

# Technology Forecasting - An Important Tool for Marketing in R&D

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**Abstract :** Technology Forecasting is an important aspect of every R&D Organisation .It is Technology Forecasting that can improve the quality of technical decision-making. One of the major challenges in the management of innovation is a practical and useful implementation of Technology Forecasting. The pace of technological progress is a practical construct that has evolved from technological change theories. This article discusses the role of Technology Forecasting in R&D Organisations.

**Keyword :** *Technology forecasting, R&D Marketing, Decision making, Technology marketing.*

## INTRODUCTION

Why are forecasts needed? The reason is simple. We live in a rapidly changing world, changes which affect both the technologies we use and the purposes they serve. When a technical decision is taken today, it is essential to ensure that it will lead to a result which is appropriate to the circumstances , sometime in the future, when it results reach the light of day. Since lead times are involved, which in many industries are growing longer, it is necessary to take a view of the future.

The future is not a distant point in time. It is a steady evolution punctuated by occasional discontinuities. Hence, the situation in five years time will be different from that in ten years. It is not sufficient to take a view of what will happen some time in the

future; it must be associated with the time when it will occur. What is needed is the identification of the path into the future. The aim of forecasting must be to relate a future performance level with the date when it is likely to happen. It introduces the time dimension into technical decision making.

Technologists take a view of the future whenever they take a decision, consciously or unconsciously. Sometimes the intuitive process leads to good decisions, sometimes not. The quality of the decision is attributed to the judgement of the person taking it. Judgement forms an important input to any forecasting activity, but it is not sufficient in itself. Forecasting forces the user to examine explicitly all the changes impinging on the decision methodically. It ensures that data are collected systematically.

Forecasting is not a panacea. There are too many unknowns surrounding the future for us to ever hope to forecast it with certainty. The forecasts will inevitably contain errors, but this cannot be avoided. The decisions must be taken in the present using the best information available at the time, but it behoves us to use the information in the most effective way. That is objective of forecasting, for although it cannot eliminate uncertainty, it can assist in reducing it, thereby a better view of the future and its evolution are obtained, leading to better decisions.

## THE ROLE OF TECHNOLOGY

Technology can be defined as the application of scientific knowledge for the satisfaction of human needs. The role of the individual technologist is to ensure that his expertise makes its maximum contribution to the organisation that employs him, but that organisation itself only prospers by satisfying the market that it serves. Thus, any consideration of the corporate role of technology must focus on the needs of both the organisation and the market.

Neither the organisation nor the customer is primarily concerned with the technology. The elegance of a technological solution is of little concern to them. They are interested in the benefits they obtain and the cost of acquiring them. The technology is a means, not an end in itself. Many technologists fail to understand this

fully. It is, however, of fundamental importance in any consideration of the future, for if it is not possible to identify why a particular technological outcome is desirable, then it is unlikely to eventuate. However feasible an envisaged technological advance may appear, there is little likelihood of it occurring in the absence of a need for it. Thus, technology is market driven and any forecasting activity must be focussed on the market. Forecasting by technologists cannot be divorced from a consideration of market, social, economical, political as well as technological factors.

