

Enhancing the performance of industrial designers using Balanced Scorecard

Dr. Abeer Hamdi Mohammed

Lecturer in Industrial Design Department, Faculty of Applied Arts, Helwan University, Egypt

Abstract

The main objective of this study has been to improve the effectiveness, efficiency of industrial designer to achieve the strategic goals of the product set by industrial companies. One of these goals is providing excellent value that attracts customers, This should enable industrial companies to apply Balanced Scorecard BSC as a system to evaluate the performance of the designer, and to design its own system to measure the performance of the designer, determine the relative weights of the different objectives and indicators in line with the priorities and concerns the product design. The paper ends with giving a value for the efficient performance for each strategic objective, which helps to evaluate each goal alone and find out where the strengths and weaknesses lie, providing the company with a feedback necessary for corrective actions to improve the performance of the designer. The main question this study raises is **to what extent it is possible to use balanced Scorecard as an approach to measure and improve the performance of the designer in the Egyptian industrial companies?** The study came to the conclusion that the application of BSC in the department of design and the development of an appropriate assessment system based on the perspectives of the Balanced Scorecard, improves the performance of the designer and thus improves the product of each stage of the design process. It was also recommended that the administrative system be restructured based on a Balanced Scorecard approach. Plans to improve the performance of the designer should include a training scheme and an improved system for hiring designers.

Keywords:

Designer performance, Balanced Scorecard BSC, Key Performance Indicators KPI, strategic map.

Introduction

The designer's role is crucial in the management of design and development at the company. It is based on combining technology and human needs in good performance. He is asked by the company to predict with the new needs for the user to design concepts of different lifestyles which requires designer to be creative and innovative to make innovations and inventions that are available to everyone in an appropriate manner.

The development of companies and its continuity effectively in contemporary society depends on their performance. This leads to the achievement of its objectives, so the performance of the designer must be in the first place. This requires the development of objective basics for industrial companies to evaluate the effort of the designer to improve it where it will reflect positively on the performance of the company and vice versa.

One of the modern tools designed to measure the performance of the measurement of the Balanced Scorecard, which is run through the four perspectives are financial performance, customer relations, internal operating processes, education and training. This measurement contributes to provide a clear vision of industrial companies on the performance of current and future designer. This entrance is based on the premise that the measurement is a prerequisite for management strategy and should receive great attention because things that aren't measured clearly cannot be manage well.

The change in both the content of the designer's work and methods of performance, and the change in the characteristics of the knowledge and skill of the designer, as well as the change in the organizational factors, imposed on industrial companies need to seriously consider in determining the systems for measuring and evaluating the performance of the designer to improve it. As the process of measurement and evaluation tool is a way to identify the positive

and negative aspects in the performance of the industrial designer. If the company announces results of the evaluation, the industrial designer will be able to develop strengths and address weaknesses.

Statement of the problem

Egyptian industrial companies follow traditional ways to improve performance of designers such as a given computer programs, analysis of competing products, visits to local and international exhibitions to check competing products,. These methods focus on the efficiency of design processes and procedures, and completing forms and documents, and companies forces a designer to the rules and regulations to perform the required tasks of it without leaving him any space for thinking or creativity or freedom of decision-making.

This is not commensurate with the management thought of industrial companies, who cares about global issues designed to improve the performance of which depends on the Balanced Scorecard. Which aims to achieve the requirements of the user of new and renewable, and the consequent lack of competition Egyptian product in the world market, which has become a quick footsteps in this area.

The importance of evaluating the performance of the designer in industrial companies comes from the survival and the continuation of the company in the community. Therefore it has become necessary in each company to find the controls and the proper methods to evaluate the performance of its designers, to achieve corporate objectives and to ensure the achievement of a dialectical relationship between the performance of the designer and the continuation of the product in the domestic market and the global.

LG's global focused on the raise of the performance level of the designer, because of its view that the designer is the one who discovers the user's approach in the future through the test and determining the needs of the user and understanding of customer and market trends. This achieves their strategic planning which is their preference to step forward the market in the design of the product. From the standpoint of Brown Company that good design stems from the performance of a creative designer.

The objectives of the contemporary administrative thought is the need to apply

modern management techniques, including performance management which its work is based on determining the performance management design. Then the performance of the designer is based on the basis of performance achieved for the product. We should provide the needs and requirements of performance and then lay the foundations for the evaluation and follow-up and accountability for results and achievement.

Objective

Develop a guiding system for industrial companies to improve the performance of the Egyptian industrial designer depending on the technology of Balanced Scorecard.

Hypotheses

There is statistically significant improvement of the performance of industrial companies using Balanced Scorecard in evaluating the performance of designers.

1 - The measurement of the industrial designer performance

The designer is the person who is able to develop new concepts for the product, which leads the commercial market. The design is not just the outside framing of the products that users see and feel but also of cultural expression for the era in which it determines and directs the lives of the user. The user has now become a high culture and skillful connoisseur. The industrial companies focus now on the creative design disproportionate with the tasting of the user, which achieves its competitive position with all its social, economic and political sides. Therefore, there should be permanent development and continuous improvement of the performance of the designer to achieve all the above objectives.

A- Significance of the designer performance

The performance of the designer is effectiveness, efficiency and appropriation owned by the designer to achieve the company's goals. **The following is clarified:**

The effectiveness of the designer: the degree of success of the designer in achieving the results of what was agreed upon objectives and tasks of the design process.

Efficiency of the Designer: output ratio (design ideas) or generated values to the resources used for their generation.

Appropriation of the Designer: is the ability of the designer to optimize the available resources to achieve the design goals.

From the previous the designer can be effective and efficient and convenient if he could:

- Achieve the objectives of the design work based on them.
- Raise the ratio between output and input in the design process on the basics that the efficiency is the ratio between them.
- Linking operations and activities with the available resources and distributing them optimally.

The improvement of the performance of the designer is of great importance for the company and for the users and the community in general. There is a dialectical relationship between these components (the designer, the company, the user, the community). If the performance of the designer improved the company's goals would be realized and then achieved the objectives of the user. Through them the society will advance as the good performance of the designer leads to the result to the development of the society. An example of this is the improvement of the designers performance in Brown company with the participation of a large number of design work teams in different locations and by putting plans to review the work procedures, as well as training designer to work as a one design team in a better way. Moreover, the designer will benefit from the visions and ideas of foreign work protocols with researchers, foreign universities to interact with designers. Also, we should intensify the interactive training of designer between technology and marketing, study and development in order to develop successful products check the policy of the brand to Brown. Brown's interest in improving the performance of the designed output of growing interest to bypass the limits of design sense addressed in the context of the user experience so that is characterized by design details to make a difference in the life of the community .The company check the power of the originality of the brand to adopt the philosophy of Graphic Design as Oliver Grapes said Head of design at Braun "to meet the needs of future users to maintain a balance between engineering science , engineering and human resources, and improve the performance of the designer contributes in maintaining this balance ".

The focus of the study in this area is on the importance of improving the performance of the designer.

B - Measuring the elements of designer's performance

Featuring the capabilities of a personal stylist to help him for the good performance of the design process, and this helps to raise the performance of the competitiveness of the product. Therefore the effectiveness, efficiency and appropriation process design and development increase the improvement of the personal capability of the designer. **Among the most important elements of the performance of the designer the following:**

Emotional ability: It is the ability of the designer to meditate the beauty around him and then put the dimensions and visions of variety of design to meet the requirements of the user. The design of the product should reflect the personality of the designer and his thoughts without inhibition, where the designer is distinguished from the other by configuring the emotions of mind brilliantly especially in the expression of the product. The aesthetic experience lies in the emotion, which is essential to the aesthetic taste which is sought to be considered while designing the product and that emotion is the completeness of meditation and success. If the design raises our emotions and our sense so the performance of the designer shall be such a successful one.

The designer passes during emotional behavior, through stages such as:

Perception Stage: perception of the necessary needs of the user.

Estimation Stage: the designer judges the idea of the design whether exciting or fearful for the user.

Emotion Stage: as a result of the realization of the designer's emotion and appreciation to the design which generates a tendency to embark on a design idea or stay away from them.

Expression Stage: At this stage the internal physiological changes occur that contribute to the designer to create the work of design ideas, to suit the nature of the necessary needs of the user.

Work Stage: In this stage the designer takes decisions for the development of design ideas in multiple directions.

It is the correlation of the designer with a specific set of design tasks, principles or positions. Therefore the term commitment is useful and honest because of its implications on the ideas of many of them in fidelity design work and the correlation with the company and its

help to reach a competitive level. The measuring of the commitment of the designer work is not adhered to the dates but is measured by adhering to how the designer achieve the vision and mission of the company which meet the requirements of customers and users of the quality and cost suitable for this quality.

