

A Comparative Study on Quantitative Approach, System Approach and Contingency Approach to Management Thought

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ABSTRACT

This study inspects the contemporary theories of management contextually quantitative approach, system approach and contingency approach since the comparison mode of the study, quantitative approach treaties with mathematical tools and methods use for managerial decision, system approach divulged the interaction and interrelationship from the contemplation of whole as a system and contingency designate not the specification or particular issues of management or organizationally but the basis on situation or contingent. This study is formulated on the historical data of the contemporary issues of management that find three streaming based on findings of the Management modern theories. By the descriptive type study of the theories, it has been tried to acquaint with the distinctive and related focuses on these theories.

Keywords: Modern management approaches, Managerial decision, Quantitative, System, and Contingency.

I. INTRODUCTION

Management is existed from any corner of the world and its action engulfing since emergence of the civilization. Modern Management has grown with the aggregate of social –economies and scientific movement. Modern Management outlook is that the people is not working for money others thinks need to well-thought- out. To meet the satisfaction and the wellbeing with living modus, no financial factor works as one of the elicit aspect. Contemporary management action is delightful to customary up the overall complaint, afterwards the 1950's the modern management theories stated the action on the spotlighting organizational issues, process, system, culture, behavior, organizational environment culture, societal matter; are deliberate as the theories up-to-the-minute replication. Some people gave theory effort to enhance the modern theories of management especially to the quantitative, system and contingency approach of the modern theories; Daniel Katz, Richard A. Johnson, G.M. Stalker, Joan Woodward, L.W. Lorsch Tom Burns, Paul R. Lawrence, Johan Mac Donald, George R. Terry Andrew Szilagyi are well known. Modern management theories consisting many streaming relating to, this study covers mainly major three concerns that means quantitative, system and contingency approaches. Quantitative is just about the approach of mathematical observation and numerical analysis of using model and tools not the overall matter, system approaches vastly related with the interaction among the different forces of the organization that closely related with each other in an open or closed system that also indicates the input, transformation, output and feedback at overall manner on the others hand contingency approaches shows the action is not the issues of displaying but it is the pragmatic too that means it has the really side that its situation everything of the consideration of the organization is situational based with better setting of objectives, policies, corporate governance practices actions plan, as a part of manager to consider to take resolution on the contingent. No particular solution is best but the situations to changes need highly skills of human behavior, about the strategies concern of the manager at the outlook of macro or micro on the others hand internal and external considerations.

II. THEORETICAL FRAMEWORK

Management:

Management is often included as a factor of production along with, machines, materials and money. According to the management guru Peter Drucker (1909-2005), the basic task of management includes both marketing and innovation. Practice of modern management originates from the 16th century study of low-efficiency and failures of certain enterprises, conducted by the English statesman Sir Thomas More (1478-1535). [1]

"To manage is to forecast and to plan, to organize, to command, to co-ordinate and to control by Henri Fayol [2]

Management theory:

A collection of ideas which set forth general rules on how to manage a business or organization. Management theory addresses how managers and supervisors relate to their organizations in the knowledge of its goals, the implementation of effective means to get the goals accomplished and how to motivate employees to perform to the highest standard according to business dictionary. [3]

Quantitative approach:

During World War II, mathematicians, physicists, and other scientists joined together to solve military problems. The quantitative school of management is a result of the research conducted during World War II. The quantitative approach to management involves the use of quantitative techniques, such as statistics, information models, and computer simulations, to improve decision making. This school consists of several branches, described in the following sections. By clifnotes. [4]

System approach:

A line of thought in the management field which stresses the interactive nature and interdependence of external and internal factors in an organization. A systems approach is commonly used to valuate market elements which affect the profitability of a business by business dictionary. [5]

Contingency approach:

The contingency approach is a management theory that suggests the most appropriate style of management is dependent on the context of the situation and that adopting a single, rigid style is inefficient in the long term. Contingency managers typically pay attention to both the situation and their own styles and make efforts to ensure both interact efficiently. The contingency approach contrasts with other forms of leadership, such as trait-based management, whereby personality and individual make-up predict patterns of management and responses to given situations over time. Another management approach is style-based app by hrzone [6]

III. LITERATURE REVIEW

The reflection is to deliver an eagle-eyed evaluation of the past study mechanism related to the contemporary study, delimited by the researches thru the following are mentionable: Modern management theories taking place subsequently 1950s. Modern management scheme attentions the enlargement of each factor of workers and organization.

