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Insight into Management Issues modeling for Perfect Business Simulation

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Abstract

In this paper, I try to focus on widely growing field of Management Science; and that, "Modeling of Management Issues ". Now days Business Simulation techniques are used to earn more profit from Business and this is only issues control future course of actions properly. By using models we can predict & control future course of action & situation. Modeling is not a new subject. It's oldest technique, but widely used in Physical Sciences, like Chemistry, Physics, Electronics, Engineering field, But it's again become vital after some time in Life Sciences, like Botany, Zoology, Bio-Chemistry, Bio-Tech and Medical field problem modeling and now in current world it's also become very vital in Information Technology and Management subjects. Here one question is always arise, why such a modeling is needed, and where and when needed, and answer of this simple question is, considering some simple problems like ` to find out the width of a river (But your are not allowed to cross it), find out the temperature (but you are not allowed to use thermometer), means try to find out any Quantity or parameter/variable without existence or entity of that, and if virtual situation satisfied by using modeling technique, we implement that virtual model for actual situation. In last I want to conclude modeling is the heart of any branch of Education, weather its science, Arts, Commerce, Medical, Information Technology, Engineering or Management and in summaries form I want to say this paper is nothing but one of the theoretical model, which is for modeling of Management issues for perfect Business Simulation.

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Introduction

Now a days Management playing very vital role in all streams of Business which provides new sense to all personnel to tackle/handle the complex Business very smartly in given time duration with greater accuracy & more profit to industries and service providers. Management is a group of high professional personnel which makes an organization for Business, where all multicultural, multi-discipliner personnel work together for common objective and all things done by proper, organizing, planning, coordinating, directing and controlling, where planning, directing and controlling is most important parameters and helps to expand Business, maximize profit by Business/Services successively. " Planning & control on future " for efficient future of Business Modeling of such a Management issues now a days becomes very important. Here I want t focus on this latest helping theory, how modeling/ mathematical modeling enhance the business with maximum profit. By using models we can able to face future situations in Business, by substituting proactive plan models according to need [1]. That's why according to me with the recent trend of modern management & scientific management, need of management issues modeling has paramount importance in the management sciences. To know the organization behavior, buyer behavior, and market research, strategic plans, operational research, etc. How these are operates and how can we implement 'Designed & decisional "plan in Business to see its effect/result without implementation, this can only possible by modeling of such a plans for respective Business purpose. To construct a good proactive plan model for future course of action conscious operation research (OR) is needed, and what's we collect from competitive Business environment by survey, Questionnaire method, sampling method, personal interview, telephone interview, discussion, observation, public opinion, suggestions, & behaviors in theoretical form i.e. our data may be primary or secondary data and by using this data we can come to make some mathematical/logical relations and equations after collection of data. It is filtered and abstract from research theories and by help of this abstracted mathematical or theoretical data, we can able to construct models according to it which can helpful for us to implement any decisions, controls, and proactive plans for future work to see its results and effects without implementation of it, to observe which kinds of effects and results comes out from changing data into information and after observation one can change models if needed and make it most efficient and flexible for future modification in planning and managing which done without any loss of manpower, money, machine and natural resources [2,3]. Now after total data research analysis you should have select suitable and appropriate model according to analyzed data, such as if research data numerical your must need to be select any good standard mathematical equation(s) to relate and fitting your data in equation(s) to easy and convenience understanding and presentation for others and top level management personnel in organization to make a group decision by observing suggested model. This models are graphical representation, statically representation, charts, flowcharts, block diagram, signal flow graphs, mathematical equations, abstract, formulas, postulates, linear programs, probability theory, integrations, derivatives, differential equations, finite difference/finite element methods, matrix, algorithms are examples of such data modeling to need which can be obtain in twelve steps as given below:

1) Complete the research work
2) Come to concrete results and decisions
3) Find out weather mathematical treatment or theoretical treatment, which are best sited to develop model from your data
4) If mathematical treatment is suitable use various and parameters to label your numerical data, else theoretical filter it in summarize form
5) If data numerical fid out any one standard and appropriate mathematical method which gives satisfactory and desired results
6) Fits all variables and parameters in selected mathematical equations or make your own equations i.e. your mathematical model
7) Solve your model equations
8) Make computer program if model is mathematical otherwise for theoretical try to represent in the form of chart, graphs, logic diagram, block diagram, signal flow graphs etc.