Enthusiasm in work: it is a moral force of the designer which urges activity and determination in the designer's soul. It urges him for the completion of his specific design activity to achieve the objectives desired by the work.

The enthusiasm types are as follows:

Mental enthusiasm: is to produce a powerful idea which controls the mind of the designer, lives of the designer made from his thoughts also said by Helen Keller. The impact of the idea of design in the life of the user, the Almighty God created the mechanism of human mind going towards what is urged from ideas. The designer's mind can produce design ideas that check all the company's goals. Mental enthusiasm of the designer must support the necessary steps, **such as:** the desire to work, the right decision, education and training, so that his efforts are crowned with success.

Enthusiasm in achievement: Scientific studies have shown that psychological need for achievement is an essential need for the designer and his psychological integrity. The achievement of the designer feels him with his value in life and urges him to develop and improve his performance in himself.

Professional enthusiasm: Is the direction of the designer with all his strength toward the design of a particular project or a particular that he likes.

Fantasy enthusiasm: the image that is seen by the designer for the old design and its development in the present and in the future.

How can a designer own the spirit of enthusiasm and perseverance in the performance of work: thinking in moral return than materialistic return and feel that this work belongs to him and not just work he does it to others and to share their work in a team work studiously, setting benchmarks for his move to a higher stage whenever achieved its goal. All opinions of designers carrying their experience of 10 years unanimously agreed on each of these goals.

To act as the user: The ability of the designer to see the product from all angles of the product and the user, including: the habits of use, user

preferences technically functional, quality and cost, the emergence of new needs ... Etc.

And despite the fact that these angles are important but are ignored by companies, resulting in this big gap in the quality of the product.

Despite the unanimous opinions of members of the study sample, the importance of studies that is provided by the company in all its aspects takes 50%. To collect information from the environment of use by the watching of the designer the habits of the user's use of the product is 35%. It is suggested to save the designer's time to put cameras to record the habits of use. As it is agreed on the importance of the work of prototypes because it describes the proportions of the parts to each other and the equilibrium of mass and color and experimenting with parts that deal with user better than the idea of showing the importance of computer programs is 15%. And it was suggested that it is not required by the designer.

The achievement of the goals and the plans of the design: Product development process dynamics are compatible with the objectives of the company's design and external market forces and trends competitors. Designer participates in this process with his experiences and personal skills and creative good performance **in all stages of development as follows:**

Preparation and evaluation : the ability to know the idea of the product for the application, study the feasibility of implementing this idea economically by : logistical and financial analysis , market analysis , where that includes all of the elements of market competition and consumption patterns and other financial analysis also examines the required investment and anticipated profits .

Develop a new idea: based on the formulation of new product features and characteristics of the core. In the range of user needs and the competitive framework to determine what the users are going to buy.

Experimental test: View the product on a sample of users to see if they are in need of the product and will offer to buy it. Through the results of the experimental test the designer will be able to apply modifications to the product so that it becomes more attractive to users. This move also enables the designer to know the characteristics or processes that need to be adapted.

Marketing the product: introduces a new product to the largest markets with highly confidence of compatibility characteristics of the product and its features with the needs of users and then the designer is preparing to set up a map of new jobs.

C - Elements to improve and develop the performance of the industrial designer

The performance of the designer is the results or the behavior or the activity which is shown by the designer during work or doing any kind of effort. So it is equal to the term of achievement, and here we can say that the performance of the designer is an accomplishment that reflects the consequences of the behavior, which the designer's doing in the environment of his work. In this regard, it can be explained by the equation of technology to improve and develop the performance of the designer, which says that the performance of the designer is a natural result of a combination of elements, which are summarized in the knowledge, skills and opportunities, effort and motivation, training and work environment that drive designer for outstanding performance. In this sense, the advanced industrial companies are always working to improve and develop the performance of the designer through a focus on the components of this equation and are clarified as follows:

Knowledge: those are the bare facts, data and information theory, which the designer can obtain from:

- The cumulative knowledge of through years of study and design work carried out by the designer.
- Provide information on the company's product from all aspects of the user's preferences aesthetic quality job price ... etc.
- Provide competitive products for analysis and out of range trends competitors for guidance.
- Provide an environment for the use of the product in order to try out the designer himself, both inside and outside the workplace.
- Providing a work environment designed to help detect the user's requirements.
- Take advantage of previous experience friction for designers of creators and innovators at the local and global.
- Visit the internal and external opposition to identify trends competitors.

There is no doubt that knowledge is of paramount importance for the abstract

description of the product and to identify how to develop.

Skills: skills of the designer are known by that art, which is owned by for the application of knowledge and information in a way of being able to make full use of the product development, as follows:

- Organize his time so that gives every stage of design time commensurate with the degree of importance, according to the specified time management to complete this phase.
- Analysis of information using the relationship of cause and effect, mind maps, Deming cycle of improvement plans which is (plan, do, feedback, do).
- Organization of thought to benefit from the design and analysis of information in the work of ideas inspired by the organic forms, geometric or merge the two.
- Being able to draw perspective of all kinds , general , unassembled and transparent , in order to clarify all the details of these types of parts and assemble with a choice of angles and appropriate colors , taking into account the time of drawing perspective , organizing the display for ease of vision and judgment on the idea.
- Work for the prototypes to illustrate the design idea and take a final decision for implementation.
- Work for the preliminary engineering drawings to illustrate the dimensions and proportions as well as drawings of the final production.

Opportunities: industrial companies Granted opportunities for the designer to improve and develop his performance from six months to a year by giving training courses. If the performance achieved the standard of the performance of the designer with all the effectiveness and efficiency the design work credited for him and then is candidate for the other courses according to the needs of the design process. If he does not achieve the standard performance, an assessment process is done to him and if his abilities are in line with the nature of work so he is hired and if not, he is dismissed from work.

Effort: the effort is defined as the behavior and movement displayed by the designer while trying to perform the design work. It is said that this is designed to make a double effort or Make an effort to do his job when the company achieves all the goals of the design work. In this

sense, the effort is a tool that shows it and carried out by the designer to complete the work assigned to him with the quality and the skill required.

The stimulus: is the set of stimulus motives that drive the designer to work with high quality design ideas. **Designers are motivated to do their job to do the following:**

- Career advancement (assumed positions).
- Dealing with a civilized manner.
- Autonomy Most of the skill and experience designers prefer to have their important role in the work. The views of 95% designers that increase their expertise for 10 years or more Unanimously agreed that most of the designers can take a design to their work outside the company, and the designers that belong to less than 10 years of experience prefer the administrative system of the design process in the company in order to benefit of the possibilities offered by them.
- Getting a financial return commensurate with the nature of the efficiency of each designer: The views of all the designers that increase their expertise for 10 years unanimously agreed that the material profit is more important in the process of stimulation.
- Engage them in product development a plan because they feel that they are working important work which is linked to the company with distinction.
- The commitment of employers designers like to feel interest of their employers with them. If we look at the process of stimulation and administrative point of view it is very important to be aware of the following fact: namely that you cannot motivate others, but you can only affect what motivates them.
- A sense of challenge Designers like to feel the presence of the challenge on the condition that the required tools are seen to succeed in this challenge.
- Making competitions for the best design at the local and global side with material and moral character prizes, and making workshops for the best design.

A work environment: where the work environment conducive to innovation and invention, and the terms of its success **are the following:**

- Provide good lighting, noise reduction; provide proper ventilation as well as desks, chairs, work vacancy distribution.

- Connected system is made appropriately between the designer and his superiors and colleagues.

- Having a place for meetings and panel discussions.

- Having a place to give training courses.

- The provision of computers 24inch screen and modern painter.

- **Training:** the success of the designers' implementation of the work assigned to them commensurate in the extent of the success of the training programs. Every designer has mental ability and skills performance that distinguish him from other designers, but these abilities and skills need to be refined and to have continuous development so that this designer shares his effort and ideas and suggestions in solving the problems of design. The advancing of the design and the development of the company and especially the industrial field is witnessing rapid development in this age. In addition to other variables, which are sometimes unexpected, and training is a cornerstone of the utilization of the capabilities of the designers in product development, **there are two types of training programs:**

- **On site training:** The designer is trained directly at the work site and participates in this work with an experienced designer. It is recognized directly that on the efficiency of the designer during his performance of the work, and then be routed to the designer tunable behavior required to work with the required efficiency.

- **Training outside the workplace:** giving a training course, **such as:**

- Training to solve problems and make suggestions for improvement of this training may include some statistical concepts such as statistical quality tools.

- Training on partnership and collective cooperation within small groups or teams to support design activities.

- Specialist technical training for the designer on how to reduce waste, use of alternative materials, alternative methods of production, new technology ... etc.

In addition, some companies may sometimes need to move some designer to take advantage

of their expertise and in this case the designer needs to be trained sufficiently well.