The system school brings focus on the organization's various functions and the importance of ensuring that the different components function in a synergy that ensures that the overall outcome of the organization is up to expectations (Lewis, Stephen and Patricia, 1998) [7]

The crux of modern management is or should be to develop approaches to handle chaos and generate order out of the uncertainties. In all this, like „man behind machine“, the people that is „human resources“ are going to impart the much-needed desired flexibility (Drucker, 2001) [8].

Management science origins can be traced to operations research, which made its debut during World War

II when the Allied forces recruited scientists of various disciplines to assist with military operations. In these early applications, the scientists utilized simple mathematical models to make efficient use of limited technologies and resources. The application of these models within the corporate sector became known as management science (The University of Tennessee, 2006) [9]

The modern approach to strategic management which emphasizes the importance of focusing on internal processes in order to remain competitive in the increasingly competitive business environment (Sheldrake, 2003) [10]

Modern approaches tend to reinforce rather than weaken the traditional approaches to management (Mullins, 2005). [11]

The resource based view of the organization and the systems theory further reinforce the scientific by emphasizing the importance of processes and their coordination in the organization (Raduan, et al, 2009) [12]

Aforesaid study customarily impressed distinctive level of management theories from different perspective this study is concerned with the comparative study of three important approaches of modern management so to say quantitative approach, system approach and contingency approach at the circumstantial.

IV. OBJECTIVES

- To scrutinize the Contemporary theories of Management.
- To compare the approaches of Quantitative, System and Contingency.
- To Spectacle the general level of application of these approaches.
- To evaluate these approaches from the application senses of Organization.

V. METHODOLOGY

This Study is descriptive and qualitative in nature. To the purposive basis of the study it is conducted the movements predominantly secondary based data. It is taken the data from, articles (National and International), books, newspaper, conference paper, online data views. It is the work of historical and the contemporary issues of management theories that dignify the Imperative meadow of Management and its theories as that has been inspected the management vis-à-vis data at integrated modus.

VI. DISCUSSION

Modern management theory denotes to accentuating the use of efficient mathematical procedures in the system with scrutinizing and empathetic the inter-relationship of management and personnel in all characteristic. Modern management concepts started afterwards 1950s. Modern interpretation involves that an employee ensures not labor for only coinage. They labor for the consummation & contentment with good incarnate panache. Some of these approaches bear their roots in the 1950s and the 1960s and continue to be dominant in the management circles to date (Wren, 1987) [13]. It is seen that modern age after the 1950's to present their highly evolved issues is that relationship between morale and productivity, there is on discerning is the correspondent accent on man and machine, meanwhile of this period of management theirs development has been gotten a phase to recognize the pivotally of refinement and perfection action of manager for several concerns as a result it is a big issues is how deals the owner and manager level for the consistency basis. This comparative study if the streaming matter quantitative, system and contingency form different points of view, the contingency theory show the blending form as the weaker points of the previous as continues basis not the particular prominence is prearranged in there.

