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Ranking the Criteria of ABC Implementing and Lunching by FAHP in Iranian Automobile Industry

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Abstract: Activity based costing system is one approach which its lunching and implementing in practice will bring advantages for the users. The present study tried to point out factors affecting launching and implementing Activity Based Costing System among in Iranian automobile industry companies; Fuzzy AHP was employed as one of the important items regarding multi-criteria decision making. Finally, those factors were ranked according to their importance. To this end, first of all, major factors were classified and ranked into four main groups such as; organizational, environmental, individual, and technical factors; then minor factors were examined and then ranked. Regarding results of Fuzzy AHP technique, organizational factors are the most important ones and then are individual, technical, and environmental ones and among all minor factors, enough and on time training, considering informational needs of different sections of the organization, logical timing of the designing and running and participation of non financial segments in planning and running system are of vital importance. Enough attention to factors affecting launching and implementing Activity Based Costing System is of crucial help for useful application and more efficiency of such systems and managements should try to put the approaches suggested in such an article from theory to practice consciously.

Key word: Activity Based Costing System, Fuzzy AHP, Factors, Launching, Implementing.

INTRODUCTION

In global developed and competitive markets, to be adapted with competitive environment, dynamic and complicated environment is essential for organization to continue their activity. For this purpose, many information systems have been presented for services and product costing and budgeting, cost – reducing, continuous improvement, performance measurement,… and eventually value–adding (Khozein, 2009). Traditional cost system using some cost drivers supported financial and budget reporting in a wrong way and presented many false information. In such a condition, many organizations have been trying to improve their costing systems. Improved costing system is a system for evaluating the source usage through services, production or consumers in an effective way. Technology Developing and competition increasing were an effective factor for designing such a system. One new method was ABC (Activity Based Costing) which is of many advantages compared to traditional costing system based on volume. So in order to enjoy its advantage, companies are willing to implement ABC system. They should implement ABC systems consciously, intelligently and conservatively.

Practically, Activity Based Accounting System recognizes the relationship between necessary activities and costs in order to render services which make economic value for the organization (Horngren, *et al*., 2005). Activity Based Accounting System is derived from this belief that products use activities and activities use resources and it leads to decimation of value adding activities and non-value adding activities (Wickramsinghe and Alawattage, 2007). In fact, by the use of this method, cost of each product or service equals total cost of activities relevant to the production at that product or service. In traditional costing, costs are generally allocated on the basis of the volume while according to the costing thinking and activity based management, products and the produced services are not directly users of the resources but are users of the activities (Johnson and Kaplan, 1987).

Therefore, Activity Based Accounting System is one of the most modern costing systems; such as system can alone or with current costing systems be applied to provide essential information to make decisions (Horngren, *et al*., 2005). As the zone of market changes, companies as well as organizations try world competitions in which more and more information and technology of information is of need to win. ABM and ABC are of pioneer systems in this field (Kuchta and Troska, 2007) and have made organizations and companies use them. If we are aware of factors affecting implementing and running, it will help the system to reach its goals successfully and prevents waste of financial as well as intellectual capital and then leads to more organizational participation and trust (Cokins, 1996) Companies that implement activity based costing run the risk of spending too much time, effort, and even money on gathering and going over the data that is collected. Too many details can prove frustrating for managers involved in ABC. On the other hand, a lack of detail can lead to insufficient data.

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Another obvious factor that tends to contribute to the downfall of activity based costing is the simple failure to act on the results that the data provide (Khozein, 2009). This generally happens in businesses that were reluctant to try ABC in the first place. Now, it is time to refer to the research question:

- What are ranking major and minor factors implementing and launching Activity Based Costing System among Iranian automobile industry companies?