And contribute to these programs to identify talented designers and advanced skills and directing them to the appropriate areas for their abilities.

Through the previous view : can clarify requirements for improving the performance of the industrial designer in industrial companies through the study of the different elements that go into strengthening the productivity of design ideas , **which are as follows:**

The productivity of design ideas = industrial designer performance × Technology

The performance of the industrial designer = ability to produce new ideas × desire to distinguish his thoughts on competitors

Its ability to produce new ideas = scientific knowledge gained × skill was able to accomplish specific ideas on how to design and be precise and speed of implementation

Technology = equipment × methods

D - Elements of the management of the performance of the designer

The design management of the companies is interested in raising the efficiency of the design process and improvement of their level, because they are dynamic process of the productive process. In other words it is a source of energy, which controls the performance of various departments in the industrial companies.

The efficient management of the performance of the design process depends on the efficiency of the designers management performance for their business, as the designers benefit of information and use of the philosophies of different design and strengthening of these philosophies process of creative thinking and skills can influence the efficiency of the design process. Thus the improvement of the productivity of design ideas depends mainly on increasing the ability of the designer to work, as well as the desire, and then achieve job satisfaction that has to do with the performance within the company. **The following is clarified:**

- the ability to work: the designer gained the ability to work from university education, which a field study gave him the importance of 40 % and the practical experience gained from industrial companies, which a field study gave him the importance of 60%, and the good companies benefit of the skills and capabilities of the designer who enjoyed with, enabling them to access to the highest achieving their

objectives effectively and maximize efficiency, and will not come only through:

Good selection of designers as a comparison is made between the designer's job applicants in terms of their skills, and their effectiveness and efficiency in performance, appropriate, for human resources management to determine the conditions to be fulfilled in the designer. Then picking the best of them to work. The training complements the function of selection and appointment as mentioned above, because the training helps to develop and increase the skills of designers and improve their business performance, as seen by "Keep" that the objectives of human resources strategy is to get the work force available where the right specifications of personal characteristics, skills and knowledge are existed as well as for having the ability to career advancement and future development of the skills and knowledge. This strategy also focuses on the importance of human resource development and in building and activating the company's competitiveness.

The desire to work: The most important designers in the company paying industrial work and improve performance is:

- Getting superiors immediate satisfaction and directors of senior management.
- The common desire of designers in innovation and access to mutual success and achievement.
- The desire for excellence and individual creativity.

job satisfaction: comes from both the provision of industrial company and Satisfaction of wage so that commensurate with his abilities and competencies, the content of the work, which is required by the designer, opportunities for promotion to higher positions, satisfaction for the supervision of direct manager or board of directors, the satisfaction for group work, working hours , working conditions.

The designer performance management system is characterized by the following:

The performance management system consists of three main elements which are the design process input and is represented in the design goals of the company and the information provided about the product to achieve these goals, The processes that represent the activities and actions made by the designer during the design phases using the available resources for this process and The outputs where the designer

achieve the design competitiveness goals of the company.

This system take the open form as when we apply each new technique of training, benefit from foreign experts, gather the views of the product users, collect the views of colleagues, managers and other departments that deal with the designer in the evaluation process. Using means of appropriate stimulating and new evaluation whenever they improve the designer performance. The inputs, processes and outputs integrate with each other and interact with the planned design environment as an integrated system of the company according to the specific objectives of the foreign competition. Which illustrates the variables affected the performance management and its association with the external user new and renewable requirements. The concept of the system clarify that the effectiveness of performance management is the sum of the efficiency of all the elements of the system and not the result of some of these elements without the other.

2 - The Balanced Scorecard performance and its role in improving the designer performance.

The Egyptian industrial companies consider the performance of the designer as: the ideas produced to achieve the client's requirements, strategies and objectives of the current company, and the process of measuring the performance of the designer is built on this philosophy. Due to the rapid development of new products and new needs of the user to use a new standard for designer management performance because of its importance in achieving the requirements of the user. This tool is represented in the Balanced Scorecard as one of the most important tool at the present time to measure and manage the designer performance. The Balanced Scorecard provides a descriptive measurement tool of the industrial designer performance represented in the strategy Maps, and on the other hand it provides a quantitative measurement tool of the industrial designer performance represented in basic performance indicators.

In order to analyze the contribution of the Balanced Scorecard in improving the industrial designer performance, it was necessary to identify the scale of balanced performance concept and its importance, Basic performance indicators, as well as the successful performance study of the designer and design strategy from the Balanced Scorecard perspective.

A - The concept of the Balanced Scorecard and its importance

Balanced Scorecard (BSC) is a strategic tool for performance management. Proved useful in dealing with the problems associated with the performance measurement. they are used by managers to keep track of the activities application by employees in companies, and captures monitoring the consequences of any wrong actions in applying the company's strategy.

The Balanced Scorecard system is designed by (Kaplan & Norton, 1992) on the transformation of the strategic goals of the company to a set of performance indicators, and these indicators are collected by four perspectives: financial, customer, internal processes, training and education, and then the formulation of objectives for each the four perspective and the selection of metrics for each perspective to demonstrate the application of the company's strategy.

The Balanced Scorecard provides a framework that not only provides performance measurements, but helps planners to determine what should be done and measured. It also enables executives to implement the company's strategy Kershaw, 2001.

B - Improve Designer performance from the Balanced Scorecard perspective:

Improve the designer performance which is a series of interconnected elements starts by determining the role of the designer Accordingly capacity measured then put the ideal scale of the work and through the performance index what happened at work can be reached and through performance standard, we can judge on the performance quality if it need developing or not . It is through this system we get to that performance improvement is to manage the designer performance, and the application performance measure help balanced property integration and interaction between elements of performance management in this system , and confirm the integration and balance within each of these elements itself .

The applications of the Balanced Scorecard clarify the effectiveness of performance management which is the sum of the efficiency of all the elements of the system and not the result of some of these elements without the other. **As follow:**

How to measure the performance of the industrial designer

- Does the designer perform his design mission assigned to him in accordance with the industrial company objectives?
- To what extent the designer make contribution or failure in the design mission?
- What is the minimum part he completed?

The UNDP realizes that there are three levels to measure the designer performance, using the results-based approach:

- **Impact:** The change in the designer actual performance or the target change achieved by measuring design quality level.
- **Taken:** a change in the designer actual performance or the target performance supports the company's ability to work better with stability.
- **Director:** the result of the completion of the design in a shorter time and in accordance with the design goals of the company.

A measure of the designer performance:

- **Scale:** Is the measurable formula sets the necessary variables to be measured and monitored to achieve the desired target performance of the designer. It visualize any quantitative or qualitative performance of the designer, the best measure for performance shows the processes through which the designer works, as shown good designer performance level or performance need to be improved.
- **Key Performance Indicators (KPI's):** its function is to indicate the progress or lack of progress towards achieving the target; it is a way to measure what actually happened compared to what was planned with respect to quantity, quality, and time periods. The index is a quantitative or qualitative variable would provide a simple but reliable method for measuring achievement, change and the designer performance. The performance index helps the designer to design management directors leading the design process towards achieving a particular goal and allow them to assess the achievement of the designer.

Criteria for evaluating the designer performance:

The basics are attributed to the designer performance and compare them as a basis for judging them and without them it would be difficult to know if we were able to reach the goals clearly and accurately. And the performance criteria must be specified before you start the process of optimization in order to maintain the objectivity of improvement and away from the non-discrimination. Often being identified as said by: (Jackson & Mathis, 1994):

- Quantity of output.
- Quality of output.
- Timeliness of Results.
- Manner of Performance.
- Effectiveness in the use of resources.
- **The strategic map:** Is the tool of the Balanced Scorecard used by companies to plan their work to improve. It shows step by step logically the relationship between design goals in the form of a series of cause and effect. These steps are to improve the performance of the strategic objectives of the design development of the perspective of education and training in the (bottom row) in order to enable the company from the perspective of improving the goals of the internal design operation's and put it in the (next row), which in turn enables the company to create the desired results in serving users views of the design (top rows).

We conclude from the foregoing: the standard is a measuring indicator, measuring each deviation resulting from the actual work therefore it will be evidence to depend upon the judgment on the efficiency of the use of the resources available in the company and their effectiveness in achieving the objectives of the plan drawn, if the scale are measuring it and the standard are measuring Accordingly , the comparison made between them to monitor the performance gap and treating it to reach the company's goals Planned.

C - Steps to improve and develop the industrial designer performance from the Balanced Scorecard perspective:

- Discover, and analyses what the performance of the designer (before, during, and after) process. Design
- See and anticipate what the designer should do as (future performance).
- Determine the gap between the designer current performance and the expected future performance.