VII. QUANTITATIVE APPROACH

This approach is also known own as mathematical approach, Operational research, management science, it is one type scientific investigation of taking decision that focuses the mathematical tools, statistical tools, Quantitative modeling, systematic mathematical techniques to solve the critical management problem ta the decision context. It is logical and reasoning investigation of process to assist the manager about the complex issues. Quantitative approaches building up on some common determinants of the organization in a system with its different parts in inter-actionable and interdependence relationship considering interactions and interdependence issues to express it by the way of modeling and mathematical equation. Generally, mathematics has been globally recognized tools of analysis and expression interaction concept and relationship. At the decision perspective it's a basis of a system of quantitative tools and techniques to optimize the manager to orderly decision making through modeling and process. Various tools of mathematics so top say linear programming, simulation model, and queuing theory are very commonly used at all the ranges of the management to take the decision effectively. It is the quantitative term of analysis that helps to analyze the problem not for the sound judgment as it is used for the analysis apparatuses that's why it is not deliberate and independent system of management believed. Although in the field of physical sciences and engineering mathematics is used highly for several reasons but it has never been considered as the special school. The quantitative theory helps to manager to think about clearly and develop that ability to think methodical at whole statuses. It is general logic and mathematical examine to make model that don't interface with any conjoint sanities.

The combination of different mathematical tools and techniques creates the special to judge about the critical management problem decision making solution. Various factors can be formed in a model or equation that driver the manager to caliber decision about the contemplation of mathematical relationship trough quantitative investigation at concern of qualitative matter. At the comprehensive manner the problem can be summarized of the quantitative form, although the tools of quantitative is not the exact solution but it just helps to manager to elucidate and taking decision in orderly about the critical problem at the glancing view like to say model or equation. Manager can be used it through the quantitative based, computer based visual or uttered to display the problematic as consequence the well-known problems areas proven the precise exploit. By this quantitative study of the management highly deals with the strategic issues, economies concern, engineering and the diverse sciences subjects. To rationalize and logical thanking a dive to manger to take decision articulate mode not auctioned the problem but of the before. To do the action of any manager by the quantitative action it is a general sense to follow firstly the fundamental problem categorizing with depth observing the probability, optimization and others substance then looking action is modeling at the previous observation of the mathematics after that application level helps to determine the practical implication at the quantitative form orderly. To treat the problems at the global interface this quantitative methods of observation focus at taking the distinctive decision troughs transparent and Clearly mathematical modeling to analyze the complex problem of the management illustrating as model. Many sciences application, mathematical tools, inventory modeling, queuing theory etc. as to get the decision as the effective and pure sense that proved that it is the art of mathematical modeling to give the solution for solving critical decisions problem of management as to get the optimization response of decision.

VIII. SYSTEM APPROACH

System approach was settled in late 1960s. Herbert A. Simon is the father of system theory. The system notion allows us to realize the serious variables and restrictions and their interfaces with one alternative. "A system is composed of related and dependent elements which when in interaction form a unity whole". (Cleland and King ;) A system is a collection part of amalgamated to get done an inclusive objective. It is the process of doing something on the way of interacting link different unit. If any unit is change the others parts of the units will be changed by the change of one unit of system so system works on that way. Generally having a system is integrated four forms as to say input, Transformation, output and feedback. Input comprises the resources, such as raw material, money, technology, people, primary requiring tools etc. the input implementing into the planned, organized, motivated and controlled way, as the ultimate goals of the organization. Output is the ultimate getting result by the processing or transforming of input. That may improve the quality or raise the productivity for the customer etc., feedback is like the processing information emanates from the bigger situation, culture, racial, government etc. at the overall system comprises the concept to any system with taking many subsystems. The system approaches describe like that way—"We may state as characteristic of modern science that this scheme of isolable units acting in one-way causality has proved to be insufficient. Hence the appearances, in all fields of science, of notions like wholeness, holistic, organismic, gestalt, etc., which all signify that in the last resort, we must think in terms of systems of elements in mutual interaction." (Bertalanffy 1968, p. 45) [14] It looks at the interaction between the social aspects of business and technology changes, different sub system to the subunits of a system flows to harmony and co-ordination in order to effective feedback of the larger system. It has been focused on the analysis of organization like a system with a number of interrelated sub-systems. The system approach efforts to focus the total work organization and the interrelationships of the edifice and the comportment or reaction of them at the dissimilar choices of the variables. To vitalize the manager this slant courtesies the whole system in a situation from the feat and interface angle. A unified set of elements functioning as the whole concept of the organization with long sighted a typical system that serene mainly input, renovation, outputs and feedback by that way of investigating manager can distinguish the particular issue and its interrelations fragments. The system theory interacts slight with its outside environment at booked apprehension as the padlocked system, on the others hand interact regularly with its milieu about the changes surroundings it works as the open system all the subsystem interlinked streaming system of achievement that resources every little parts of that environment is great deal by the eye of manager to take any trivial arrangements. Of the organization production, caring, upkeep, adaptive decision-making, personages and ceremonial or informal group are also working in a wave of sub system that creates dependent or interdependent, linked or interlinked relationship among them and this also known as the work of subsystem. Communication, decision, authority and accountability relationship, objectives, policies, action plans, process, procedure or the others aspects of mechanism of the organization highly facts of the subsystem because integration, adaptation for the growth with the appearing environment is one of the challenges task of the manager is giving focuses in the system approach. The system approach,