9) Simulate models by help of computer in case of mathematical
10) Make decisions according to obtained simulation results of respective model. Compare it with actual situation.
11) If after comparing it is acceptable, implement it for actual situation and stop otherwise reject the model
12) Again try to find another good equation and repeat steps 1 to 11.

Above all about mainly for mathematical modeling, but if your data is theoretical, you can represent it very easily in the form of block diagrams, PERT-network signal flow graphs, flow charts, tables, logical, alphabets and figures models. But in this kinds of models you must be sensitive and alert about direction and link between blocks which are indicated by arrows, these should be correct to show any topics, plan, procedure, process system, decision, issue or mechanism, such as flow left – to – right, or right-to-left, up-to-down, down-to-up, and link is unidirectional or bi-directional etc.

Model

Model is the prototype of actual situation without existence of actual situation, to observe, judge, and conclude the actual situation, to make and make more efficient by changing in model if needed. Now again we define model as an idealized representation of real life situation. It represent one or few aspects of reality, such as a map, multiple activity chart, an autobiography, PERT-network, balance sheet, final account specimens, EOQ equation etc. are all models, because each one of them represent few aspects of real time situation. Here we got clear idea and the objective of models, which provides a means for analyzing the behavior of the plan/system/process for the purpose of improving its performance [4].

Table 1 provide easy understanding for classification of models. As we already aware, 'Model is virtual representation of actual situations, process, plans, objects and systems', and it's again can be categories into several classes as follows:

According to Degree of Abstraction

These models classified in general according to degree of abstract or summary and can be sub-divide as:

Mathematical Models

All research data change into variables and parameters that are frame in a standard equation(s) solve using the suitable mathematical methods for desired result.

Table 1. Types of Models

Models					
By degree of abstraction	**By function**	**By Structure**	**By Nature of Environment**	**By Generality**	**By Time Horizon**
Mathematical Models	Descriptive Models	Iconic/Physical Models	Deterministic Models	General Models	Static Models
Language Models	Predictive Models	Analogue/ Schematic Models	Probabilistic Models	Specific Models	Dynamic Models
-	Normative Models	Symbolic/ Mathematical Models	-	-	-

Language Models

If research data is theoretical or also some time if models instantaneously suggest the shape, size and characteristic of actual situation/system comes under this, For example, model of earth, model of India, building models etc.

According to Function

Some models also classified with respect to their functions as

Descriptive Models

Descriptive models deals with the various operation in non-mathematical form and try to define the functional relationships and interaction between various operations. E.g. Organizational chart, pie diagram, layout plan, engineering drawing, sketches etc.

Predictive Models

It explores and predicts the behavior of the system. e.g. forecast model for exponential smoothing , instance predict the future demand [5].

According to Structure

These models are again sub-divided as:

Iconic/Physical Models

In iconic/physical models, properties of the real system are presented, but all happens represented with a change of scale. Thus iconic models reassemble the system. Here system represent with differ in actual size. e.g. Globe are used to represent the orientation and shape of various continents oceans and other geographical features of the earth. A model of solar system to represents position, shape, size, and color of sun, moon, earth and other planets. Here both are large and we unable to see them, that is why models are "scale-down". Similarly a model used to represent molecular structure, size, color, bond, charges, atoms, molecule all are microscopic and unable to see with naked eyes, that's why here models are "scale-up" to make them visible.

Analogue/Schematic Models

These models represent dynamic situations; they are always analogues to the characteristic of the system under study. They use one set of parameters (properties) to represent other set of parameters (properties) of the system under consideration for execution and after solving models, the solution is re-interpreted in terms of the original system. For e.g. graph models are analogous, because two different fields/parameters/variables are subjected on two different axis like, time, speed, intensity, humidity, pressure, temperature, current, voltage, acceleration, flow, sound etc. and as one parameter change it affect on another parameter and variation represent by graph as relation, directly proportional, inversely proportional, increase, decrease, linear, non-linear, parabolic, curve etc. are example of analogous relations between two, as per point of view management, parameters may be buyers behavior, product, man-machine chart, organization chart, supply-demand relations, graphs etc.