Review of the literature:

ABC system can be taken into account as a development and extension of two-stage assignment for costing and is underlying for modern cost system, measuring products and program cost, more efficient operational budgeting and appropriate product pricing (Khozein, 2009). ABC system will put an emphasis on activity as a cost object since activity is the main reason for costing. In such a system first, costing will be assigned to the activities and then through the activities, it will be given to other objects such as programs, plans, products, services (Cokins, 1996). Having, determined the cost, the managers will give much more credence to the new cost object i.e. activities. Measuring the products and program cost appropriately, product price, product processing improvement, eliminating the additional activities, identifying the cost drivers, value added activities identification, eliminating non value added activities, operation programming, determining trade strategy of entity and finally measuring its operation appropriately need some information provided by ABC system much better compared to the management accounting traditional systems.

Horngren, *et al*., (2005) believes that Activity Based Accounting System is one the most modern costing systems which can provide proper information for decision making. Prior to this, Cooper and Kaplan (Cooper and Kaplan, 1991) claimed that companies can decrease costs, run modern pricing politics, recognize improvement opportunities and specify product combinations if they apply reliable financial statements approved by Activity Based Costing System system. Most ABC practitioners find that special-purpose ABC software is required to make the task manageable (Henricks, 1999).

Gary Cokins (1999) wrote an article aimed at certified public accountants that have difficulty embracing activity based costing. In "Learning to Love ABC", Cokins explains that activity based costing usually works best with a minimum amount of detail and estimated cost figures. He backs this up by stating that "typically, when accountants try to apply ABC, they strive for a level of exactness that is both difficult to attain and time-consuming-and that eventually becomes the project's kiss of death." Cokins (2000) wrote another article entitled "Overcoming the Obstacles to Implementing Activity-Based Costing." In this work Cokins noted that "activity-based costing projects often fail because project managers ignore the cardinal rule: It is better to be approximately correct than to be precisely inaccurate. When it comes to ABC, close enough is not only good enough; close enough is often the secret to success." Cokins also notes that the use of average cost rates, the use of overly detailed information, and the failure to connect information to action can also hinder ABC projects. By understanding these concepts, Cokins feels that CPAs can enhance their roles as business partners and consultants.

Cokins (1996) classified problems (failures) ahead of running costing projects and activity based management into four categories which are as follows: the biggies or showstoppers, the users' rejection, the organization obstacles and the nuisances. Some of the items include: unemploying all financial and nonfinancial sections of the organization, lack of enough and on time training, courage of implementation team, full time work, grossly underestimating of the magnitude of resistance to change, underestimating the degree of disbelief of the newly calculated numbers by project team, overengineering the design of the new system, autocratically mandating the new system by higher-level organization unit, and …(Cokins, 1996). Cokins in his following findings asserted that 90 percent of success in implementation and running Activity Based Costing System is due to organizational factors and the rest due to math factors. Accountants as well as other organization sections are responsible for implementing such system. To this aim, factors such as education and plan to implement and communicate, true selection of activity are of importance (Cokins, 2001). Since too much attention to essential technical considerations to implement is necessary, little attention is paid to withstanding versus implementation (Rotch, 1995). To sum up, Activity Based Accounting System is better and more accurate in comparison with traditional Accounting system, though there are a lot of obstacles ahead of them. One of the biggest problems that this system faces is that companies know how to implement a new system but they do not know enough why they should do such activities and ignore them (Kuchta and Troska, 2007).

Khozein *et al*., (2011) tried to point out major factors affecting launching and implementing Activity Based Costing System among Iranian companies. To this end, major factors were classified and ranked into five main groups such as; organizational, managerial, environmental, individual, and technical factors. Regarding results organizational factors are the most important ones and then are Managerial, environmental, individual, and technical ones.

Thus regarding former researches, factors affecting implementing and running Activity Based Costing Systems in Iranian automobile industry companies are classified into four groups such as: organizational, individual, environmental and technical factors; minor factors are shown in table 3. Organizational factors

consider formal and informal relationships between employees and managers. These factors can be controlled and managed by managers. On the other hand, environmental factors are related to conditions which are outside the enterprise and managers can not control them. Individual factors include characteristics and attribute of the planning and implementing (project) team. Finally, technical factors contain items which are derived from the nature of Activity Based Costing and Management System (Khozein *et al*., 2011). The present study tries to prioritize and rank such factors.

