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Anticipating the Future in Industrial Markets

Dr. Dolly Jain[1]* Dr. Abhishek Saraf[2]

[1] Associate Professor, SVN University, Sagar, (MP)

[2] Associate Professor, Department of Business Management, SVN University, Sagar (MP)

Abstract – Future is uncertain. By making efforts to visualize future we try to offset this uncertainty in order to make appropriate plans. These plans are traps laid to capture the future. The right kind of plants ensures the enterprise against failures and setbacks. They form the basics of control and help in co-ordination, motivation and decision making. Therefore future visualization of the relevant internal & external environment is necessary if a firm desires to excel.

Surprisingly, most Indian firm does not spend much time contemplating the future. They have become complacent because of their low growth needs, strength or success in the past. But this kind of behavior will definitely not help them in the future as markets are becoming more and more competitive and consumer is getting better informed. Firms which are not serious about future visualizations should change themselves and spend time contemplating the future. Successful global players earn more than 30 percent of their revenues from products that are less than 10 years old. The secret of their success lies in visualization of future needs. They have learnt the two basic rules and are implementing them.

Rule No.1: You can't drive using only the rear view mirror.

Rule No. 2: The faster you move, the further you need to see.

Keywords – Historical Analogy, Substitution Techniques, Morphological Analysis, Delphi Technique, Scenario Development, Econometric Models.

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INTRODUCTION

The 20th century has ended and 20th century has begun. With the rapid growth in information technology the disintegration of post –war political systems, and a constant flow of new products, services and process on might wonder what the 20th century is likely to bring.

Will there be political stability? Will there be the required kind of infrastructure for industrial development? Will there be a place for us in the international markets? Will the national resources be preserved? Will corruption and terrorism come at the end? Will pollution and energy shortage be checked? Will there be an alternative be petrol? How will business operations be affected by the labor and consumer laws? What will be the impact of privatization and automation on the business and employment? There is many other questions crop up in the mind when one tries to visualize the future. Before we precede further, the issue, that why business should try to visualize future needs to be addressed.

HOW TO VISUALIZE FUTURE:

The star performers use different forecasting techniques for visualizing the external and internal relevant environment. Debate exists over the accuracy of quantitative versus qualitative approaches to forecasting, with most research supporting quantitative. However, the difference in predication made using each type of approach is often minimal additionally; subjective or judgmental approaches may often be the only practical method of forecasting political, legal, social and technological trend in the remote external environment. The same is the true of several, factors in the task environment, especially customer and competitive considerations.

Ultimately, the choice of technique depends not on environmental factors under review but on such considerations as the nature of the forecast decision the amount and accuracy of available information, the accuracy required, the time importance of the forecast, the cost, the competence and interpersonal relationships of the managers and forecasts involved. Frequently, assessment of these factors leads to the selection of a combination of quantitative and

qualitative techniques, thereby strengthening the accuracy of the ultimate forecast.

HISTORICAL ANALOGY:

This method is used when sufficient and reliable data is not available for comprehending the future. In such a situation, data related to a similar situation is used for projecting the future. Supposing a product is to be marketed in Thailand, and since it's new to the Thai market the data about the market's reaction is not available. In such a situation one of the methods which can be used to judge potential is to see how the product fared in another market similar to Thailand, for example Malaysia.

SUBSTITUTION TECHNIQUES:

To assess the prospects for a new technology researcher of General Electric developed this method. It

Is based on the assumptions that advanced technologies in satisfying a need, and that the rate of substitution is proportional to the remaining amount of old technology. This technique has been used extensively in developed countries to predict substitution of natural materials by artificial materials (f.bres, rubber), old processes (steel making),or old products (zinc oxide by titanium oxide, soaps by detergents).Some example in the Indian context me: the replacement of glass and in plate by plastics in packing :the choice of either aluminum or copper in the electrical industry: the use of bio-organic fertilizers' as opposed to chemical fertilizers.

MORPHOLOGICAL ANALYSIS

Morphen is the Greek word for "form" and this method of analysis is actually derived from techniques used plato and Aristotle. In this technique a problem is broke down into parts which can be treated independently. Various solution for approaches to each part are then indentified and overall solution are arrived ar by combining the individual solution. This method has been used extensively bu the defense for planning and can be gainfully utilized for different planning issue like manufacturing, distribution, purchase of equipment and transportation.

The following table illustrates the approach through an example of transporting limestone from a quarry to a cement factory. The feasible options to solve the problem have been underlined.

PARPAMETERS	OPTIONS AVAILABLE
Type of Transport	Road, Rail, Ropeway
Type of Road Transport	Dumpers, Trucks, tractors
Number	10-15.16-20,21-25
Ownership	Co's own, others
No. of transporters	Only one, Many
Duration of contract	1 year,2-3 years,4-5 years

DELPHI TECHNIQUE:

Working for Rand Corporation, Olaf Helmer developed this techni2ue 30 years ago, naming it after the Greek Oracle at Delphi. His original for cussed on six areas; Population, automation, space, defence, weapon system and scientific developments. The Delphi looks at the future through the intuitive insight of experts, assuming that many of the complex variables affecting the future are difficult to assess with use of conventional forecasting models.

