Investigating the relationship of evaluating and reward of the production managers based on financial and nonfinancial indicators of (Paulo van veen) model. Case study: Foolad Mobarakhe complex managers

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Abstract

Performance measurement has great deal for importance in most organizations, since it facilitates archiving to improvement and at the same time enables manager to make decision nabbed on realistic subjects instead of their opinion and assumptions. The present research was aimed to evaluation of financial and nonfinancial indices in periodic evaluation variables and variable award of managers. That’s why, Paulo van veen model was used to measure effective factors on production strategy, organizational dependence and technological complexity in performance evaluation of Mobarakhe steel company in Isfahan province. After determining and confirming indices related to independent and dependent variables by experts, a questionnaire was prepared and was hand out among 63 managers. Having been questionnaires were completed; data analysis was conducted using software’s SPSS and Excel. Statistical analysis showed that production strategy and organizational dependence positively affected non-financial criteria for award and periodic evaluation, while, those financial ones had no effect on performance measures among others. In contrast, technological complexity had positive effect on financial criteria, whereas performance measures did not affected by nonfinancial ones.

Keywords: evaluation and variables awards, organizational dependence, technological complexity

1.Introduction

Civilizations, countries, organizations, individuals and in general every domain of acting (even humble) of the society, and at any time, always tried to perform their best on the basis of their beliefs. To do so, it needs a logical chain of thinking, planning, presenting, and reviewing or the similar performance management. Thus, performance management has been an important topic all the times, and going to rise in this modern world, because nowadays, world of moving, changing, (evolution) and running is beyond the act and science of the past. This is the situation sets with whole the mentioned characteristics in organizations and the competitive world of today, the world in which the rate of external transformations is sometimes more than change speeds and leads to group omissions of the cycle of market competition. Hence, the dramatic development of management knowledge has made the existence of performance system clear. That is, the lack of such in different aspects of the organization, as evaluating the use of resources and facilities, aims and strategies are considered as the organizations weakness. Each organization needs an evaluation system in order to understand its quality of activities in dynamic complicated environments. On the other hand, the absence of control and evaluation system means the loss of connection with the inner and outer environment of the organization, leading to aging and finally death of that organization .The term “organizational death” may not be felt by the organizations’ superior managers because of its lack of sudden occurrence, but studies show that the lack of feedback system makes the development and improvement of the
activities impossible via the needed information, that leads to the organizational death (Iranzadeh & Barghi, 2012: 8).
Performance management is a dynamic and permanent action towards no especial level and time, and the organization’s purposes can come true effectively by the help of managers.(Chane, 2005: 181). In other words, performance management can be supposed to use the information made of evaluation in order to achieve the organization’s aims. In the performance management, the management and members’ agreed objectives are specified, and the sources and facilities to reach have been fitted, and the necessary policies are taken into account in order to meet the goals (Busi, 2006: 115).
Experts and researchers believed that the performance is the basic issue in all the organizational analysis and it’s hard to consider an organization not having evaluating and measuring the performance. They note it as the theoretical development of the organization, and know the performance as the main topic exists in the scientific environment. Because of such view, this system has been the center of attention for the researchers, economists and executive directors for several years. Indeed, measuring, evaluating and performance management leads to the system intelligence and motivating individuals towards desired behavior that is the main part of codification and performing the organizational policy for achieving micro and macro goals adopted in the organization (Khaleghi, 2006: 54).

2. Review of the literature

2.1. Performance measurement definition

According to Neeli et al. (1995), measuring the performance is defined as a quantification process of activities. In this definition, the terms measuring with quantification and performance with activity are associated. They also suggest that performance should be described as an activity’s efficiency and effectiveness, that we will have the following definitions out of this perspective:
- performance measurement, is the process of quantifying the effectiveness and efficiency of the activities.
- the performance measurement system, is a set of criteria used for quantification of effectiveness and efficiency of an activity.

The performance measurement system is a set of measurements used in quantifying the effectiveness and efficiency (Tangen, 2004).