Research Method:

In this research, first of all, factors (criteria) affecting implementing and launching ABC System were recognized then using Fuzzy Analytical Hierarchy Process (FAHP) they were ranked. Analytic Hierarchy Process (AHP) is one of the well-known Multi-criteria decision making techniques that was first proposed by Saaty (1980). Although the classical AHP includes the opinions of experts and makes a multiple criteria evaluation, it is not capable of reflecting human's vague thoughts. The classical AHP takes into consideration the definite judgments of decision makers (Wang and Chen, 2007). Different methods for the fuzzfication of AHP have been proposed in the literature. Experts may prefer intermediate judgments rather than certain judgments. Thus the fuzzy set theory makes the comparison process more flexible and capable to explain experts' preferences (Kahraman, Cebeci and Ulukan, 2003).

Fuzzy set theory-Zadeh in 1965 introduced fuzzy set theory to solve problems involving the absence of sharply defined criteria (Zadeh, 1965). If uncertainty (fuzziness) of human decision-making is not taken into account, the results can be misleading. A commonality among terms of expression, such as "very likely", "probably so", "not very clear","rather dangerous" that are often heard in daily life, is that they all contain some degree of uncertainty (Tsaur, Tzeng, and Wang, 1997: Tsaur, Chang, and Yen, 2002). Fuzzy theory thus is used to solve such kind of problems, and it has been applied in a variety of fields in the last four decades. Theory of fuzzy sets has evolved in various directions, and two distinct directions are: treating fuzzy sets as precisely defined mathematical objects subject to the rules of classical logic, and the linguistic approach. The underlying logic of linguistic approach is that the truth-values are fuzzy sets and the rules of inference are approximate rather than exact (Gupta, Saridis and Gaines, 1977). A triangular fuzzy number, a special case of a trapezoidal fuzzy number, is very popular in fuzzy applications. As shown in Fig. 1, the triangular fuzzy number $\tilde{M}$ is represented by (a,b,c), and the membership function is defined as:

(1)

$$\mu_{\tilde{M}}(x) = \begin{cases} \dfrac{x-a}{b-a}, & a \le x \le b \\ \dfrac{c-x}{c-b}, & b \le x \le c \\ 0, & otherwise \end{cases}$$

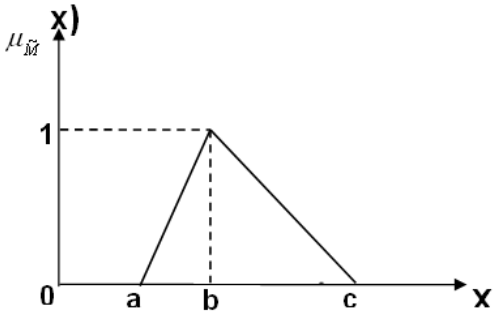

Fig. 1: Membership function of a triangular fuzzy number. $\tilde{M} = (a, b, c)$

The strongest grade of membership is parameter b, that is, $f_M(b) = 1$, while *a* and *c* are the lower and upper bounds.An important concept of fuzzy sets is the $\alpha - cut$. For a fuzzy number $\tilde{M}$ and any number $\alpha \in [0,1]$, the $\alpha - cut$, C_α, is the crisp set (Klir and Yan, 1995).

(2)

$$C_\alpha = \{x | C(x) \geq \alpha\}$$

The a-cut of a fuzzy number $\tilde{M}$ is the crisp set $\tilde{M}^\alpha$ that contains all the elements of the universal set U whose membership grades in $\tilde{M}$ are greater than or equal to the specified value of α, as shown in Fig. 2.