- Determine the importance of the gap between current performances and expected future performance and the extent of the risk.
- Identify the causes that led to the occurrence of this gap (the possible causes of performance problems - identify the causes of the performance gap).
- Select and develop strategies to improve the designer performance that will lead to the closure of the gap, by identifying the reasons for this gap.
- Identify and evaluate the results expected from the implementation of strategies to improve and develop the designer performance and to minimize the negative effects and increase positive results of the design process.
- Develop a work plan to implement and achieve strategies to improve and develop the designer performance.
- Implement and achieve strategies to improve and develop the designer performance.
- Evaluation of the results during and after the implementation of strategies and returns again to the impact of the first step.

D - Automatic entrance into the evaluating process of the designer performance:

Develop a mechanism design process of evaluating the designer performance as follows:

- Accurate identification of the work or task to be performed by the designer through the direct manager or senior management responsible for evaluation.
- Develop clear goals and objectives of the design management, so as to be measurable to be a standard process for evaluating the designer performance.
- The competent department handles the evaluation process of the work assigned to the designer.
- Continuous monitoring of the designer performance on evaluation; in order to gather the necessary information about his actual performance.
- Do a comparison between the previous standards developed and the information collected about the actual performance for the

completion of the evaluation process of performance in an accurate way.

- Through a process of comparison between planned and actual performance deviation is detected and the result of the evaluation process is determined, and the punishment is on the responsible of inappropriate performance.

3 - Study analysis

- The designer successful performance from the Balanced Scorecard perspective:

Financially : it Reduces the completion time of the design stages, the quality of the resulting ideas technically, productivity , economic , achieving the company design philosophy, make the most of the possibilities available to the Company, overcome any shortcomings in the administrative system of the company, the constant updating of the design ideas according to Modern Technology materials and user trends and competitors , consider new ideas in the work to meet needs not exist before any new investment.

Clients: that is always trying to increase the confidence of the company's brand using renewed product design philosophy in terms of the (quality, cost, etc. ...), to try to satisfy existing users and attract others until the user become a partner with him in the development of design ideas.

Internal processes: efficient functioning of the stages of different design and this is the integration of the possibilities offered by the company and the potential performance of the designer. The company offers information about the product and the designer with his cognitive experiences and skills in information analysis and time management and organization of ideas and building prototypes and the work of engineering preliminary and final drawings.

Learning and training: the amount of the evolving capacities of the designer through training courses offered to him,

and contact with colleagues within or outside work, in order to improve product design ideas.

- **Successful performance of industrial companies from the perspective of Balanced Scorecard by following these principles:**

Financial performance indicators: true financial index can be achieved by distributing design tasks according to the efficiency of the performance of each designer, providing an appropriate environment in different design fields for the company to create fast design ideas, provide information for designers about competitors, provide raw materials and design accessories and modern production methods... etc. do not to compel designers with compliance the terms of the creative thinking, offer administrative system to facilitate the work of the distribution of the business and determine the actual time for each design stage considering the degree of importance.

customer management Indicators: we can manage users work through interactive and complementary system to gather their opinions and their participation in the product design, then converting it to the standards or criteria according to it design ideas produced, in addition to the ongoing follow-up with the user during use in order to have the largest number of current users and potential customers with the company.

Operational Performance Indicators : This indicator can be achieved managing design projects professionally and this is done by determining the required products that can be produced and developing manufacturing ideas, calculates the success chances in the local and global markets, conduct study and development, design development, production of the products.

Training and education indicators: can be achieved by the elements: company philosophy, leadership, integration and coordination of activities, team spirit,

develop indicators to measure the development achieved for the design quality through training and education of the designer.

We can get out of the previous Display a plan to improve and develop the performance of the design stages as follows:

- The use of information related to the study product time to determine standard times for the stages of design.
- Programming product design stages, according to the times of new products submission.
- Identify designer performance rates in all stages of the product design.
- Design and development management identify the designer needs of tools and equipment necessary for the production of new design ideas.
- Identifying and planning human Resources (designers) and the mechanism required for completing the design stages.
- Evaluation of the efficiency of the designer performance through the product stages in accordance with the standard time and rates of the product presentation/ performance stages.
- Work to raise the efficiency of the design stages by changing the performance way of work or rearrange the workplace.
- balancing the stages of product design on the basis of the development of the standard time data to the company's policies.
- Identify and assess the cost of the product design stages.

It is clear from the previous view: There is an interactive relationship between the performance of the designer and the performance of the industrial company.

- Guidance approach to improve the performance of the system of design in industrial companies, according to system based on the Balanced Scorecard

Provides a quantitative measurement of key performance indicators through the information supporting the industrial companies in the long long-term time. Using knowledge of the extent of progress toward achieving the goals of the design. Companies develop a disciplined framework to take advantage of the Balanced Scorecard framework to transform this vision, mission and strategy of the company to set the objectives of the designer work. The framework

includes the quality of the work and its quality, the amount of work, the time taken to achieve the business, and optimal utilization of available resources, and this frame there is a visual connection between the goals of design projects

and programs that works out the designer, and the measurements used to track the success of the work of the designer. **The table below illustrates this:**

Table 1. The relationship between the measurement of the elements of designer's performance and how industrial companies manages designer's performance

Performance Management Designer Performance	Performance Measurement	Performance indicators	Performance Standard	Determine the gap between Actual and planned performance	Solution
Studies Phase	<ul style="list-style-type: none"> - Information database company Provides all the wishes of the users. - Collecting information from user environments. - Collecting user information recorded by cameras in the work environment. - Designer works out product in order to discover the advantages and disadvantages. - Making panel discussions with users and colleagues. - Analysis of competitors' products. - Visiting local and international exhibitions. 	<p>The designer depends on the following at this stage:</p> <ul style="list-style-type: none"> - Information database company Provides all desires. - Analysis of competitors' products. - Visiting local and international exhibitions. 	The proportion achieving this element is 43%, which affects the quality of output and the method of performance and effectiveness of the use of information.	There are shortcomings in the Egyptian industrial companies as a result of the failure to provide all methods of gathering information and this step is important in the development of design ideas.	<ul style="list-style-type: none"> - Providing an environment for designer himself for the use of the product, whether inside or outside work. - Organizing work time to work so as to include time for panel discussions with processing facilities for this. - Providing a budget to buy cameras and making an agreement with samples of users to record their use.
Display methods and output	<ul style="list-style-type: none"> - Clarifying the idea of different types of perspective. - Clarifying the details with suitable perspective angles. - Clarifying the nature of the raw materials and finishing the true colors. - Clarifying the features of the design methods with suitable show. - Time of drawing perspective. 	The designer, uses all the means to illustrate the idea of design.	<p>The proportion of the achievement is 100%.</p> <ul style="list-style-type: none"> - This achieves the quality of ideas of the available possibilities to clarify all the details of ideas. - The absorption of an appropriate time to take out the idea. 	There are no limitations due to the availability of potential in computers and peripherals sketcher device in addition to the skills of the designer.	<ul style="list-style-type: none"> - The continuous updating for computers and its accessories. - Attention to university education for the development of manual skills.
Generate design ideas	<ul style="list-style-type: none"> - The extent of benefit from the friction with the international designers for the transfer of expertise. - The use of design method considering cost and quality. - The use of job analysis method. - The use of job's performance development method. - The use of modern design trends, a design 	<p>The designer works every measurement except.</p> <ul style="list-style-type: none"> - Friction with the international designers to transfer experiences. 	<p>The proportion of the achievement is 87.5%.</p> <p>Which achieves a majority of the company's goals.</p>	<p>The proportion of limitations is simple but due to modern trends of competitors to achieve more than a user desires to obtain the largest amount of sales, we should increase the designer's creativity.</p>	<ul style="list-style-type: none"> - Help from the world's designers to stimulate the Egyptians designers offer their philosophy in the design of the product. - Providing cooperation protocols to friction with offices of global design.

