ABC models

There are various supply chain management integration models Cooper and Slag Mulder, 2004 showed that those models can be distinguished into two categories. (Bechtel and Jayaram, 1997;; Van der Vaart and Van Donk 2004).

One group of authors is focusing on the product dimension of supply chain management whereas the other group focuses on its relationship dimension. Seuring (2009) takes up both dimensions and integrates them into the product- relationship-matrix, which he justifies against operations’ strategy and supply chain design literature. This framework is useful to analysis the conceptual cost models presented as it provides a summary of related decisions to be made in designing and operating a supply chain.

As briefly outlined, we therefore give a short overview of this framework. Building on life-cycle thinking, the dimensions are separated into two categories. The product dimension is split up into the phases of (1) product design (pre-phase), (2) production and logistics (market phase). The relationship dimension is split up into configuration (network design) and operation. In the first field “strategic configuration of product and network”, decisions are made concerning the kind of

products and services that are offered and with which supplier a company is willing to cooperate. The second field “product design” is concerned about utilizing the research and development know-how of the chosen suppliers. “Formation of the production network” covers the allocation of the specific production processes to each of the companies of the supply chain, and the decision on the related decoupling points. The fourth field targets efficiency increases, e.g. in terms of automation of technical processes or information technology. Summing up, tasks in the first and third field aim to achieve an effective supply chain design, whereas the second and fourth field focuses on increasing operational efficiency (Figure. 3).

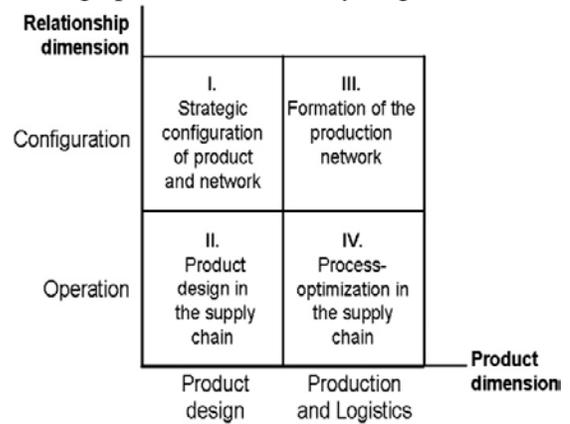


Figure3. The product-relationship-matrix of supply chain management

The first and third field aim to achieve an effective supply chain design, whereas the second and fourth field focuses on increasing operational efficiency (Figure3). This framework can be used for analyzing the ABC models presented above. Therefore, the following criteria will be used, which are briefly explained: As one major aspect, the supply chain configuration (network design in Fields I and III) is assessed: (1) The length of the chain (dyadic or multi-level (tier) supply chain), which indicates the number of company specific cost accounting systems and information have to be analyzed and thus integrated in the activity-based model. (Seuring, 2008)

Much research on supply chain management rather centers on focal companies for data

collection (2) the kind of business relationship (hierarchical vs. hierarchical coordination) (Hülsmann et al., 2008), as this influences the reluctance to share process and cost information. Thus activity-based models have to be applicable to the different types of coordination (Seuring, 2008)

However, most supply chain research just assumes that a focal company would be the main coordinator. (3) The content of the business relationship (kind of processes, products, etc.) are common parameters for structural analysis. Analyzing on how the ABC models shown deal with the intended use of cost information, parameters to measure efficiency increases have to be taken into account during operation (Fields II and IV). Related criteria are the following: (4) Standardized algorithms and data bases should be available to allow for supply chain-wide cost transparency. (5) Timely availability allowing continuous analysis of cost information (Mouritsen et al., 2001). Both (4 and 5) require

that an established cooperation among suppliers and customers is in place, so that open book accounting practices would be established. (6) Along with this, conceptual cost models must be customizable to individual supply chain structures and circumstances (Childerhouse et al., 2002)

Hence it is assessed, whether case study related research has been presented, where all papers present single case studies anyway. This is well in line with recent papers analyzing empirical case based research in supply chain management and all demand more research on longer part of it (Ali Diabat, Devika Kannan, K. Mathiyazhagan, 2014)

2.2 Comparison of previous research contribution to ABC in supply chain management

Table 1 showed the Comparison of previous research contribution to ABC in supply chain management.