Symbolic/Mathematical Models

These kinds of models developed after complete research. All collected data by research methodology convert in the form of numbers, letters, alpha-numbers, special characters etc. and all these are frame into one or more than equation(s) and solve all these equation(s) by using suitable mathematical technique and discussed and predict the results which is obtain from modeled equations whether it is acceptable or not.

According to Nature of Environment

These kinds of models widely used now days in modern scientific management and they are:

Deterministic Models

These models always deal with "Closed Loop System". Here, output variables always certain or known before applying input variable. Hence whenever input is apply, we always sure about which kinds of output will appear at the output. One good example of this system is when we mixed two primary colors, we always sure about which kind of secondary color we obtain, e.g. suppose if we mixed yellow with blue as a input, we always sure about at output we will get green secondary color.

Probabilistic Models

In these models always uncertainty exists and basically they are "semi-closed loop or open loop system". In case of these models whenever input apply, we can't sure about which kinds of output will appear and we unable to determine it, only able to 'guess'. E.g. when one coin is jump in air as an input, which kind of

output will appear is can't determine, until coin fall down. It may be 'Head' or 'Tail'.

According to The Extent of Generality

These are some oldest and widest used models, which are very helpful at current modern management and business as highlighted below.

General Models

These models flexible in nature and can be used to indicate several different situation, individually as needed. E.g. linear programming model is treated as general model since can be used for all the function of organization like, product-mix, production scheduling, marketing mix etc.

Specific Models

These models are used only to represent single function like, sales response curve/equation as a function of advertising.

According to the Time Horizon

In some models 'time' also play very important role and according to this factor these two models are universally suggested.

Static Models

These are "one time decision models". In these models 'cause and effect', both are arises almost simultaneously and time difference between the two is zero. These are easier to formulate, manipulate and solve [6].

Dynamic Models

In these types of models, time often plays an important role. These are used for optimization of "multistage decisions" problems, which requires a series of decisions with the outcome of each depending upon the results of the previous decision in the series. These kinds of models has 'cause and effect' with sufficient time difference for one output as a input to another in series. E.g. used in logistic & supply chain management, strategic & tactics management etc.

Model for Modeling of Management Issues

Now after complete discussion of various types of models, I am going to switch toward, "How can we able to develop such a models", enlisted above and "How modeling of management issues are possible with and without mathematical treatment".

The below model can help for good modeling of management and business. To develop models first consideration is for which purpose, modeling going on, try to understand problem first. Obstruction arise in management or some time to check proactive plans etc. collect all related and necessary data for respective topic by research methodology, as research work completed, introduce symbols, numbers, equations, relations and physical laws, if model is mathematical otherwise if model is theoretical, develop abstract and exact theory refine again and again with using some physical and logical relations. (Figure 1)

After completion of this task, whatever you get in mathematical of theoretical form construct respective models with the help of this. If model is mathematical, solve all equation(s) and predict it, if it is theoretical make logical and physical relations using physical relations using physical and logical laws. For this purpose strong logical thinking, decision mankind and intuitions are needed, also share research work with all personnel in organization or in team with share & exchange ideas & talent according to talent management or talent acquisition methods. In mathematical models after getting mathematical solution (s) or logical decisions from theoretical models, compare them with actual case, observe tem, interpret the solutions and logical decisions which is obtain from virtual, with actual situations/problems, if agreement or results from models satisfactory accept that model(s), if agreement or results not satisfactory, modify hypothesis, theory, mathematical equation(s), logical & physical laws and repeat whole cycle of this model from its initialization.

Characteristics of Models

To develop good and efficient models with high degree of accuracy, the number of simplifying assumptions or elements should be as few as possible to avoid complexity. The number of relevant variables, characters & parameters also should be as few as possible, which gives simple models. Models should be adjustable and H parametric type of treatment also easy and economical to construct.