2.2. Goals of performance measurement

According to Peter Drucker: “If you can't measure it, you can't manage it”, this interpretation may describe the performance measurement simply as operations managements, but performance management, undoubtedly, is one of its goals. The other objectives are as follows:
- coordinating strategies and activities
- operations control
- management and engaging with the stakeholders
- quality
- motivation and rewarding the employees
- accountability

2.3. Performance evaluating indicators

Financial and non-financial indicators are keys to measure the operational performance of the organization. They help monitoring, understanding, predicting and improvement of the strategic key achievements. Traditionally, financial indicators such as profitability, have been the most important indicators of the organizations’ performance, until in the early 1980s Johnson and Kaplan, R.S. (1992) after having management accounting analyzed, presented some of the deficiencies of the information exist to evaluate the organizations’ performance, and those are from the increase in organization’s complexity and market competition.
Therefore, performance evaluation systems that rely solely on financial indicators could cause problems for organizations that some of these problems are as follows (Noble and Crow, 1997):
- Because financial indicators are not connected with the organization's strategies, they may be inconsistent with the organization's strategic objectives and cause problems in formulation of strategies, such as using “Return On Investment” That leads to short term improvements.
- traditional criteria such as costs efficiency and utility may cause pressure on managers due to paying attention to short term results and finally having nothing done toward improvement.
- financial indicators don’t report details about costs, processes; products and customers and they only focus on partly controlling process rather than the overall system.
- financial indicators are unable to distinguish the costs of quality in detail and appropriately, and they are just to encourage the increase in more productions.

But in recent years, paying attention to other indicators such as production, sales and marketing, staffs, research, development and environment have been increased. Indicators related to quality are of high significance since they are connected to the customers’ satisfaction. These indicators should guarantee factors related to the quality and satisfactory of the customers while being used. The production’s aim is to develop a product or service decreasing and eliminating the gap between the expected quality and the real one. Therefore the customers’ needs and expectations turn to standards of the product specifications. Proper indicators show to what extent these standards have been met (Mohammad Saleh Owlia et al, 2010:43).

Therefore, a performance measurement system should be based on the goals of the organization, critical factors of success and needs of the customers, and monitor the financial and non-financial aspects. It should also be dynamic in order to reflect the internal and external changes, and simultaneously with these changes review and prioritize the goals. Thus, a dynamic performance measurement system includes two general dimensions:
The external performance: financial performance and accountability
The internal performance: producing factors, processed and production

3. The concept of periodic evaluation and reward

3.1. Periodic evaluation

Periodic evaluation is both preventing and diagnostic. If the conditions go wrong the parts including problems will be identified, and if good results are achieved, all the facilities will be used to improve the performance (Soltani, 2011:5)
Werwod & Davis believe that performance evaluation is a process measuring employee that if done appropriately, staffs, supervisors, managers, and ultimately the organization would benefit. Casio defines performance evaluation as the governed description of strong and weak points of performance for an individual or a group related to performing their duties.
In another definition, performance evaluation includes determining the degree of adequacy and competence of staffs in the case of performing their tasks, and accepting their responsibilities in the organization, which should be done on the employees’ carrier behavior and performance clearly and valid.
As a result, this information would be the basis for decision-making and judgment about the individuals. Thus, individuals’ evaluation will be an effective tool in managing human sources, and by the way these organizations will achieve their goals with efficiency and proficiency which leads to staffs’ interests.
In past, managers had the performance evaluation done only to control the employees; otherwise the guide and helping aspect of it turned more important nowadays (Sa’adat, 2003:87). we can refer to the most important goals of periodic evaluation of performance in the following:
1. Informing the staffs about the way to perform the tasks and responsibilities; and the expected behavioral characteristics.
2. Recognizing the staff’s ability levels and determining the educational needs.
3. Modification of the methods and fixing the errors and problems; and planning to start the next course, performance improvement (modification) (Seyyed Javadin, 2004).
4. In general, aim of the performance evaluation is to collect the necessary information about the employed forces in the organization, and become available for the managers so that they could make their necessary decisions in order to raise the staffs work quality and quantity. Therefore, the ultimate goal to performance evaluation is the increase in efficiency and effectiveness of the organization (Sa’adat:2007.69).
3.2. Reward