Table1. Comparison of previous research contribution to ABC in supply chain management

1	Chain length focus on dyadic relationships	Irrespective of the debate on supply chain management, if a supply chain is constituted by two or more independent companies, many authors inherently “limit” their conceptual designs to dyadic relationships (Möller and Möller, 2002; Bacher, 2004; Pohlen and Coleman, 2005). Therefore analyzing a dyadic relationship may be not far-ranging enough for supply chain cost analysis, as multi-scale effects can turn dyadic trade-off calculations upside down (Goldbach et al. 2003).
2	Content of business relationship	The model of Möller and Möller (2002) mainly concentrates on one process the product development process, just as Seuring’s (2002) and Pohlen and Coleman’s (2005) conceptual models explicitly include all processes that contribute to a products value (e.g. product development, manufacturing, distribution, etc.).
3	Kind of business relationship	As outlined by Cooper and Slagmulder, 2004 in the Japanese automotive industry, it is especially the kind of business relationship, which determines the content and the kind of management accounting technique applied. Thus it is the kind of cooperation and its direction determining the applicability of the respective cost management approach.
4	Cost transparency standards and collaboratively defined standard chart of accounts	Dekker and van Goor (2000), Bacher (2004) and Pohlen and Coleman (2005) call for a collaborative definition of activity-based cost drivers. They argue that this approach reduces complexity and thus increases practicability.

5	Possibilities for ongoing, real-time data evaluation	This aspect shows the major weakness of all conceptual models. This is inherent in the standard ABC methodology. Regardless of the standard problem of a correct definition and allocation of activities to resources, data collection and processing is time consuming, particularly if products or processes are continually renewed.
6	Empirical evidence from a single case study	Last but not least, conceptual models have to be applicable to real supply chains. Dekker and van Goor (2000), Möller and Möller (2002) and Seuring (2002) discuss the practical application of their models by presenting case-based evidence.

3. Case study findings

3.1 implementation of ABC in South Africa

S Wessels, M Shotter (2000) Studied About Organizational problems in respect of the implementation of ABC in South Africa. In this study the extent and nature of organizational problems that are encountered in South Africa in respect of the implementation of ABC are examined and compared with difficulties experienced by companies in the British Isles, United States of America and Australia..(Wessels, Shotter 2000)

3.1.1 Empirical research methodology. The study investigated the nature and extent of organizational problems in South Africa by means of a survey. The investigation is based on a questionnaire for companies listed on the Johannesburg Stock Exchange (JSE) and circulated in November 1997 among 454 companies, representing all the companies listed in October 1997, excluding cash shell, pyramid, property and foreign companies. These companies were excluded, because they were not actively trading and therefore unlikely to use ABC.

3.1.2 Results of the empirical analysis. A response was received from 112 companies, resulting in a response rate of 24.67%. Of these 112 respondents, 17 attempted to implement ABC. Of the 17, 15 indicated that they are currently using ABC, i.e.13.39% of the total response. In order to determine whether a relationship exists between the success of the implementation of ABC in South Africa, and the problems experienced, respondents were asked to indicate how successful they would rate the

application of ABC in their organization(Wessels, Shotter 2000).

ABC is furthermore considered to be too time consuming for operational managers. Contrary to the findings of the studies in other countries, the South African companies consider the employee resources allocated to the ABC projects to be adequate and satisfactory.

Whatever the reason, it is clear that South African companies need not be discouraged by the problems that are perceived to be associated with the implementation of ABC. Although the degree of the success varies, 88% of the companies that implement ABC experience it as being successful. The extent of the aforementioned problems cannot outweigh the benefits to be derived from this revolutionary management technique.