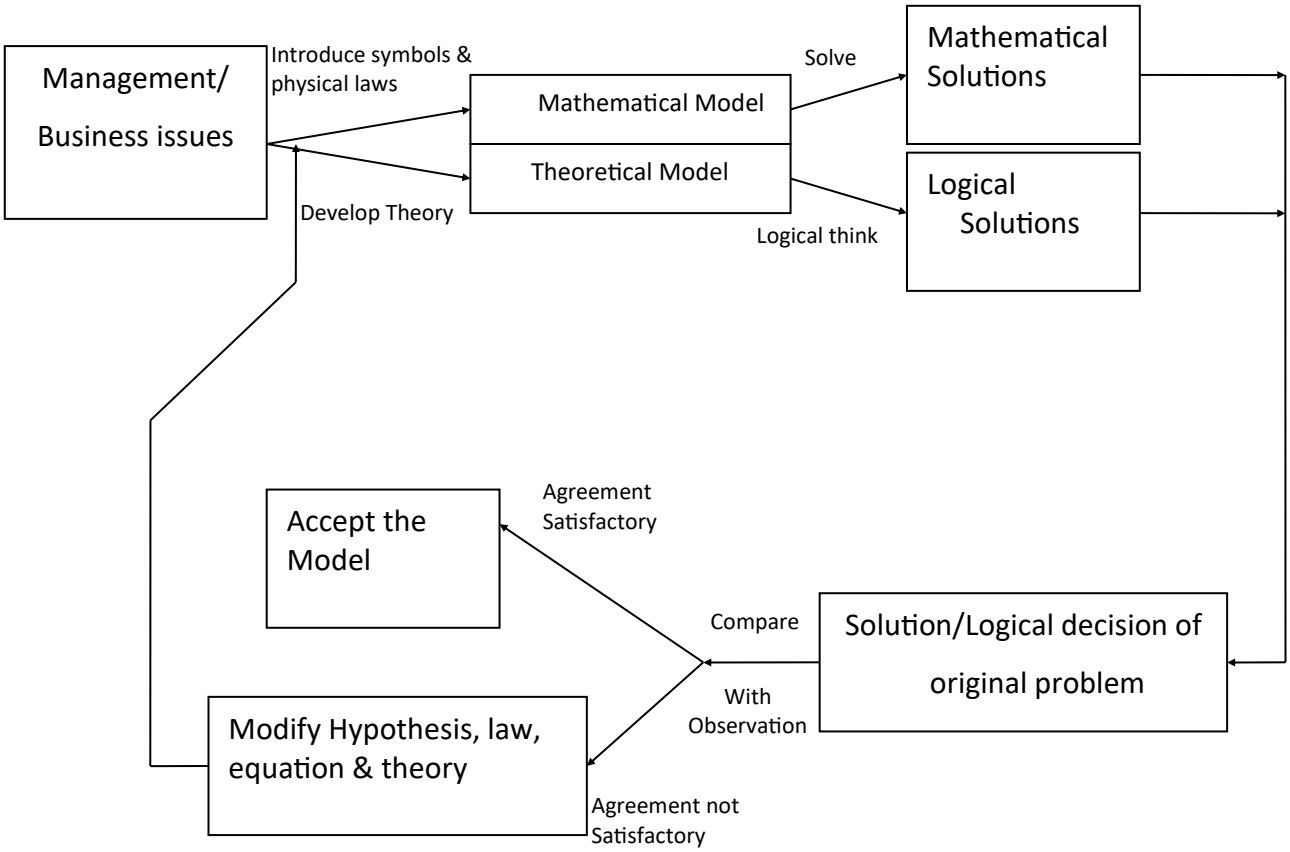

Figure 1. Model for Modeling of Management Issues

Advantage

By using modeling technique, logical and systematic approach to the problems is possible; also indicate the scope as well as limitation of a problem and its in new research work area and also improve the existing system easily.

Limitations

We should always taken into account models are idealized representation of reality and not be regarded or consider as absolute for particular situation can be ascertained only be conducting experiment on it.

Conclusion

We would like to conclude modeling is very important aspects in all research disciplines and equally has great importance in business management also to formulate plans, strategies and actions. We have discussed all kinds of models in detail and suggested to use which best fit to your need and also explained theoretical and mathematical models and to implement them in management practices with model.

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