Reward consists of factors increasing the desirable behavior. On the other hand, every pleasant and satisfying factor that increases the rate of response (behavior) is called reward. In this context, reward is the synonym for reinforcement, because both the meanings are in fact processes which their main goals and aims, is the number of repeating of the behavior. If these two processes are unable to increase the individual’s rate of behavior, there is no reward and reinforcement actually being done, and there would be just a name. Generally, in productive and industrial organizations, the following aims and goals are encouraged in rewarding plans to staffs:
1. To make a close connection between staffs and the organization.
2. To make the staffs perform their tasks more willingly.
3. To make the staffs do their tasks at a higher level of quality and quantity, and push their carrier performance toward higher levels (Sa’adat, 2007:255).

3.3. Rewarding system

Rewarding system should be efficient and effective. On the other hand, specification and rewarding in the organization should be in a way to make the maximum level of efficiency possible. As the first step in this case, the system should be designed in a way effective for the rewarding based on the performance. (Effective performance means a performance leading toward the organization’s goals.) This is the only way in which using rewarding under a mechanism to encourage and motivate the employees is effective (Sa’adat, 2007:253). Rewarding strategies should include some characteristics as the followings:
- Towards values and interests of the organization.
- To be linked with the performance of the organization.
- To be consistent with the beliefs and values if the company.
- To guide and support the appropriate behavior at all the levels.
- manages a desirable management (Lundy& Cowling, 2000).

3.4. Production strategies

Organizations should design and perform different strategies for accountability to the environment. Production strategy in order to produce qualified products is needed (Herrmann, 2012:14). Hayes and Wheelwright define production strategy as the compatible model of decision-making in production performances related to commercial strategies. Cox and Blackstone (1998) focus on the production strategy as a comprehensive model of decisions on formulation and usage of production resources in order to have maximum efficiency, and it should act in supporting overall strategic decisions of the factory and the competitive advantage. Mills et al,(1995) cited that production strategy is consist of a model of related decisions and actions-including both structural and infrastructural nature – specifying a company’s production system ability and the way to achieve sets of production goals compatible with the overall goals of the company.
Production purposes vary from one market to the other and are normally consist of quality, delivery, costs, flexibility and innovation. Recently, environmental production and services have been also added to the previous list (Martin & Diaz, 2008).

3.5. Production outputs

The direction considered by production managers round the world, is presenting better product with more diversity and lower costs and faster performance, customers’ demand are increased and the competitors present more products. Whatever presenting to the customers by the producers is the six important outputs of the production consist of costs, quality, performance, delivery, flexibility and innovation. Some of the outputs would be presented at higher levels rather than others, and this is because no unique system of production can present the similar outputs at the highest level.
3.6. Technology

Technology can be described as all the knowledge, processes, tools, methods and systems used in making products, and providing services which is the basis of competitive priority of the company (Lamin, 2011:213). On the other hand, technology is the practical use of knowledge and a tool to meet the human needs. Another definition of technology is: “a set of information, tools and techniques derived from science and scientific experience, and are used in development, designing, production and usage of products, processes, systems and services.”(Ghazi Nouri & Mahdikhani, 2005)

3.7. Affiliation

A kind of inter-organizational correlation is defined for each organization, in terms of the system approach. “The term inter-organizational correlation means the amounts organizational circles correlated with each other.” (Daft, 154:2010)

While the inter-organizational correlation continues, as a part made in one unit enters to another unit in the form of the raw materials, it’s been said that the two units are dependent on the sequence. The first unit should work properly so that the second one’s performance becomes perfect, because these units transfer sources and are correlated in their performance.

Thompson (1967) called such relations as consequent technologies, and the aim is the production levels consistently passing. The primary materials of a phase are the same product getting from the previous phase, and its product also considered as the primary materials used in the next phase.