	<ul style="list-style-type: none"> and interactive design sense. - Optimal use of company's resources. - Hybridization of traditional products with modern technology. - The achievement of policy brand. 				
Making engineering drawings	<ul style="list-style-type: none"> - Clarify portions ratios relative to each. - Making engineering drawings in general. - Making detailed drawings of each part. - Making sectors of the engineering describe the various assemblies. - Clarifying the types of raw materials for each part. 	The designer does all this manually and a technical assistant draws computer programs to save time for the designer.	The proportion of the achievement is 100%. Thus achieving an important aspect in the design to set design ratios and preparation of production drawings.	This is done without any phase Palaces.	Engineering drawing software update and give technical training courses where.
Making prototypes	<ul style="list-style-type: none"> - Making models using simple materials, a paper, cardboard, foam ... Etc. - Clarifying stereoscopic ideas in computer programs. - Making models using Rapid Prototyping technology. - Providing experimental laboratories to clarify the ratios parts, mass, color and experimenting with parts that have a relationship with the user. 	All companies rely on models showing design computer programs and simple models. But Some companies rely on Rapid Prototyping.	50% of the companies depend on showing the design of all previous techniques while the remaining 50% rely on computer software and simple models.	There are limitations to the use of non-Rapid Prototyping, which saves time and effort and provides value readjustment models.	<ul style="list-style-type: none"> - Awareness of the need for companies to use Rapid Prototyping. -Providing of concerned centers on the Modernization of Industry Centers for Rapid Prototyping for the use of companies or providing material support to them. - The work of labs to test design ergonomic.
Emotional ability	<ul style="list-style-type: none"> - Affected by the new changes. - Inspired by the design elements from the surrounding environment. - Influenced by agitators of mind arising from the usage habits. - And put the ideas resulting from multiple directions. 	The designer has all these abilities and as a result of companies unawareness of supporting these abilities the quality of ideas decreases.	Ratio to achieve the efficiency of each of these capabilities is 75%.	The proportion of limitations is simple but affects the quality of ideas.	<ul style="list-style-type: none"> - Developing a system that allows the designer to visit natural places. - Developing a system that allows the designer with the presence of the user. - Developing a system that allows familiarized them - selves with all the new.
Commitment	<ul style="list-style-type: none"> - To do the work required from him. - Adheres to the instructions of the directors and all the management objectives - Provides the job assigned to him on time. - Knows the limits of dealing with others. 	The designer to abide by all previous	The proportion of the achievement is 100% Thus achieving an important aspect in the design is to provide the product in time.	There is no failure	<ul style="list-style-type: none"> - Developing an effective system to stimulate the designer that commensurate with the nature of each obligation.

<p>Enthusiasm in work</p>	<ul style="list-style-type: none"> - Does a designer have the enthusiasm for the completion of design ideas? - Is he involved in the improvement and development of the project design objectives? - What is the image that he sees the new design with? 	<p>The designer has enthusiasm for the completion of design ideas and the more experience improves the quality of the design.</p>	<p>The proportion of the achievement is 66.6%.</p>	<p>There is inadequity as a result of the unavailability of culture in the development of the project design objectives.</p>	<ul style="list-style-type: none"> - Designer is involved in the plans of new product. - Designer is given material and moral incentives. - Making competitions for Design.
<p>The achievement of the goals and the plans of the design</p>	<ul style="list-style-type: none"> - Do we learn from the feasibility study and the extent to which the implementation of the idea is accepted? - Does he draft the idea in the range of users' needs and achieves the highest expectations. - Taken advantage of the feedback information from users and modifying it. - After putting the product on the market comes the work of a new map for future development. - Offers a new idea before competitors. 	<p>The designer makes The feasibility study. The Formulation of the idea within the limits of the needs of users to benefit from the feedback information from users and modifying it.</p>	<p>The proportion of the achievement is the 60%.</p>	<p>There are limitations due to the lack of training courses designed to manage his time and work plans to be done to provide the product before competitors.</p>	<ul style="list-style-type: none"> - Attention to administration cycles of the designer. - Training the designer through the design work.
<p>Speed in learning and training</p>	<ul style="list-style-type: none"> - Does it respond to commands from the first time? - Does he take advantage of the courses from the first time? 	<p>Respond to orders by the more years of experience.</p>	<p>The proportion of the achievement is 100%, according to years of experience.</p>	<p>There is no failure</p>	<ul style="list-style-type: none"> - Develop a system to take advantage of the capabilities of the designer according to his skills and experience.
<p>Benefit from the education and training</p>	<ul style="list-style-type: none"> - Does he get better performance at work and affect the design process. - Does he give work with the quality and time required? 	<p>The performance of the designer Improves by training courses, but It is preferred to benefit from the experiences of designers.</p>	<p>The proportion of the achievement is the 50%.</p>	<p>There is shortage due to the companies' interest in training courses only.</p>	<ul style="list-style-type: none"> - Establishing rules for the employment of the designer. - The designer took positions suitable for expertise.
<p>Designer relations with managers and colleagues</p>	<ul style="list-style-type: none"> - Does he accept criticism and obey orders - Are designer's opinions constructive, helpful and has respectful relationships outside of work with his colleagues and subordinates? - Does he respond to the requirements of users? 	<p>Designer Features high culture in the transactions and relationships with everyone.</p>	<p>The proportion of the achievement is 100%.</p>	<p>There is no failure.</p>	<ul style="list-style-type: none"> - Setting rules and limits for the sanctions regime according to the quality of each deal.

It provides measurement descriptive perceptions virtual support relationships and links between elements and the contents of the design strategy, development, and performance indicators of the performance of balanced industrial designer.

This identifying cause and effect relationships from the beginning of the education and training of the designer and the end of the financial performance achieved for the company, to provide a road map guiding combine different

trends in the design of a single path ultimately leads to achieving the goals of the design to regulate the business of design. **An example for this:**

If we improve the performance of the designer by training and knowledge (reason) is either to develop the quality of the product and service. While improving the actions before competitors to get back on the quality and cost of the product (reason) is either to improve the level of users'

service. This means increasing the confidence of existing users and potential customers, even if it happened would affect the financial results, profitability and competitive position of the industrial companies. The figure below illustrates: the drafting of the strategy map and how to take advantage of them to achieve successful performance of the industrial designer and the company.

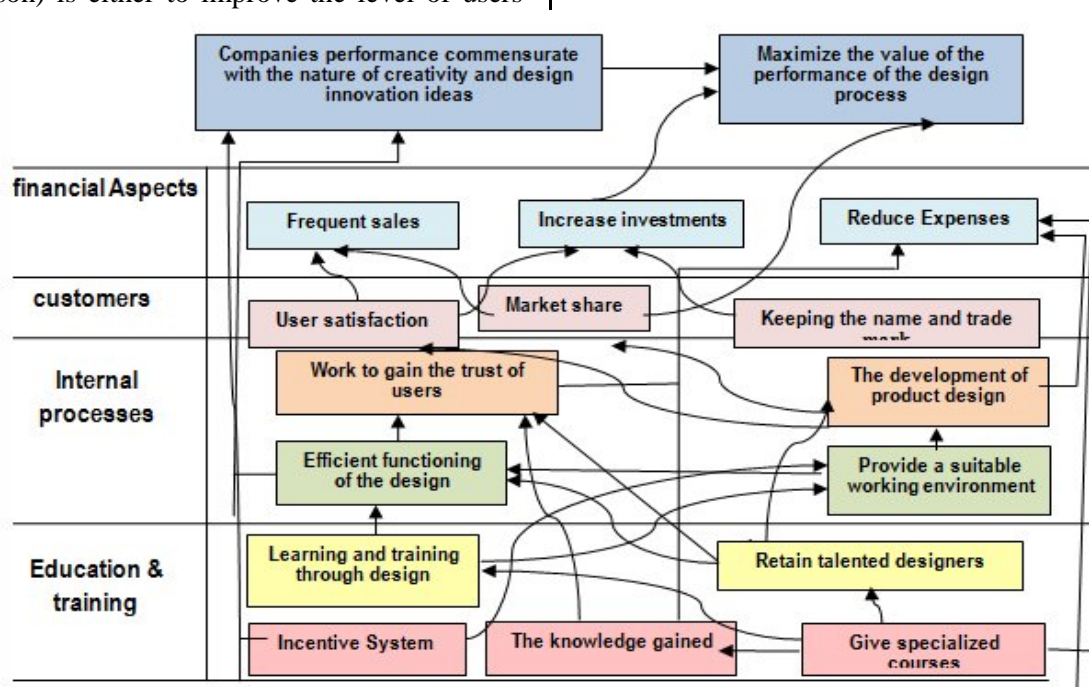


Figure 1. Map shows the formulation of the strategy and how to report them to achieve successful performance of the designer and the Industrial Company

The proposed methodology for evaluating the performance of the designer using the Balanced Scorecard

Balanced Scorecard is working on a balanced measure to improve the performance of the components designer in accordance with the objectives of each project for my design company in order to emphasize the strengths and promotion, and address weaknesses.

The evaluation model is built according to the designer's performance goals design plan for each product in the Industrial Company as follows:

Given record is designer to measure the performance of the company.

- Determining the relative weights of each component of improving the performance of the designer in accordance with the importance of the element to the type of product.
- Give a value for the efficiency of the performance of each component, which helps to evaluate each item separately and know where lies the strengths and weaknesses.
- Providing the company with feedback and thus help the company to take the necessary measures to improve the performance of the designer.