- It is residing interconnected and interdependent slices of many systems of the organization.
- Interrelations is more focus than sprinkle
- Whole environment solicitation of the society.
- Complex application of the old organization problems can be used for the new type business to get better reaction of the system tactic.
- Inclined by the tremendous system
- System is preoccupied with goal and subsystem have communal objectives

IX. CONTINGENCY APPROACH

Contingency theory mainly ripens on the major's premises of the system that aims at the integration theory with practice in a system framework. This chunk of management indicate that management is situational manager ought to meditate about the complete organizations of the surroundings. Organizational environment defines the manager what situation or what design there should give about the situational base. If there comprise organizational design, objectives setting, policy formulation should be taken on the basis of the organizational condition of prevailing situations. It is very much requires having the skills of the manager to consider the situation at all the organization to take any decision. To change the organizational, comprehend matter or accommodation change manager requires the skill on the basis of that contingency manner. Information and communication system effective leadership, effective policies, objectives practices are the factors to do effective use of this approach. Contingency approach provides a style of analysis to integrate the organization on the situation matter of the organization. The contingency theory refers to the variability of situations that require managers to embrace different management techniques for the varying circumstances (Mullins, 2004). [15]. It is now gaging that management problems are altered under different circumstances and necessitate to be attempted as per the circumstantial of the situation. At the integrating manner , contingency theory aims in a system of framework that are the behavior of the organization to the sense of pragmatic it is defined as situation or contingent, In the organization there make many relationship with various units, formally, informally, sub-units, vertically, horizontally that encompasses many events or situation it is considered each event is a type of situation that means the

illustration behavior of the contingent figure of the organizational environment. If manager wants to change any behavior of the organization that means it will be the actions of others situation whose are related with the organizational environment as a result manager follows the situation to influence the others not the direct action for changing behavior but focusing the situational base. Behavior of one sub-unit is reliant on its environment and relationship to other units or sub-units that have some control terminated the classifications looked-for that sub-unit Tosi and Hammer articulate that organization system is not a matter of managerial choice, but contingent upon its external environment.[16] In the system approach the interaction between the sub system recognized by the system but the contingency approach matched the interaction with overall situation of the organization, no matter how the interaction is occurred bit matter is that how the situation is appearing and how it solve or tackled by the manager as the general issues of organizational environment or behavior. It is keeping in mind that the internal or external variables that critically influence the performance that's why this approach takes any decision on the basis of pragmatic situation the consideration of the interaction that ultimately drives towards the overall situation. "The contingency view seeks to understand the inter-relationships within and among sub-systems as well as between the organization and its environment and to define patterns of relationships or configurations of variables contingency views are ultimately directed toward suggesting organization designs and managerial actions most appropriate for specific situations" said Kast and Rosenzweig.