4. The conceptual model of research

According to paulo van-vin in this study, the six following hypothesis have been examined:
1-there’s a relation between financial criteria in evaluating and rewarding of the production managers, focusing on production strategies based on product differentiation.
2-there’s a relation between non-financial criteria in evaluating and rewarding of the production managers, focusing on production strategies based on product differentiation.
3-there’s a relation between financial criteria in evaluating and rewarding of the production managers based on affiliation.
4-there’s a relation between the non-financial criteria and rewarding of the production managers based on affiliation.
5-there’s a relation between financial criteria in evaluating and rewarding of the production managers focused on complexity of the technology.
6-there’s a relation between the non-financial criteria in evaluating and rewarding of the production managers based on the complexity of the technology.

5.Methodology

The current study will be done through correlation research. Library and field methods will be used for data collection. In this method, the data will be derived through referring to books, papers, thesis and previous researches, magazines, documents exists and the internet sources related to the topic of research. Afterwards, the research studies will be completed by field studies such as questionnaire, interview and observation. In this thesis, the research hypothesis will be analyzed through statistical tests appropriate with the questionnaire. It should be noted that analyzing the statistical information of this study will be done via SPSS software.
The study sample of the current research includes 63 of the production managers of Foolad Mobarake Esfahan Company.

6.Research indicators

<table>
<thead>
<tr>
<th>Research indicators of independent variables</th>
<th>Independent variables</th>
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<tbody>
<tr>
<td>1. flexibility in production-changing in production size</td>
<td></td>
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<td>2. correspondence between products provided and standard qualities</td>
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<td>3. the speed rate of product offering</td>
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<tr>
<td>4. on time delivery of the products</td>
<td>Production strategy</td>
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<td>5. Making quick changes in product designing/the rate of presenting new materials</td>
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<td>6. presenting products with high efficiency</td>
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<tr>
<td>7. supports</td>
<td>affiliation</td>
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<td>8. advertisement, advertising and product promotion</td>
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<td>9. wide distribution of the product</td>
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<td>10. wide production line</td>
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<td>11. price compete</td>
<td></td>
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<tr>
<td>12. Scheduled maintenance - maintenance of production equipment</td>
<td></td>
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<tr>
<td>13. Determining the wip levels-determining the goods in structuring flow</td>
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<tr>
<td>14. To determine the volume of production orders</td>
<td></td>
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<tr>
<td>15. Selecting a track to production</td>
<td></td>
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<tr>
<td>16. using machines to replace manual labor</td>
<td></td>
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<tr>
<td>17. Computer-Aided Design</td>
<td>Complexity of technology</td>
</tr>
<tr>
<td>18. Automation of the production cycle</td>
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<tr>
<td>19. automation of repeating the production cycle</td>
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<tr>
<td>20. automation of self-arrangement or fixing the problem automatically</td>
<td></td>
</tr>
<tr>
<td>21. Automatic control systems</td>
<td></td>
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</tbody>
</table>

Dependent variables indicators | Correlated
variables

1. Income / Net Income
2. level of the costs
3. sales
4. Changes in prices of raw materials
5. 5-Studying the organization’s performance in on time delivery of the products
6. Number of customer complaints
7. Reports on product defects and failures
8. Number of product returns
9. investigating customer’s satisfaction
10. Order time delivery to customers
11. The shortage of primary materials
12. level of product presentation

Financial indicators

Nonfinancial indicators

7. The main research results

The 1st hypothesis: production strategy based on differentiation in products impact on the importance of evaluation and managers’ rewarding on the basis of financial criteria

Table 2- regression coefficients for $H_1$

<table>
<thead>
<tr>
<th>model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (α)</td>
<td>B 2.408</td>
<td>Std. Error .435</td>
<td>5.535</td>
<td>.000</td>
</tr>
<tr>
<td>Strategy</td>
<td>-.552</td>
<td>.131</td>
<td>-.533</td>
<td>1.931</td>
</tr>
</tbody>
</table>

The results of regression test between the independent variable (strategy) and the dependent variable (the importance of evaluating and rewarding based on financial criteria) suggest that there is a negative and meaningful correlation between these two variables. The meaningful level is less than 0.05 and the amount of Beta achieved is - 0.53. That is, one unit of change in strategy variable leads to -0.53 change in evaluating and rewarding based on financial criteria. Therefore, the production strategy based on differentiation for the product has effects on evaluation and rewarding of the managers on the basis of financial criteria and will be confirmed.