An example of assessing the performance of the designer when designing Cooker People

Table 2. Overall rating elements of performance designer

	Elements of designer performance	Relative weight	Efficient performance %
1	Studies Phase	8	78,1
2	Display methods and output	5	53,8
3	Generate design ideas	9	80,7

4	Making engineering drawings	4	70
5	Making prototypes	3	60
6	Emotional ability	7	65
7	Commitment	6	45
8	Enthusiasm in work	5	55
9	The achievement of the goals and the plans of the design	7	74,3
10	Speed in learning and training	8	75
11	Benefit from the education and training	8	80
12	Designer relations with managers and colleagues	3	40
Total		73	67,8

The efficiency of the overall performance (%) = the efficiency of the performance of the first element (%) × weight relative to the first element / total weights relative + performance efficiency of the second element (%) × relative weight of the second component / total relative weights + ... to other elements

The efficiency of the overall performance (%) = $78,1 \times 8/73 + 53,8 \times 5/73 + 80,7 \times 9/73 + 70 \times 4/73 + 60 \times 3/73 + 65 \times 7/73 + 45 \times 6/73 + 55 \times 5/73 + 74,3 \times 7/73 + 75 \times 8/73 + 80 \times 8/73 + 40 \times 3/73 = 67,8\%$

Example detailed to assess a component's performance designer (studies Phase), which divides each element of a set of goals and define each goal relative weight according to its importance to the stage of studies, each target group outputs and determine its relative weight according to their relevance to the target, and identifies each output a set of performance indicators and determines the percentage of the target and achieved performance of the designer and the efficiency of the performance **table below illustrates this:**

Table 3. Overall rating for performance in a stage designer Studies

M	The objectives studies phase	Relative weight	Efficiency %	Output	Relative weight	Performance indicators	Relative weight	Target %	Inquisitor %	Efficiency %
1	The company provides an information base for all the wishes of users	7	75,8	Product design achieves economic requirements.	4	- The price of the product compared to similar products. - Production methods. - The raw materials used.	5	50	35	70
							4	40	30	75
							3	10	8	80
				Design of a product achieves aesthetic requirements.	2	- Proportions of the parts. - Proportions of the colors used and compatibility. - Suitable format for jobs.	6	30	25	83
							4	25	20	80
							7	45	40	89
				Design of a product to achieve the quality requirements.	2	- Application of standards of design quality. - Application of quality standards for the environment.	9	70	50	71
							4	30	20	67
2	Collecting user information from the actual viewing environment used cameras or register	5	95,3	Achieve the requirements of the job.	5	- Matching the design of parts of the product to perform the job. - The quality of the performance of the job.	6	40	30	75
							4	30	25	83
							3	30	30	100
				Achieve dimensions of Use.	7	- Suitable work surface for the user. - Suitable parts of the product to use.	4	40	30	75
				The achievement of psychological comfort for the user	4	- The proportion achieving design sense. - The proportion achieving interactive design.	5	25	20	80
							3	50	35	70

3	Workout product designed to discover flaws and features	4	92	Design of a product investigator for more features	3	- The proportion achieving the basic functions of the product. - The proportion achieving the add-ins.	7	80	65	81
						4	30	20	67	
				Design of a product is identical to the standard specifications	4	- The proportion of competitive product - The service life of the product	6	70	60	85
							2	30	20	67
4	Action panel discussions with users and colleagues	6	66,6	Reached new ideas.	6	- The proportion of take advantage of technological advances. - The proportion of user satisfaction.	6	30	15	50
						8	80	70	88	
				Increase the product life cycle	9	- Increase profits. - Increase the confidence of the name and brand.	6	45	20	44
							5	35	25	71
5	Knowledge of trends and competitors analysis products visit local and international exhibitions	8	71	Design a competing product in the quality and cost	5	- The proportion of product quality for similar products. - The percentage of sales for similar products.	5	75	60	80
						7	90	60	67	
				Providing product faster than competitors	4	- Time taken to deliver the idea. - The use of modern technology	4	70	50	71
							3	30	20	67
Total		30	78,1							

The efficiency of the overall performance of the goal of the first phase studies = $(70 \times 5/12 + 75 \times 4/12 + 80 \times 3/12) \times 4/8 + (83 \times 6/17 + 80 \times 4/17 + 89 \times 7/17) \times 2/8 + (71 \times 9/13 + 67 \times 4/13) \times 2/8 = 75,8\%$

And so are the rest of the expense of goals
 Total Efficiency of the stage = $75,8 \times 7/30 + 95,3 \times 5/30 + 92 \times 4/30 + 66,6 \times 6/30 + 71 \times 8/30 = 78,1\%$

Thus the expense of the rest of the elements are evaluating the performance of the industrial designer

This explains

The Balanced Scorecard: Is a management system (not only a measurement system) enables companies to clarify its strategic vision and translate them into action. It directs and evaluates the performance of Performance designer to create future value to their products.

The balanced objectives of industrial companies: It is a translation of the message and vision of the company and turns it into a future reality through strategic management and performance measurement which is abstracted. The main objective is continuous change and improvement, success and excellence.

Strategic map: Describes the relationships and connections between the performance of the designer and companies 'vision that are seeking to achieve the goals of progress, which leads eventually to the achievement of the vision and mission of the company.

4 - Results of the field study, interpretation and validation of hypotheses.

A - The characteristics of the study sample

The following tables show the characteristics and attributes of the community of study are as follows:

Table 4. The distribution of the study community by variable Qualification

Qualification	Repetition	Percentage
Bachelor	28	80%
Master	6	17%
PhD	1	3%
Total	35	100%

Table 4 explains that 3% have bachelor science Ph.D., while 17% have bachelor scientific Master and 80% of the study community have

bachelor degree, and it is clear that the highest percentage is Bachelor due to the fact that industrial companies do not need a degree but

you need practical experience to develop a | competitive design ideas from all aspects.

Table 5. The distribution of the study community by job named

Named job	frequency	Percentage
Managers senior management.	5	14%
Managers design management.	7	20%
Human resources Management Directors	8	23%
Industrial Designer.	15	43%
Total	35	100%

Table 5 explains that 14% are job named managers of senior management, while 20% are job named managers design management, 23% are job named managers of human resources management, to learn from them what are the methods used to evaluate the performance of the designer and to improve their point of view in these methods (catalyst, or non-catalyst), and

what are their future plans to improve the performance of the designer, 43% of the study community industrial designer was the highest percentage to determine their strengths and weaknesses in the administrative system used to evaluate their performance and improve as they are the people who are able to specify their requirements to improve their performance.

Table 6. The distribution of the study community by years of experience in the Current Position

Years of Experience	Repetition	Percentage
Less than 5 years in the field of design	4	11%
5:20 of the Year in the field of design	11	31%
Less than 5 years as managers design management	2	6%
5:20 years as managers of design management	5	14%
Less than 5 years as managers of human resources management	2	6%
5:20 years as managers of human resources management	6	18%
Less than 5 years as managers of senior management	1	3%
5:20 years as managers of senior management	4	11%
Total	35	35%

Table 6 explains that 11% years experience less than 5 years in the field of design unanimous in their views on the improvement of the performance that comes from the good performance of the Company to prepare a system that allows them the opportunity which is: the benefit from the experienced local and international designers, friction with the various departments, analysis of the company's various products and competitors, in addition to being nominated for the training sessions, motivating them intellectually and morally. While 31% of 5:20 years experience in the field of design unanimous in their views on improving their performance which comes from friction and design posts with foreign designers in any way, whether through panel discussions or giving lectures or visiting foreign shows. They are more motivated by material yield, and all the designers that their years of experience less than 10 years are preferred to belong to the company because the administrative system allows them to benefit the most. The views of the designers that their years of experience more than 10 years that they prefer to work independently and they want to be demanded from outside the

company's system. All the years of experience less than 5 years and 5:20 years who work as design managers management unanimously agreed to improve the evaluation system of the designer to include balanced Scorecard system. The level of success of the product in the market and see user reactions after the use of user and maintenance. All years of experience less than 5 years and 5:20 year who work as managers of human resources management unanimously agreed to give them powers to develop and improve the system used to evaluate the performance and develop plans to improve it. All the years of experience less than 5 years and 5:20 years as managers of senior management unanimously agreed that the successful performance of the administration resulting from the successful performance of the designer therefore there should be continuous development to improve the performance of the Egyptian industrial companies.

B - Interpretation and analysis of areas of study

To analyze the areas of resolution (T) test was used per One Sample T test, and the paragraph is positive in the sense that the respondents

approve of the content; If the value of (T) calculated is greater than the value of (T) spreadsheet which is equal to 1.99 or level of significance less of 0.05 and the relative weight is greater than 60%, and the paragraph is negative in the sense that the respondents do not agree on the content; If the value of (T) is less

than the calculated value (T) and spreadsheet which is equal to 1.99 or less level of significance of 0.05 The relative weight is less than 60%, and the views of the sample are neutral, if you have the greatest level of significance of 0.05.