The succinct of this issue can be –management is situation, manager ought to explain objectives, design the overall organization, prepare the strategically issues, adjust to the environment. Situational diagnosis helps to forecast the appearing environment at the changing situation of the organization, highly human relationship skills is need to cope with the overall situations, by the help of different numerical models, gathering information, better communication system, purification leadership style, consistency based objectives and policies, strategically program formulation, action plan about the environmental issues at the consideration of internal and external matter. This theory explains the organization does not follow a particular way of moving structure but follows best way to move with judicious judge of organizational environment at situational concern that can be influenced the management decision. Each event commits a set of problems out the challenges, of internal and external factors- micro or macro circumstances that shows the consideration of technological changes, demographic skills and changes, economic site, cultural variation, governmental issues, internal and external business mode change, societal issues etc.

X. ACUTE ANALYSIS

Figure 1. Figurative view of quantitative, system and contingency approaches of Monument

Quantitative Approach	System Approach	Contingency Approach
<ul style="list-style-type: none"> Quantifiable foundation for decision-making. Mathematical mockups and procedures. 'Operations Research' or 'Management Science' also called. Scientific techniques given that numerical base for managerial conclusions. Management as a system of logical or a reasoning practice. Articulated in rapports of calculated symbols and affiliations or models. Quantifiable systems or tools, such as linear programming, simulation and queuing are commonly use. Computable terms for scrutiny and decision making. Mathematically methodical model analysis of problems, but model is not ancillary for wide-ranging judgment. Quantitative techniques run tools for exploration but cannot be salted a self-determining system of management alleged. Orderly thinking midst managers. Provided managers abundance judgment mathematically of decision-making. Streamlined depiction of a system, method or correlation. 	<ul style="list-style-type: none"> Basically an amalgamation of part of sub-systems. Abundant sub-parts. A sub-system is stating to the system structural values, observes and principles. Parts and sub-parts of a system are reciprocally interconnected to apiece accompanying, bantam, extremely, some fewer, unswervingly, tortuously. Symbiotic structure. It takes an edge. Padlocked system and sweeping system edges perceived. System transfigures inputs into outputs for the endurance. Predisposed by tremendously super system. Sub-system requisite compel some communal resolves. System is a goal-oriented. A system entails of interrelating essentials. It is approachable to its surroundings. 	<ul style="list-style-type: none"> Management is absolutely situational. Managerial engagements which remain mostly conditional upon exterior and interior surroundings. Organization interrelates with its setting. It strams that there is no one superlative mode of undertaking possessions. Explain objectives, strategy organizations and concoct approaches, guidelines and campaigns according to predominant statuses. Managerial guidelines and performs to be effective, must fine-tune to fluctuations in environment. Appropriate humanoid relatives skill to put up and alleviate transformation. Contingency model in manipulative the organization, emerging its gen and communiqué system, ensuing proper governance styles and concocting apt objectives, policies, strategies, databases and applies.

Quantitative approach, system approach contingent approaches all are these major flowing parts of the modern management theories. Quantitative style deals with the quantitative investigation of managing decision or managerial decisions at the complex issues apprehension of the decision level sometimes works as the operational research, management science for the numerical investigation manner. It is the combination that are made on the basis of mathematical model, calculated symbols, reasoning and logical perception, methodological study and queuing etc., helps to manager to motivate orderly thinking with judicious judgment. System approach includes the whole organization works in a system- like super system and sub system, super's system influenced the others system for many reasons because one system is related with the others system interdependent and interrelated, if one of this is change then there may change that interact the whole system. This approach indicates formulation system, at integration way of system or logical system that means there of society as slice the social system why not the applicable of organizational environment. Looking into the organization sense system comprises input that means the materials concept-transformation technological and managerial process concept; output that shows the ultimate product or services and feedback is the reaction that comes from the environment of containing. This approach analyzes the effectiveness of the organization for the judgmental level of brink standpoint and at the sweeping and close system, bun system and super system, synergy etc. Contingency approach deals with managerial action is situation act the judicious thinking is required to perform of the organization there not particular or best way for all that can give the full solution, micro or macro environmental factor of the organization perspective. At the concluding matter of this approach internal and external factor highly is an issued. Actually, by recognizing of the system approach to interactions sense this theory deals the factor concern about the contingency basis. The contingency theory shows the skeptics result of the managerial action facts. As the internal factor of the organization worker, machines, environment of the organization, manager etc. and the external factor- environmental, technological, demographic changes, economic condition, cultural feelings or factors, rules and regulation changes, corporate governance practices etc.