3.2 adoption of ABC in Australia

Brown, Booth, Giacobbe (2007) Studied About Technological and organizational influences on the adoption of ABC in Australia. In this study A cross-sectional survey of Australian firms is used to examine the influence of seven technological and organizational factors on firms' initial interest in ABC and their decision to adopt it or not. The organizational factors of top management support, the support of an internal champion, and organizational size were shown to be associated with initial interest in ABC. The decision to adopt or reject ABC had one organizational factor associated with it, the support of an internal champion.(Brown, Booth, Giacobbe 2007)

3.2.1 Research method. The survey was conducted collaboratively between the

University of Technology, Sydney and the Strategic Business Management Centre of Excellence (SBMCOE) of Certified Practicing Accountants Australia (CPAA).

The following criteria were used to select members for inclusion in the survey against the information available in CPAA membership database: their job role was specified as financial controller, their field of employment was commerce and industry and they worked in any industry sector except agriculture, forestry and fishing, education, government administration and defense, health, community, personal and other services. (Brown, Booth, Giacobbe 2007)

3.2.2 Discussion the results of case study. By integrating the ABC unique factors identified in prior ABC adoption research with the well-developed range of explanatory factors previously used in IS innovation research, a set of four organizational factors (top management support, internal champion support, organizational size, and use of consultants) and three technological factors (level of overhead, product complexity and diversity, and relative advantage) that had a conceptual prima facie relevance to movement through the ABC adoption stages were identified.

The results showed the three factors were higher levels of top management support and internal champion support, and larger organizational size leading to initiation of interest in ABC activities. Organizational factors, such as the support on an internal ABC champion and top management support, as well as the greater discretionary staff and computing resources, maybe necessary for the firm to effectively act on the motivations for change and to facilitate a sustained and successful evaluation process and adoption decision. (Brown, Booth, Giacobbe 2007)

3.3 variables affecting the success of ABC success in China

Yi Fei and Ruhana Isa (2010) Studied about Behavioral and organizational variables affecting the success of ABC success in China. This case study replicates Shields's (1995) framework to examine the effect of behavioral and organizational variables on the ABC success

implementation by using a sample of 106 Chinese manufacturing firms.

ABC was introduced to address the shortcomings of traditional volume-based costing system. Due to its abilities to provide more accurate costing information for strategic decision, ABC has attracted the attention of both practitioners and researchers (YiFei , Ruhana Isa 2010).

3.3.1 Methods for Sample .In this Case Study, large sized manufacturing firms were chosen for research. Chief Financial Officers (CFO) or Financial Controllers are consider as suitable respondents for this research due to they are familiar with management accounting system and responsible for designing the management accounting system.

This Case study adopts McGowan (1998)'s measure for the success of ABC. In McGowan's (1998) research, he divided the success of ABC down into four perspectives, namely users' attitude, technical characteristics rating, perceived usefulness in improving user job performance and impact on organizational process. In this case study, technical characteristics were composed of five aspects: accuracy, accessibility timeliness, reliability and understandability. Respondents needed to make a comparison between ABC information and information produced by the previous traditional accounting systems. (Yi Fei ,Ruhana Isa 2010).

3.3.2 Discussion and Conclusions about This Case Study. In this Case study, only top management support was found to be associated with ABC success positively and significantly. Firms also stated that in their firm's top management provide visible support to ABC implementation and have a clear commitment to apply information supplied by ABC as the basis for decision making. (YiFei , Ruhana Isa 2010). This study found an insignificant relationship between ABC success and link ABC to performance measurement and evaluation might be due to the Chinese national culture. (Brewer, 1998; Supitcha et al., 2001).

In additional, an insignificant relationship was found between non-accounting ownership, link ABC to competitive strategy, as well as clarity of ABC objectives and ABC success might be

possible that most of firms in this study are at an early stage of ABC implementation (YiFei , Ruhana Isa 2010).

Table 2 showed the Summary of Case Study Finding in contries.