Table 7. the analysis and interpretation of the first paragraphs of the field

Companies performance management assesses and improves the performance of the designer according to the balanced Scorecard performance in the Egyptian industrial companies

	Paragraph	SMA	Relative weight	Value (T)	The level of significance	Ranking
A	Model planning and evaluation to measure the performance of the designer					
5	Preparation so that incorporates the four perspectives of the Balanced.	4.39	86.89	18.987	0.000	1
6	Evaluation includes finding out user satisfaction after (putting the idea, the work of the first sample, batch production, and use).	4.26	85.75	15.956	0.000	2
4	Defines the elements of the assessment to comply with the objectives of required development.	4.23	84.79	15.127	0.000	3
3	Evaluation associated with plan of time and the measurable elements.	3.78	77.50	9.578	0.000	4
1	The assessment includes senior management, direct managers, human resources management, other departments involved.	3.63	76.26	8.977	0.000	5
2	Evaluation is achieved by filling out the form or observation or both.	3.32	71.86	7.577	0.000	6
	All paragraphs	3.94	80.51	12.704	0.000	
B	Organizing the evaluation system					
8	The management changes the evaluation system whenever new directions appeared for evaluation.	4.29	85.71	19.396	0.000	1
9	Management creates management plans for evaluation system for the benefit of the company.	4.23	84.68	13.974	0.000	2
7	Measuring positive yield for evaluation to determine its impact on improving the performance of the designer by training, providing all the modern methods of gathering information, the system is estimated as administrative flexible of the designer's work nature.	4.05	81.04	10.265	0.000	3
10	Responsible management is for the allocation of the evaluation system.	3.56	71.83	6.104	0.003	4
	All paragraphs	3.03	80.82	12.435	0.000	
C	Follow-up evaluation system					
13	Does the evaluation system of the designer's performance to know the quality of the product (user, merchant, maintenance)?	3.97	79.48	10.950	0.000	1
12	Does the evaluation system include level product success in the market?	3.94	68.70	10.246	0.000	2
11	Will the evaluation system be catalyst to improve the performance of the designer?	3.71	64.29	7.956	0.000	3
14	What are more incentives that improve the performance of the designer (physical, moral, and intellectual, belonging to a foreign management system)?	3.65	63.51	7.320	0.000	4
15	Is a good evaluation system designed to improve the performance and thus the quality of the product?	3.57	62.38	6.383	0.000	5
	All paragraphs	3.77	65.67	8.571	0.000	

Value Tabulated (T) at 76 degrees of freedom and 0.05 levels equal to 1.99 (T) Test was used per sample; to know the views of members of the study sample on the paragraphs relating to the model planning to assess and measure the performance of the

designer and the follow-up of evaluation system, and the results are shown in Table (7), which shows that the views of respondents in all paragraphs are positive as significance level is greater than 0.05 and the relative weight of each paragraph is greater than 60%, which means that

the emphasis on planning and evaluation model to measure the performance of the designer must include the degree of importance from the highest to the lowest **as follows:**

- Preparation so that incorporates the four perspectives of the Balanced, the relative weight of 86.89 %, was ranked first.
- Evaluation includes finding out user satisfaction after putting the idea, the work of the first sample, batch production, use, the relative weight of 85.75 %, has occupied the second place.
- Defines the elements of the assessment to comply with the objectives of development required, the relative weight of 84.79 %, was ranked third.
- Associated evaluation of time and the elements of the plan are measurable, relative weight 77.50 %, has occupied the fourth place.
- The evaluation system of senior management, direct managers, human resource management, other departments involved, the relative weight of 76.26 %, was ranked fifth.
- Rated fill out the form or note, or both, the relative weight of 71.86 %, was ranked sixth.

It also includes the organization of the evaluation system according to the degree of importance from the highest to the lowest , respectively (the administration to change the evaluation system whenever there are new directions for evaluation, devise management plans for a new evaluation system for the benefit of the company , measuring positive yield evaluation to determine its impact on improving the performance of the designer by training , providing All modern methods of gathering information , the system is estimated administrative flexible nature of the work of the designer, is responsible for managing the allocation of evaluation system, the relative

weight of 85.71 % , 84.68 % , 81.04 % , 71.83 % , respectively, have occupied the rank of (1:4) respectively.

It also includes the follow-up of the evaluation system according to the degree of the highest importance to the lowest , respectively (Does the evaluation system of the designer's performance is to know the quality of the product from the user, merchant , maintenance ,does evaluation system the level of success of the product in the market.

Do you have the evaluation system a catalyst for improving the performance of the designer, what is the most incentives that improve the performance of designer material, moral, intellectual, belonging to the management system foreigner, you affect the evaluation system good to improve the performance of the designer and hence the quality of the product, relative weight (79.48 % , 78.70 % , 74.29 % , 73.51 % , 72.38 %) respectively, have occupied the rank of (1:5) respectively.

In general, it appears that the arithmetic average of all the planning paragraphs and the organization and follow-up, are respectively, 3.94, 3.03, 3.77, and the value of calculated (T) is equal to 12.704, 12.435, 8.571, respectively, which is greater than the value Tabulated (T) 1.99, and the relative weight is equal to 80.51%, 80.82 % , 65.67%, respectively, which is greater than the relative weight of the neutral 60%, and the level of significance of 0.000 which is less than 0.05, which indicates that there is a focus on the planning model to assess and measure the performance of the designer and the organization of the evaluation system and not be focusing on the follow-up of ineffective evaluation system which weakens the Policy of administrative system to evaluate the performance of the designer and improve it.

Table 8. analysis and interpretation of the paragraphs of the second field

The impact of the quality of the performance of industrial companies to improve the performance of the industrial designer in accordance with any developments

	Paragraph	SMA	Relative weight	Value (T)	The level of significance	Ranking
A	The efficiency of the performance of the project design					
2	Designers are classified according to their competence and are distributed according to the job efficiency.	4.14	82.34	14.304	0.000	1
5	The company has designed the system to benefit from foreign expertise.	4.09	81.94	12.529	0.000	2
4	Company is interested in analyzing the wishes of the user (quality,	4.02	78.49	11.833	0.000	3

	cost, culture, race, age).					
3	There is an effective system for work studies.	3.89	79.87	10.503	0.000	4
1	The company provides tools and suitable working environment for the designer.	3.44	74.47	8.752	0.000	5
	Total	3.92	79.42	11.584	0.000	
B	Satisfaction designer for services rendered to him by the company's management.					
8	The company's system of encouraging leads to stimulate the designer to achieve its goals.	4.03	80.57	12.747	0.000	1
7	Designer's sense of job security; supports creative ideas.	3.88	77.56	10.967	0.000	2
6	Training acquires designer skill of being able to improve the quality of design ideas.	3.78	75.59	8.169	0.000	3
10	Available programs using modern methods to evaluate the performance.	3.73	74.57	7.622	0.000	4
9	Designer is given the permission to change in his ways of performance and to express an opinion and constructive criticism.	3.73	74.57	6.998	0.000	5
	Total	3.83	76.57	9.300	0.000	
C	Identifying policies to improve the company's performance to work out.					
11	Provide a plan to improve the design ideas of designers by attracting foreigners to learn from their experiences, visit Foreign Trade, working with a multinational team through design workshops.	4.05	79.39	13.788	0.000	1
12	There are several techniques to do the studies, including the company's database for all areas, providing an environment for experimenting with the use of models, the designer collection of information environment of use.	3.74	77.97	11.950	0.000	2
13	Identification system to update the methods of evaluation and measurement of the elements to come out with the indicators that are able to identify and resolve the gap.	3.69	76.29	8.892	0.000	3
15	Identifying clear standards that are suitable for assessing the performance of the designer.	3.63	73.35	7.820	0.000	4
14	Develop a mechanism to follow up on the progress of the evaluation system and improve performance.	3.63	73.35	7.275	0.000	5
	Total	3.75	76.07	9.945	0.000	
D	Means available to develop the spirit of innovation and creativity of the designer.					
19	Designer is given courses in management to develop his performance for the completion of the design in less time and with higher quality.	3.10	62.36	9.636	0.000	1
18	Processing suitable places to hold workshops to discuss the production of design ideas.	3.07	61.92	8.529	0.000	2
17	Provide an effective means of communication for communicating between designers inside and outside the company.	3.04	61.20	8.267	0.000	3
16	The development of an administrative system by the designer's preference to work within the company or outside.	3.04	61.20	7.247	0.000	4
20	Provide a mechanism to follow up the developments of the competition.	3.04	61.20	7.007	0.000	5
	Total	3.06	61.58	8.137	0.000	

Value Tabulated (T) at 76 degrees of freedom and 0.05 levels equal to 1.99

(T) Test was used per sample; to know the views of members of the study sample on the paragraphs relating to the efficient performance of the project design and the level of designer satisfaction for services rendered to him by the company's management and the company determines the policies to improve the performance of the work by the available means to develop the spirit of innovation and creativity of the designer. The results are shown in table (8), which shows that the views of respondents in all positive paragraphs as the significance level is greater than 0.05 and the relative weight of each paragraph is greater than 60%, which means that the focus on the efficiency of the

performance of the project design should include the degree of importance of the highest to lowest **as the following:**

- Designers are classified according to their competence and are distributed according to the efficiency of this job, the relative weight of 82.34%, was ranked first.
- The company has designed the system to benefit from foreign expertise, the relative weight of 81.94%, has occupied the second place.
- Company is interested in analyzing the wishes of the user of quality, cost, culture, sex, age, relative weight of 78.49%, was ranked third.