XI. EVALUATION

Quantitative methodology treaties with the problem solving that is related with the applying mathematical tools and techniques that's why prerequisite to show many models of numerical observation by this is possible to take good judgment decisions but mathematics can be the best tool in management observation as the decision-making concern that not the conterminous with the overall management. System approach deals with inter- related events directed to get specific goals. The interaction concerns it is will be better consideration to judge the procedural issues or systematic issues but does not functionally; related it's to exact management concept and techniques. Contingent approaches give a method of analyze is as well as integrating the organizational situation with its environment form not the particular level but the overall concept of problem solving that incorporate into the continence framework, the adequately shows the nature of practical judgment of the Management. A best way depends on the situation judgment not the tools of judgment to put on to stretch the solution of the difficulties as the encode setting mode. At all Quantitative approach have just the decree of decisions assembly riggings numerically detecting that is one of the part of managerial action that indicate the interdependent part of the organization. It is possible to find the relationship at the interactions concerns about the planning, organizing, directing and controlling. It is close to common judgment of applies but not fully give the soluble theory. Contingent on focusing the events definition the action respectively as per the concerning engagements not the particular issues but the situation is particular; manager is to have the ability strategically to tackle and give better response all circumstances to recognize the actions performing and fundamental foci.

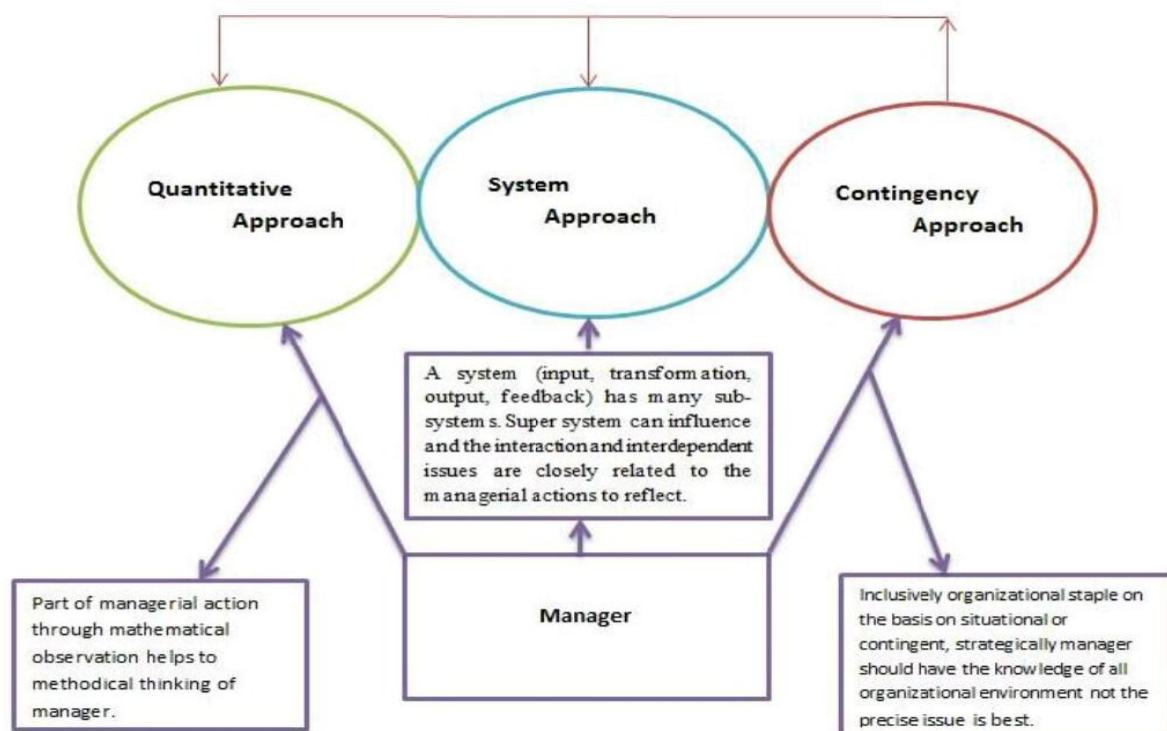
XII. FINDINGS

The contemporary theories of management basically related to the observation of several matters at the different perspective of management altering, this study is about the contemporary theory as concerning with the quantitative, system, and contingency approach, these are the wide ranging of the management after the 1950's since that quantitative system was mostly used for taking decision on the basis on the mathematical observation, setting model numerically, quantitative reasoning to take decision of manager. That was the abundance opportunity of the manager to use mathematical tools, techniques at all understanding the organization form the sense of quantitative logic. Mathematical model cannot give full result about the individual and attitude of someone but helpful to raise the managerial skills at overall capacities of the organization. System approach consists of inputs, transformation, output and feedback at the overall point. This approach comprises the interrelation among the different system, sub-units, subsystem, super system etc. super system can influence over the others system.

Organization actually is a form of blending many systems at social concern or others system approach favor to manager observing the organization at greater outlook with recognizing the particular part. Every aspect to this approach proceeds condition about the decisional and resolution matter of the reworking. Situation is the matter not the particular things of the organization. Micro or macro, internal or external forces issues to the observation these situations not the tools of specification. This approach always seeks to best one to implement on the basis on the situation on the particular issues of the organization but the situation at all. Also summarize some important finding issues of these approaches.