Table 2: Summery of Case Study Finding

	Case	Research method	Results of case study
1	South Africa	The investigation is based on a questionnaire for companies listed on the Johannesburg Stock Exchange (JSE) and circulated in November 1997 among 454 companies, representing all the companies listed in October 1997, excluding cash shell, pyramid, property and foreign companies.	South African companies need not be discouraged by the problems that are perceived to be associated with the implementation of ABC. Although the degree of the success varies, 88% of the companies that implement ABC experience it as being successful. The extent of the aforementioned problems cannot outweigh the benefits to be derived from this revolutionary management technique.
2	Australia	The survey was conducted collaboratively between the University of Technology, Sydney and the Strategic Business Management Centre of Excellence (SBMCOE) of Certified Practicing Accountants Australia (CPAA). The following criteria were used to select members for inclusion in the survey against the information available in CPAA membership database: their job role was specified as financial controller, their field of employment was commerce and industry and they worked	The resultsshowed the three factors were higher levels of top management support and internal champion support, and larger organizational size leading to initiation of interest in ABC activities. Organizational factors, such as the support on an internal ABC champion and top management support, as well as the greater discretionary staff and computing resources,maybe necessary for the firm to effectively act on the motivations for change and to facilitate a sustained and successful evaluation process and adoption decision.
3	China	In this Case Study, large sized manufacturing firms were chosen for research. This Case study adopts McGowan (1998)'s measure for the success of ABC. In	In this Case study, only top management support was found to be associated with ABC success positively and significantly. Firms also stated that in their firm's top management provide visible support to

	<p>McGowan's (1998) research, he divided the success of ABC down into four perspectives, namely users' attitude, technical characteristics rating, perceived usefulness in improving user job performance and impact on organizational process. In this case study, technical characteristics were composed of five aspects: accuracy, accessibility timeliness, reliability and understandability. Respondents needed to make a comparison between ABC information and information produced by the previous traditional accounting systems.</p>	<p>ABC implementation and have a clear commitment to apply information supplied by ABC as the basis for decision making. This study found an insignificant relationship between ABC success and link ABC to performance measurement and evaluation might be due to the Chinese national culture.</p>
--	--	--

4. Conclusion

In this paper studied Applying ABC in a supply chain management and discussed case study about Technological and organizational influences on the adoption of ABC in some countries. The result showed the top management support can produce a positive impact on the ABC success in Chinese manufacturing firms.

This paper revealed that actual approaches focus only on certain aspects of supply chain management .The case study revealed that standardized cost information, i.e. an ABC tool implemented at all supply chain members, can support related supply chain decisions. Through

standardization of cost information activities, processes can be assessed regarding an effective overall design and an efficient performance. Another point is that the case study focused on production and distribution issues, although cost aspects of e.g. product development in supply chains should also be investigated to validate the model. The future direction of ABC adoption research has a number of options that could be explored. the ABC stages model could be applied to a larger sample that is more representative of a cross-section of Australian or international industry which would provide both further generalizability to the model and an opportunity for more powerful statistical testing.

References

1. A. Zondervan, 2009, Activity-Based Costing and management in the supply chain, Grow new out hand book, Ed 1.
2. Ali Diabat, Devika Kannan, K. Mathiyazhagan, Analysis of enablers for implementation of sustainable supply chain management – A textile case, Journal of Cleaner Production, Volume 83, 15 November 2014, Pages 391-403.
3. Askarany, D., Yazdifar, H., 2011. An investigation into the mixed reported adoption rates for ABC: evidence from Australia, New Zealand and the UK. International Journal of Production Economics.
4. Bechtel, C., Jayaram, J., 1997. Supply chain management : a strategic perspective. The International Journal of Logistics Management 8 (1), 15–34.
5. BenArieh, D., Qian, L., 2003. Activity-based cost management for design and development stage. International Journal of Production Economics 83(2), 169–183.
6. Berling, P., 2008. Holding cost determination: an activity-based cost