The second hypothesis: Production strategy effects on the importance of evaluation and rewarding of the managers based on non-financial criteria on the basis of differentiation in the product.

Table 3- regression coefficients for $H_2$

<table>
<thead>
<tr>
<th>model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (α)</td>
<td>B 1.801</td>
<td>Std. Error .337</td>
<td>5.351</td>
<td>.000</td>
</tr>
<tr>
<td>Strategy</td>
<td>.474</td>
<td>.101</td>
<td>.503</td>
<td>4.692</td>
</tr>
</tbody>
</table>

The results of regression test between the independent variable (strategy) and the dependent variable (the importance of evaluating and rewarding based on non-financial criteria) suggest that there is a positive and meaningful correlation between these two variables. The meaningful level is less than 0.50 and the amount of Beta achieved is 0.50. That is, one unit of change in strategy variable leads to 0.50- change in evaluating and rewarding based on non-financial criteria. Therefore, the production strategy based on differentiation for the product has effects on evaluation and rewarding of the managers on the basis of non-financial criteria and will be confirmed.

The third hypothesis: Complexity of the technology effects on the importance of evaluation and rewarding of the managers based on financial criteria
The results of regression test between the independent variable (strategy) and the dependent variable (the importance of evaluating and rewarding based on financial criteria) suggest that there is a negative and meaningful correlation between these two variables. The meaningful level is less than 0.05 and the amount of Beta achieved is 0.44. That is, one unit of change in strategy variable leads to 0.44- change in evaluating and rewarding based on financial criteria. Therefore, the production strategy based on differentiation for the product has effects on evaluation and rewarding of the managers on the basis of financial criteria and will be confirmed.

**The fourth hypothesis:** Complexity of the technology effects on the importance of evaluation and rewarding of the managers based on non-financial criteria.

The results of regression test between the independent variable (strategy) and the dependent variable (the importance of evaluating and rewarding based on non-financial criteria) suggest that there is a negative and meaningful correlation between these two variables. The meaningful level is less than 0.05 and the amount of Beta achieved is -0.41. That is, one unit of change in strategy variable leads to -0.41 change in evaluating and rewarding based on non-financial criteria. Therefore, the production strategy based on differentiation for the product has effects on evaluation and rewarding of the managers on the basis of non-financial criteria and will be confirmed.

**The fifth hypothesis:** dependency between the units effects on the importance of evaluation and rewarding of the managers based on financial criteria.
The results of regression test between the independent variable (strategy) and the dependent variable (the importance of evaluating and rewarding based on financial criteria) suggest that there is a negative and meaningful correlation between these two variables. The meaningful level is less than 0.05 and the amount of Beta achieved is -0.69. That is, one unit of change in strategy variable leads to -0.69 change in evaluating and rewarding based on financial criteria. Therefore, the production strategy based on differentiation for the product has effects on evaluation and rewarding of the managers on the basis of financial criteria and will be confirmed.

**The sixth hypothesis:** dependency between the units effects on the importance of evaluation and rewarding of the managers based on non-financial criteria.

<table>
<thead>
<tr>
<th>Table 7- regression coefficients for H_6</th>
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<tbody>
<tr>
<td><strong>model</strong></td>
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<tr>
<td>-----------</td>
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<tr>
<td>1</td>
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<td></td>
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<tr>
<td>Affiliation</td>
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</tbody>
</table>

The results of regression test between the independent variable (strategy) and the dependent variable (the importance of evaluating and rewarding based on financial criteria) suggest that there is a positive and meaningful correlation between these two variables. The meaningful level is less than 0.05 and the amount of Beta achieved is 0.55. That is, one unit of change in strategy variable leads to 0.55 changes in evaluating and rewarding based on non-financial criteria. Therefore, the production strategy based on differentiation for the product has effects on evaluation and rewarding of the managers on the basis of non-financial criteria and will be confirmed.