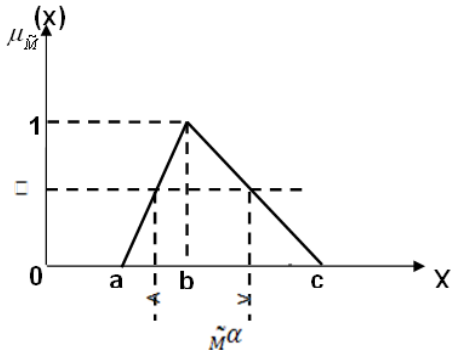

Fig. 2: $\alpha - cut$ of a triangular fuzzy number $\tilde{M}$.

By defining the interval of confidence at level a, the triangular fuzzy number can be characterized as (Cheng 1999: Cheng 1996: Cheng and Mon 1994).

(3)

$$\tilde{M}^{\alpha} = \left[a^{\alpha}, C^{\alpha}\right] = \left[(b-a)\alpha + a, -(c-b)\alpha + c\right], \forall \alpha \in [0,1]$$

The distance between two triangular fuzzy numbers can be defined by the vertex method (Chen, 2000). Let $\tilde{M}_1 = (a_1, b_1, c_1)$ and $\tilde{M}_1 = (a_1, b_1, c_1)$ be two triangular fuzzy numbers, the distance between them is:

(4)

$$d(\tilde{M}_1, \tilde{M}_2) = \sqrt{\frac{1}{3}[(a_1 - a_2)^2 + (b_1 - b_2)^2 + (c_1 - c_2)^2]}$$

Many different methods have been devised to rank fuzzy numbers, and each method has its own advantages and disadvantages (Klir & Yan, 1995). A popular method is the intuition ranking method, which ranks triangular fuzzy numbers by drawing their membership function curves. A higher mean value and lower spread fuzzy number is preferred by human intuition (Lee and Li 1988). Another popular fuzzy number ranking method is the a-cut method (Adamo 1980). Centroid ranking method is also often used to rank fuzzy numbers (Yagar 1978). A fuzzy mean and spread method was proposed by Lee and Li (1988) by using a generalized mean and standard deviation based on the probability measures of fuzzy events. A good decision-making model needs to tolerate vagueness or ambiguity because fuzziness and vagueness are common characteristics in many decision-making problems (Yu, 2002). Since decision makers often provide uncertain answers rather than precise values, the transformation of qualitative preferences to point estimates may not be sensible. Conventional AHP that requires the selection of arbitrary values in pairwise comparison may not be sufficient and uncertainty should be considered in some or all pairwise comparison values (Yu, 2002). Since the fuzzy linguistic approach can take the optimism/pessimism rating attitude of decision makers into account, linguistic values, whose membership functions are usually characterized by triangular fuzzy umbers, are recommended to assess preference ratings instead of conventional numerical equivalence method (Liang and Wang 1994). As a result, the fuzzy AHP should be more appropriate and effective than conventional AHP in real practice where an uncertain pairwise comparison environment exists.

Fuzzy analytic hierarchy process (FAHP)- FAHP is used to generate the weighting of the four factors of the launching and implementing Activity Based Costing System. There are six essential steps:

1. Construct the hierarchical structure with decision elements (e.g., criteria and detailed criteria). Each decision maker is asked to express relative importance of two decision elements in the same level (e.g. two criteria) by a nine-point scale. Collect the scores of pairwise comparison, and form pairwise comparison matrices for each of the *K* decision makers.

2. Analyze consistency. The priority of the elements can be compared by the computation of eigenvalues and eigenvectors:

(5)

$$A \cdot w = \lambda_{max} . w$$

Where *w* is the eigenvector, the weight vector, of matrix R, and kmax is the largest eigenvalue of R.The consistency property of the matrix is then checked to ensure the consistency of judgments in the pairwise comparison. The consistency index (CI) and consistency ratio (CR) are defined as (Saaty 1980).

(6)

$$CI = \frac{\lambda_{max} - n}{n-1}$$

(7)

$$CR = \frac{CI}{RI}$$

Where *n* is the number of items being compared in the matrix, and *RI* is random index, the average consistency index of randomly generated pairwise comparison matrix of similar size, as shown in Table 1. As suggested by Saaty (1994), the upper threshold CR values are 0.05 for a 3*3 matrix, 0.08 for a 4*4 matrix, and 0.10 for larger matrices. If the consistency test is not passed, the original values in the pairwise comparison matrix must be revised by the decision maker.