- approach. *International Journal of Production Economics* 112 (2), 829–840.
7. B.L. McGuire, M.C. Kocakulah and L.G Wagers, 1998, Implementing activity-based management in the banking industry, *Journal of Bank Cost & Management Accounting*.
 8. Cooper, R., Slag Mulder R., 2004. Inter organizational cost management and relational context. *Accounting, Organizations and Society* 29(1), 1–26.
 9. David A. Brown, Peter Booth, Francesco Giacobbe, 2004, " Technological and organizational influences on the adoption of activity-based costing in Australia", *Accounting and Finance* 44 (2004) 329–356, Blackwell Publishing.
 10. Dekker, H.C., van Goor, A.R., 2000. Supply chain management and management accounting: a case study of activity based costing. *International Journal of Logistics: Research and Applications* 3 (1), 41–52.
 11. Gunasekaran, A., Ngai, E.W.T., 2005. Build-to-order supply chain management: a literature review and framework for development. *Journal of Operations Management* 23(5), 423–451.
 12. Hennet, J.-C., Mahjoub, S., 2010. Toward the fair sharing of profit in a supply network formation. *International Journal of Production Economics* 127(1), 112–120.
 13. Hsiu-Fen Lin, Understanding the determinants of electronic supply chain management system adoption: Using the technology–organization–environment framework, *Technological Forecasting and Social Change*, Volume 86, July 2014, Pages 80-92.
 14. Jones, D., Hines, P., Rich, N., 1997. Lean logistics. *International Journal of Physical Distribution and Logistics Management* 27(3/4), 153–157.
 15. Kaplan, R.S., Anderson, S.R., 2004. Time-driven activity-based costing. *Harvard Business Review* 82(6), 131–138.
 16. LaLonde, B.J., Pohlen, T.L., 1996. Issues in supply chain costing. *The International Journal of Logistics Management* 7(1), 1–12.
 17. Möller, G., Möller, K., 2002. Konstruktionsbegleitendes Supply Chain Controlling mit prozeßorientiertem Kostenmanagement. in: Hahn.
 18. Pohlen, T., Coleman, B.J., 2005. Evaluating internal operations and supply chain performance using EVA and ABC. *SAM Advanced Management Journal* 70(2), 45–58.
 19. Seuring, S., 2002a. Supply chain costing a conceptual framework. in: Seuring, S., Goldbach, M. (Eds.), *Cost Management in Supply Chains*, Physica, Heidelberg, pp. 16–30.
 20. Seuring, S., 2002b. Supply Chain Costing. in: Franz, K.P., Kauter, P. (Eds.), *Kostenmanagement Wertsteigerung durch systematische Kostensteuerung* 2nd ed., Schäffer-Poeschl, Stuttgart, pp. 5–27.
 21. Seuring, S., 2009. The product-relationship-matrix as framework for strategic supply chain design based on operations theory. *International Journal of Production Economics*, 1–12. doi:10.1016/j.ijpe.2008.07.021.
 22. Thyssen, J., Israelsen, P., Jørgensen, B., 2006. Activity-based costing as a method for assessing the economic of modularization a case study and beyond. *International Journal of Production Economics* 103(1), 252–270.
 23. Tornberg, K., Jørgensen, M., Paranko, J., 2002. Activity based costing and process modeling for cost-conscious product design: a case study in a manufacturing company. *International Journal of Production Economics* 79(1), 75–82.
 24. Vander Vaart, T., Van Donk, D.P., 2004. Buyer focus: evaluation of a new concept for supply chain integration. *International Journal of Production Economics* 92 (1), 21–30.
 25. Van der Vaart, T., van Donk, D.-P., 2008. A critical review of survey-based research in supply chain integration. *International Journal of Production Economics* 111 (1), 42–55.
 26. Voss, C., Tsikriktsis, N., Frohlich, M., 2002. Case research in operations management. *International Journal of Operations & Production Management* 22(2), 195–219.
 27. Wessels, M., Shotton, 2000., Organizational problems in respect of the implementation of

- activity-based costing in South Africa, *Meditari Accountancy Research* Vol. 8 2000: 215-227 .
28. M.J.F.,1994.Decision orientation of activity-based costing. *International Journal of Production Economics*36(1),75–84.
29. Zimmermann,K.,Seuring,S.,2009.Two case studies on developing ,implementing and evaluating a balanced score card in distribution channel dyads. *International Journal of Logistics: Research and Application* 12(1),63–81.
30. Zhang Yi Fei , CheRuhana Isa, 2010, Behavioral and organizational variables affecting the success of ABC success in China, *African Journal of Business Management* Vol. 4(11), pp. 2302-2308.
31. Zhang Yi Fei, CheRuhana Isa,2010, Factors Influencing Activity-Based Costing Success: A Review, *Proceedings of 2010 International Conference on Business, Economics and Tourism Management*.