- The existence of an effective system to do the studies, the relative weight of 79.87%, has occupied the fourth place.
- To provide the company with tools and suitable working environment for the designer, a relative weight 74.47%, was ranked fifth.

It also includes the level of designer satisfaction for services rendered to him by the company's management by the degree of importance from the highest to the lowest, respectively (the system of company's encouraging leads to stimulate the designer to achieve its goals, the designer's sense of job security; supports creative ideas, gain training designer skill of being able to improve the quality of design ideas, available programs, using modern methods of performance evaluation give designer validity of the change in the methods of performing his work and expressing opinions and constructive criticism), relative weight (80.57%, 77.56%, 75.59%, 74.57%, 74.57%), respectively, has occupied the rank of (1:5) respectively.

It also includes determining the company's policies to improve the performance of the work by the degree of importance from the highest to the lowest, respectively (providing a plan to improve the design ideas, there are several techniques to do the studies, identification system to update the methods of evaluation and measuring elements to come out with indicators that are able to identify the gap and resolve, determine clear suitable standards for evaluating the performance of the designer, set up a mechanism to follow up on the progress of the evaluation system and improve performance), relative weight (79.39%, 77.97%, 76.29%, 73.35%, 73.35%), respectively, has occupied the ranks of (1:5) respectively.

It also includes available means to develop the spirit of innovation and creativity of the designer by degree of importance from the highest to the lowest, respectively (give designer courses in management to develop the performance of the designer's completion in less time and with higher quality, processing suitable places to hold

panel discussions to produce design ideas, provide effective means of communication to contact between designers inside and outside the company. The development of administrative system by preference designer to work within the company or outside, provide a mechanism to follow up the developments of the competition), relative weight (62.36%, 61.92%, 61.20%, 61.20%, 61.20%), respectively, has occupied the mattress of (1:5) respectively.

In general, it appears that the arithmetic average of all the paragraphs of the efficiency of the performance of the design project and the level of designer satisfaction and determining the company's policies to improve the performance and the available means to develop the spirit of innovation and creativity of the designer, respectively, 3.92, 3.83, 3.75, 3.06, and the value of calculated (T) equal to 11.584, 9.30, 9.945, 8.137, respectively, which is greater than the value Tabulated (T) 1.99, and the relative weight equal to 79.42%, 76.57%, 76.07%, 61.58%, respectively, which is greater than the relative weight of the neutral 60%, and the level of significance of 0.000 which is less than 0.05, which indicates that there is a concentration of Egyptian industrial companies on the efficiency of the performance of the design project and the level of designer satisfaction and determining the company's policies to improve the performance because they recognize their importance in improving the quality of their products, but this weakens means of development of innovation and creativity of the designer complementary to improve the performance of companies.

C - Validate hypotheses

To test the hypotheses Use Find simple regression analysis method **as follows:**

Hypothesis: No statistically significant effect of company's performance management to evaluate and improve the performance of the designer according to the balanced scorecard performance in the Egyptian industrial companies at the level of significance (0.05).

Table 9. Results of the simple regression analysis to test the impact of company's performance management to evaluate and improve the performance of the designer according to the Balanced Scorecard in the Egyptian industrial companies

correlation coefficient R	coefficient of determination R2	Regression coefficient B	calculated value of T	Tabulated value T	Statistical significance	As a result the hypothesis
0.638	75.67%	0.450	11.237	1.99	0.000	Rejection

It is noticed from the results of the analysis of simple regression in the previous table that it has

a positive impact statistically significant at the level (0.05) for company's performance

management to improve the performance of the industrial designer , as the value of calculated (T) 11.237 and statistical significance of it is (0.000) and the value of Tabulated (T) 1.99 , as can be seen from the results that the company's performance management explains what is accounted for 75.67 % of the variance in improving the performance of industrial designer, that amounted to 75.67 % of the changes in improving the performance of industrial designer arising from the change in company's performance management , and as the value of calculated (T) is larger than the value of Tabulated (T) rejects the null hypothesis and accepts the hypothesis **which states:**

There is statistically significant effect of company's performance management to assess the performance of the designer and improve it according to the Balanced Scorecard performance in the Egyptian industrial companies at the level of significance (0.05). This is due to the company's performance management directly affecting the improvement of the performance of the industrial designer.

Hypothesis: There is a statistically significant effect on the quality of the performance of industrial companies to improve the performance of the industrial designer according to any developments.

Table 10. Results of a simple regression analysis to test the impact of the quality of the performance of industrial companies to improve the performance of the industrial designer in accordance with any developments

correlation coefficient R	coefficient of determination R ²	Regression coefficient B	calculated value of T	Tabulated value T	Statistical significance	As a result the hypothesis
0.894	73.41%	0.653	9.734	1.99	0.000	Acceptance

The analysis of simple regression in the previous table shows that there is a positive impact statistically significant at the level (0.05) for the quality of the performance of industrial companies to improve the performance of the industrial designer in accordance with any developments , as the value of the calculated (T) (9.734) and the statistical significance of it is (0.000) and reached the value spreadsheet (T) (1.99) .It can be seen from the results that the quality of the performance of industrial companies to improve the performance of the industrial designer in accordance with any developments explains that the rate (73.41 %) of the variance in improving the quality of the performance of industrial companies to evaluate the performance of the designer to improve it .What is worth (73.41 %) of the changes in improving the performance of the industrial designer arises from the impact of the quality of the performance of industrial companies to improve the performance of the industrial designer . as the value of the calculated (T) is greater than the value of Tabulated (T) accepts the hypothesis of the research. this is due the higher the quality of the performance of companies increased to improve the performance of the designer.

Results:

1. The existence of integration between industrial companies follows a good system

to evaluate the performance of the designer and Balanced Scorecard different perspectives, Which made it a measure of performance balanced very convenient tool to derive a model for evaluating the performance of the industrial designer who focuses on measuring quantitative and descriptive, in order to provide the information necessary to manage the performance of the industrial designer.

2. Develop a model to quantify the performance of the designer based on key performance indicators for the Balanced Scorecard, so as to provide the necessary information to support the performance of the industrial designer, by knowing the extent of progress toward achieving the goals of product design, the correct path to achieve these goals in case of deviation from the path of strategic product design target.
3. Develop a model to measure the performance of the descriptive designer based on the use of maps Strategic Balanced Scorecard, And to provide support perceptions Virtual Performance Management Industrial designer what should be the relationship of cause and effect as of the company's interest to maximize the value of the performance of the design process and the end of the performance in perpetuating financial results as results of the performance of the designer.

Conclusions:

The subject of renovation and developing of Egyptian industrial companies and introducing the concepts and indicators of companies performance has become one of the most important issues of contemporary management. Therefore the study focused on the development plans and improving the performance of the designer in industrial companies through knowledge and skills to ensure the effectiveness of its role in the current and future design. The study showed that the most important factor in the success of a plan of improving the performance of the designer is due to the re-evaluation of the designer's performance in accordance with the Balanced Scorecard through the four perspectives to get the designer on the authority to act on the effectiveness of a good system for the management of the company's performance. It is the cornerstone of strategic management performance of the designer to achieve the goals of the design. Among the most important results is that the organizational structure of the company should include specialized department responsible for development plans and improve the performance of the designer as well as training courses. In order to achieve better performance of industrial companies the Egyptian system should continue in the development of the designer incentives of all kinds.

Recommendations:

1. We should focus on instilling a culture of discrimination and innovation and the administrative creativity in industrial companies to come back to improve the performance of the designer in a strong and successful and effective way.
2. Restructuring the performance of company's management to assess the performance of the designer so that the system is built on the balanced scorecard.
3. Improving the work of human resource management of industrial firms to include plans for the development of non-performance designer training courses, in addition to improvements in the process of hiring the designer.
4. Increasing the interest in the rewards of all kinds of creative and talented designers in order to encourage them to generate new design ideas, and it rewards them materialistically and morally by having them

higher positions or by holding celebrations to honor creative designers.

5. Emphasizing on the importance and the role of developing the performance of the designer as one of the strategies of those industrial companies to improve the designer's performance of their employees.

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