Table 1: Random index (RI) (Saaty, 1980).

15	14	13	12	11	10	9	8	7	6	5	4	3	N
1.59	1.57	1.56	1.48	1.51	1.19	1.45	1.41	1.32	1.24	1.12	0.90	0.58	RI

3. Construct fuzzy positive matrices. The scores of pairwise comparison are transformed into linguistic variables,which are represented by positive triangular fuzzy numbers listed in Table 2.

Table 2: Triangular fuzzy numbers.

Linguistic variables	Positive triangular fuzzy numbers	Positive reciprocal triangular fuzzy numbers
Extremely Strong	(9,9,9)	(1/9,1/9,1/9)
Intermediate	(7,8,9)	(1/9,1/8,1/7)
Very Strong	(6,7,8)	(1/8,1/7,1/6)
Intermediate	(5,6,7)	(1/7,1/6,1/5)
Strong	(4,5,6)	(1/6,1/5,1/4)
Intermediate	(3,4,5)	(1/5,1/4,1/3)
Moderately Strong	(2,3,4)	(1/4,1/3,1/2)
Intermediate	(1,2,3)	(1/3,1/2,1)
Equally strong	(1,1,1)	(1,1,1)

According to Buckley (1985),the fuzzy positive reciprocal matrix can be defined as:

(8)

$$\widetilde{R}^k = \left[\widetilde{r}_{ij}\right]^k$$

Where $\widetilde{R}^k$:a positive reciprocal matrix of decision maker k;
$\widetilde{r}_{ij}$: relative importance between decision elements i and j;

$$\widetilde{r}_{ij} = 1 \ , \ \forall i = j \ , \text{and} \ \ \widetilde{r}_{ij} = \frac{1}{\widetilde{r}_{ji}} \ , \ \forall_{i,j} = 1.2,...,n$$

4. Calculate fuzzy weights. Based on the Lambda–Max method proposed by Csutora and Buckley (2001), calculate the fuzzy weights of decision elements. The procedures are:

• Apply $\alpha - cut$. Let $\alpha = 1$ to obtain the positive matrix of decision maker k, $\widetilde{R}_b^k = \left(\widetilde{r}_{ij}\right)_b^k$,and let $\alpha = 0$ to obtain the lower bound and upper bound positive matrices of decision maker k, $\widetilde{R}_a^k = \left(\widetilde{r}_{ij}\right)_a^k$ and $\widetilde{R}_c^k = \left(\widetilde{r}_{ij}\right)_c^k$ .Based on the weight calculation procedure proposed in AHP, calculate weight matrix,

$$W_b^k = \left(w_i\right)_b^k \text{،} \ \ W_a^k = \left(w_i\right)_a^k \ \text{and} \ \ W_c^k = \left(w_i\right)_c^k \text{،} \ \ i = 1,2,3,...,n$$

• In order to minimize the fuzziness of the weight, two constants, M_a^k, M_c^k and,are chosen as follows:

(9)

$$M_a^k = \min\left\{\frac{W_{ib}^k}{W_{ia}^k} \middle| 1 \le i \le n\right\}$$

(10)

$$M_c^k = \max\left\{\frac{W_{ib}^k}{W_{ic}^k} \middle| 1 \le i \le n\right\}$$

The upper bound and lower bound of the weight are defined as:

(11)

$$w_{ia}^{*k} = M_a^k \cdot w_{ia}^k$$

(12)

$$w_{ic}^{*k} = M_c^k \cdot w_{ic}^k$$

The upper bound and lower bound weight matrices are:

(13)

$$W_a^{*k} = \left(w_i^*\right)_a^k \quad i = 1,2,..., n$$

(14)

$$W_c^{*k} = \left(w_i^*\right)_c^k \quad i = 1,2,..., n$$

• By combining W_a^{*k}, W_b^k and W_c^{*k},the fuzzy weight matrix for decision maker k can be btained and is defined as

$$\tilde{W}_i^k = \left(w_{ia}^{*k}, w_{ib}^k, w_{ic}^{*k}\right),\ i = 1,2,..., n$$

5. Integrate the opinions of decision makers. Geometric average is applied to combine the fuzzy weights of decision makers

(15)

$$\bar{\tilde{W}}_i = \left(\prod_{k=1}^{k} \tilde{W}_i^k\right)^{\frac{1}{k}} \quad ، \forall k = 1,2,..., K$$

where

$\bar{\tilde{W}}_i$:combined fuzzy weight of decision element i of K decision makers.

$\tilde{W}_i^k$:fuzzy weight of decision element i of decision maker k.

K: number of decision makers.

6. Obtain final ranking. Based on the equation proposed by Chen (2000), a closeness coefficient is defined to obtain the ranking order of the decision elements. The closeness coefficient is defined as follows:

(16)

$$CC_i = \frac{d^-(\bar{\tilde{W}}i, 0)}{d^*(\bar{\tilde{W}}i, 1) + d^-(\bar{\tilde{W}}i, 0)} \quad ، \quad i = 1,2,..., n$$

$$0 \le CC_i \le 1$$

where CC_i is the weight for decision element i, and

(17)

$$d^-(\bar{\tilde{W}}i, 0) = \sqrt{\frac{1}{3}[(\bar{W}_{ia} - 0)^2 + (\bar{W}_{ib} - 0)^2 + (\bar{W}_{ic} - 0)^2]}$$

(18)

$$d^{*}(\overline{\widetilde{W}}\,i,0) = \sqrt{\frac{1}{3}[(\overline{W}_{ic} - 1)^{2} + (\overline{W}_{ib} - 1)^{2} + (\overline{W}_{ic} - 1)^{2}]}$$

$d^{-}(\overline{\widetilde{W}}i,0)$ and $d^{*}(\overline{\widetilde{W}}i,1)$ are the distance measurement between two fuzzy numbers.

The respondent of this research were managers, financial managers, researchers, university professors and experts of ABC system. For gathering data needed for FAHP tables, the researchers used interviews, questionnaire and making expert work groups. After recording the answers, combining pair wise comparison matrix for each participant would be started.

Data input and analysis:

Computer software packages, such as the Expert Choice Expert Choice, 2006, have been applied abundantly in solving AHP problems. The responses collected from questionnaires are input to the FAHP system, and the results are analyzed by the FAHP. The pairwise comparison results of decision makers filled on the questionnaires are then input by selecting the number on the nine-point scale as is shown in table 2. Maximum eigenvalue of the matrix is calculated by Eq. (5), and the consistency property of the matrix is checked by Eqs.(6) and (7). If the consistency test is not passed, the questionnaire can either be revised by the decision maker or be disregarded. In this research the consistency rate is 0.0347 that is acceptable. Fuzzy positive matrices based on the input questionnaire results are generated next by Eq. (8) and Eqs. (9)– (14) are adopted next to calculate the comparison weights of decision elements. The fuzzy weights from different decision makers are finally combined by Eq. (15) to generate the overall fuzzy matrix, as shown in table 3.The final priority weights and ranking are obtained by Eq. (16).

RESULTS AND DISCUSSION

In this study, the effect of 26 minor factors (criteria) in 4 major groups on implementing and launching Activity Based Costing System among some accepted companies in Tehran Stock Exchange were examined. As table 3 illustrates, regarding findings of the research, the importance of organizational factors (0.308) is more than other factors; then are other factors such as: individual factors (0.293), technical factors (0.202), and environmental factors (0.197). Among organizational factors, enough and on time training (0.0681), considering informational needs of different sections of the organization (0.0650), and Participation of non financial segments in planning and running system (0.0625), is more than other factors. Among individual factors, logical timing of the designing and running (0.0627), eligibility of the designing team (0.0612), and full time work of project team (0.0577) is more than other factors. Among technical factors, the strong correlation of reinforces and costs (0.0440), finding the clear cost objects (0.0416) and considering all costs of chain value (0.0414) is more than other factors. Among environmental factors, standardization and directions relevant to the new system (0.0451) and shortage of papers, research and books (0.0408) is more than other factors.