- Major contributors of the quantitative approach, system approach and contingency approach are; Johan MacDonald(quantitative), George R. Terry(quantitative), Andrew Szilagyi (quantitative), Daniel Katz(system), Robert L. Khan(system), Richard A. Johnson(system), G.M. Stalker(contingency), Joan Woodward(contingency), Tom Burns(contingency), Paul R. Lawrence(contingency), L.W. Lorsch (contingency) are well recognized.
- Quantitative approach deals with the observation of the modeling of numerical manifestation to take decisions and helps to manager to distinguish the overall organization.
- System approach comprises that organization is look like a system there exist, super system, sub-system and a system consist of inputs, transformation, output and feedback, manager abilities are applicable in open and close system and better realization of the interaction and interrelated activities of the unabridged system in system of framework.
- A contingency approach indicates the whole action of the organization is situational context, manager matching with that situation; there need to distinguish of the manager to the organizational situation not the particular one to develop. No specific tools or system superlative for the situation, contingent is the best substance to keep an eye on best solution of the situation that can term what procedure or act the way track. It is deliberate that this study of contemporary theories of management analysis from three altered corresponding but same of managerial and organizational issues consistency, quantitative shown that practical issues of mathematical judgment to proceeds decision system find the interrelated or interdependent issues to recognize the overall organizational situation, contingency theory of management find at the integration manner state of affairs the best think to cogitate from hardheaded style. It is seemed that contingency is not the universally accepted theory but indicating the best way to do action of situational consideration because situation is the ultimate question of management at all the time.

Figure2. Quantitative approach, System approach, and Contingency approach with the managerial interfaces.



XIII. CONCLUSION

The concept of the management has grown over the time from the different periods and evaluation after all it is upright at the modern theory of management on order to meet the needs of the organization operating as the consisting way of moving and the universal commitment and behavior now people are very eager to seek the satisfaction from the moral and productivity level. Quantitative, system and contingency approach as per that concerning investigates the conventional topics of three perspective find the statically identical and appearing concerns questions. "Most contemporary management perspective has emerged and evolved over the last hundred years or so. Beginning with the classical management perspective, first developed toward the end of the nineteenth century and on through contemporary applied perspectives, managers have an array of useful techniques, methods and approaches for solving problems and enhancing the effectiveness of their organization, of course, manager also need to recognize that not

every idea set forth is valid, and that even those that are useful are applicable in all settings. And new methods and approaches will continue to be developed in future.” (Griffin, 2008) [18]

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