The Delphi method involves a systematic procedure for obtaining consensus from a group of experts. The exercise is carried out over several rounds through individual contact, thereby avoiding the problem of group meetings. The procedure includes:

1. A detailed survey of expert opinion, usually obtained through a mail questionnaire.

2. Anonymous evaluations of the responses by the experts involved.

3. One or more revisions of answers until convergence is achieved.

Studies show the Delphi today is the most commonly used by large multinational organizations.

SCENARIO DEVELOPMENT:

This is probably the most popular of all techniques. Scenarios are imagined stories that integrate objective and subjective parts of other forcasts. They are designed to help managers anticipate changes. Because scenario can be presented in an easily understood from, they have gained popularity in forecasting. Scenario the developed by adopting the following process:

1. Initially the background is prepared by assessing the overall environment under investigation.

2. Critical indicators are selected and such future events are searched that many affect the key trends.

3. Analysis of reasons for past behavior for each trend is done.

4. Forecasting of each indicator in at least three scenario is done, showing the lest favorable environment, the likely environment, and the most favorable environment.

5. Writing of scenario from the viewpoint of someone in the future and description of conditions then and how they developed.

6. Condensing the scenario for each trend to a few paragraphs.

Econometric Models:

With the advent of computers, some wealthy companies private consulting firms to develop "causal models", especially those involving econometrics. These models utilize complex simultaneously regression equations to relate economic occurrences to areas of corporate activity. They are especially useful when information is available on causal relationship and when large changes are anticipated. During the relatively stable decade of 1960s and into the 1970s econometrics became one of the fastest growing industries in the developed countries.

However, since early 1979 with the explosion of oil prices, inflation, and the growing interdependence of the world economy have created problems beyond the inherent limits of econometric models. And despite enormous technological resources, these models still depend on the judgment of the model builders. Recently the judgment has not been dependable.

Two more widely used and less expensive approaches to forecasting are time series models and judgmental models. Time series models attempt to identify patterns based on combinations of historical trends, seasonal, and cyclic factors. This technique assumes that the past is a prologue to the future. Time series techniques, such as exponential smoothing and liner projections, are relatively simple, well known, inexpensive and accurate. Of the time series models, trends analysis is the most frequently used. This model assumes that the future will be a continuation of the past, following some long range trend. The major limitation of trend analysis is the assumption that all relevant conditions will remain relatively constant in the future. Sudden changes in the conditions upset the trend prediction.

Judgmental models are useful when historical date not available or when they are difficult to use. Examples of judgmental or qualitative approaches are sales force estimates and juries of executive opinion. Sales force estimates consolidate sales people's opinions of customer intentions and opinions regarding specific products. Juries of executive opinion combine estimates made by executives from marketing, production. Finance and purchasing and then average their view.

THE FUNCTIONAL IMPACT

To operate successfully, business firms today need to synchronies their effects closely with likely trends in the future. The impact can be seen in many areas of operation. Below are some illustrative issues.

Finance:

Which technologies or products should you pursue? How do you prevent wastage of funds in unsuccessful ventures? How do you finance acquisition of new technologies? Buying, developing in –house or by hiring experts?

Marketing:

How do you assess new markets and new products? How do you successfully launch new products in emerging markets ahead of competition?

Research & Development:

What objective should you set? How do you control funding and monitor result? Integrate R&D with production and marketing? How do you lower new product development time and costs?

Production:

How do you increase automation to lower costs and defects? What modifications are needed in inbound and outbound operations? (Raw materials procurement, inventory system, transport, packaging etc.)

Human resource development:

What are the modifications required in the organization structure to make it responsive? What are the training and development inputs necessary at different levels?

AVODING ERROR:

Constant innovation with regard to products and processes is a hallmark of leading organization. Looking at tomorrow is an obsession with them. In this context it is worthwhile remembering a few rules:

- **Identify the factors that deserve forecasting**: Although literally hundreds of different factors might affect a firm, often a few factor of immediate concern (such as sale forecasts and competitive trends) are most important.
- **Use more than one technique**: Cross-check the result using different methods, rather than basing conclusions on only one technique.
- **Do not ignore development in other countries ort complementary technologies:** The planning for a mass transit system in New Delhi may be most affected by the development of energy-efficient two wheeler, Segway in the U.S.A.

- **Use reliable background data:** This is especially relevant in the India context, as most published date is highly unreliable.

- **Avoid overoptimistic or pessimism:** In making judgments. Use alternative viewpoints and then make a choice. IBM turned down chester carlsion's idea of photocopying machines, thereby losing out a billion dollar opportunity. Conversely, many organizations have found themselves in a soup after having put in substantial funds in chasing impractical targets.

The business environment to tomorrow will throw up many opportunities and threats sometimes through dramatic changes as illustrated in Drucker's Age of Discontinuity pr Toffler's Future shock. Winging companies therefore, need to closely study the changing environment, visualize what lies ahead and adapt their business to emerging opportunities.

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Corresponding Author

Dr. Dolly Jain*

Associate Professor, SVN University, Sagar, (MP)