Among all minor factors, enough and on time training, considering informational needs of different sections of the organization, logical timing of the designing and running and participation of non financial segments in planning, running system, eligibility of the designing team, monitoring and supervising the operation and full time work of project team are of vital importance; and logical timing of the designing and running, little contradiction between the results taken from the new system, applying simulating techniques are the least important factors.

Conclusion:

To implement new informational management and budgeting systems like ABC in organization is inevitable. So, for many different reasons the success is such systems when they are implementing is not so much. Such reasons can be classified in the four following groups including organizational factors, environmental factors, individual factors and technical factors. The best solution to the problems existing for implementing ABC systems is to train employees and managers in a good way and to make them much more aware of the new system and also to introduce their advantages in the organization concerned. Activity based costing programs require proper planning and a commitment from upper management. If possible, it is best to do a trial study or test run on a department whose profit making performance is not living up to expectations. These types of situations have a greater chance of succeeding and showing those in charge that ABC is a viable way for the company to save money. If no cost-saving measures are determined in this pilot study, either the activity-based costing system has been improperly implemented, or it may not be right for the company.

Table 3: Ranking major and minor criteria implementing and launching ABC System by fuzzy AHP

Criterion	Weight of Criterion	Minor Criteria	Weight of Minor Criterion	Total Weight	Rank
		Participation of nonfinancial segments in planning and running system	0.203	0.0625	4
Organizational criterion (I1)		Readiness of the employees' of different sections	0.172	0.0530	10
	0.308	Enough and on time training	0.221	0.0681	1
		Monitoring and supervising the operation	0.193	0.0594	6
		Considering informational needs of different sections of the organization	0.211	0.0650	2
		Identification of all advantages of the system by society	0.168	0.0331	20
Environmental criterion (I2)		Standardization and directions relevant to the new system	0.229	0.0451	11
	0.197	Teaching the system in universities and educational centers	0.204	0.0402	16
		No withstand from employees' part versus new information system	0.192	0.0378	18
		Shortage of papers, research and Books	0.207	0.0408	15
		Logical timing of the designing and running	0.214	0.0627	3
Individual criterion (I3)		Full time work of project team	0.197	0.0577	7
	0.293	Enough courage from project team	0.187	0.0548	9
		Eligibility of the designing team	0.209	0.0612	5
		No strict attention to details while planning	0.193	0.0565	8
		Considering all costs of chain value	0.205	0.0414	14
Technical criterion (I4)		Strong correlation of reinforces and costs	0.218	0.0440	12
	0.202	Finding the clear cost objects	0.206	0.0416	13
		Accurate definition of activities	0.197	0.0398	17
		Little contradiction between the results taken from the new system	0.174	0.0351	19

Another thing a business must do when using ABC is set up a team that will be responsible for determining which activities are necessary for the product or service in question. This team should include experts from different areas of the company (including finance, technology, and human resources) and perhaps also an outside consultant. The head of the designing team of Activity Based Costing System should be brave enough; he/she should be the most interested person among all qualified individuals; he/she should be interested in consulting the matters with experienced counselors. Universities should also train students regarding Activity Based Costing System.

All taken together, implementing and launching Activity Based Costing System leads to less failures in companies; otherwise, while implementing and launching the system, different weak points of the system would be known; items which already have been predictable and controllable but not enough attention has been paid to them. When we are aware of the reasons of the failures, we can easily solve the problems and predict the probable problems and find solution for them. As results, we will experience more success and can enjoy benefits of ABC system more than ever and finally value of the organization would be added.

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