<table>
<thead>
<tr>
<th>Table 8-researcher’s development</th>
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</thead>
<tbody>
<tr>
<td><strong>Periodic evaluation</strong></td>
</tr>
<tr>
<td>1. Periodic evaluation of the staffs should be both preventive and diagnostic.</td>
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<tr>
<td>2. should have the role of investigating, retrieval, and judgment.</td>
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<tr>
<td>3. should be able to specify the weak and strong points and turns the weak points to strong ones.</td>
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<tr>
<td>4. should provide tools to control management.</td>
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<tr>
<td>5. should improve decision-making about the field and depth of actions-future plans and goals.</td>
</tr>
<tr>
<td>6. The improvement and development of the processes will turn possible.</td>
</tr>
<tr>
<td>7. Decision-making based on provided information and data instead of the managers’ experiences and judgment.</td>
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<tr>
<td>8. Having compensatory payments, bonuses and payment increases based on individual performance and group performance.</td>
</tr>
</tbody>
</table>
A- in order to improve and promote the organization, managers should look for providing a competitive advantage, to do so, the followings are suggested:
1- they should make a connection between performance criteria and production strategy to provide the managers with more information so that they could choose the strategies which are not against the company’s goals.
2- managers should look for unitary of the organization’s goals along with the performance criteria, so that they could improve the production efficiency.
Since we can’t definitely cite in production strategy what outputs we would have from the inputs, and also because of the uncertainty in the information, the impact of financial criteria is less that non-financial one. Because the non-financial criteria pays more attention to the future and can help the managers in decision-making.

B- The organizational dependency effects on periodic evaluation and reward determination. When organizational dependency increases, the input-output connection in one section is strongly affected by other sections. In this state, the followings are suggested:
1- Careful planning should be done by the managers, for they would face multiple goals and should make a link between the organizational aims s of different sections of the organization.
2- managers should also look for enhancing the spirit of cooperation and teamwork in the organization.
3- Constant horizontal connections should exist, so that the conditions governing the organization could be balanced.
4- Coordination between the relevant departments takes place.
5- managers of different sections come together and make decisions as a group.
It should be noted that in such situations in which we face uncertainty of the data, the importance of the financial criteria is trimmed and the importance of non-financial measures in connections of input - output will be affected.

C- when the technology is going to be more complex, the knowledge of the processes and output criteria will be easily available. The regular and predictable processes can be designed and coded and can be easily programmed and controlled, because the relation between input-output is generally recognized.
Therefore:
1- managers seek the recognition of the technology and determining the powerful and weak points of technology in the organization.
2- also looking for alignment of the company’s strategy or technology.
3- Detailed examination of the internal situation in the field of technology
4- determining the investments priorities related to the technologies
5- planning of the technology strategy is proposed.
Complexity of the technology makes a great deal of production possible within a standardized process. Therefore, it increases the certainty in production processes and the understanding of the relationship between input and output rises. So, the traditional formal financial criterion is more appropriate.

Reference
Deft, Richard AL, 1389, theoretical basics and designing the organization , translated by Ali Parsaeeyan & S.Mohammad Arabi, publications of cultural researches office
Iranzade, Soleyman, Amir Barghi,1391, performance evaluation patterns of the organization, Foroozesh Publications
Sa’adat, Esfandiar, 1382, human sources management, Samt publications
Sa’adat, Esfandiar, 1386, human sources management, Samt publications
Seyyed Javadin,Reza, 1383, a comprehensive overview of organization and management theory, Negah-e-danesh publications
Ghazi Nouri, Seyyed Soroush, 1385, technology assessment tool to assist policy, Sanaye Novin publications
Production Systems (SAPS) Supported by Quality Strategy in Production, Scive Science Direct. pp 14-19

Veen-Dirks, P., 2010, Different uses of performance measures: The evaluation versus reward of production managers, Accounting, Organizations and Society. 35, 141–164