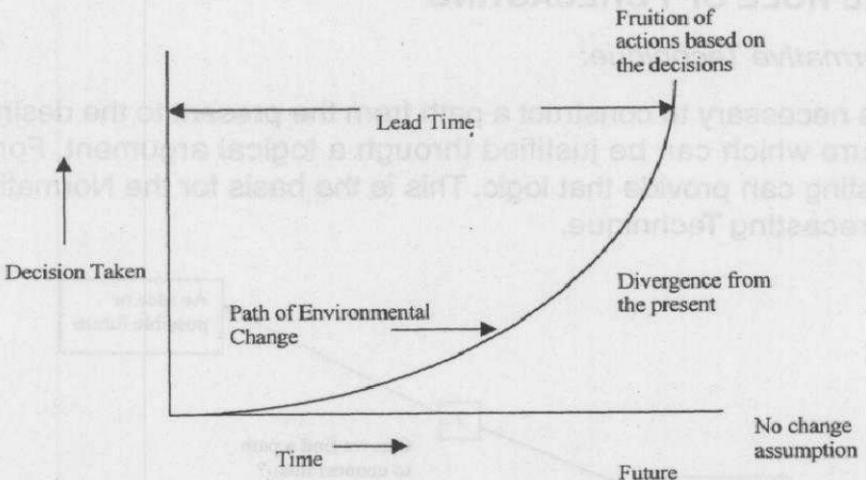
## THE TECHNOLOGIST'S NEED TO FORECAST

Within our society technologists make a vital contribution to corporate success. The role of technology is to add new dimensions to human capability by enabling us to accomplish tasks or satisfy needs which were not possible in the past. Thus, we live in a continuum of progress starting in the past and stretching through the present into the future.

### *Decisions and the Future :*

The two determinants of the magnitude of change :

1. The decision lead time
2. The rate of environmental change



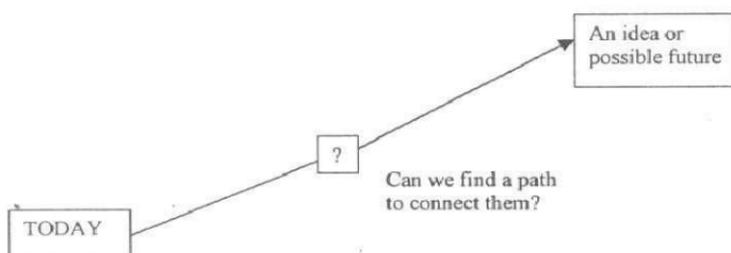
*Corporate Decisions and the Technologists Need to Forecast :*

Forecast	Forecasting Focus	Decisions
Strategic (Long Term)  - social	Qualitative Environmental Change - technological - economic - political which technologies? →	Business Strategy ↓ Technological Strategy ↓
Innovative (Medium Term)	Qualitative & Quantitative Innovation	Technological
	-Technology (specifications) -Demand (Aggregate) -Cost Estimates →	- which products? for - which markets? at - what cost ? ↓
Operational (Short Term)  -demand	Quantitative (accurate)  (specific) →	Production Planning & Scheduling - how many of each model? - what materials to order? - what to manufacture?

**THE ROLE OF FORECASTING**

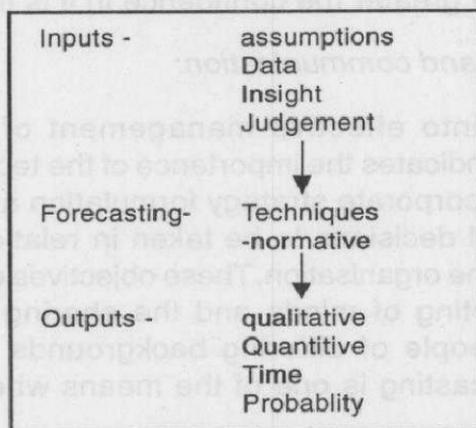
*Normative Technique:*

It is necessary to construct a path from the present to the desired future which can be justified through a logical argument. Forecasting can provide that logic. This is the basis for the Normative Forecasting Technique.



### Exploratory Technique

A forecasting technique relying on the extrapolation of past trends into the future is termed as the Exploratory Technique. Extrapolation is mostly a mechanistic process and does not in itself generate ideas. They come from human insight stimulated by the act of forecasting.



### BENEFITS FROM FORECASTING

Even though forecasting is surrounded by a number of uncertainties a number of important but less tangible benefits can be derived from it. These may be valuable as formal forecasting outputs.

i) *Developing a future orientation:*

Forecasting gives an orientation to any organisation so as to achieve better targets in the future.

ii) *Discovery and insights:*

The process of forecasting often leads to some discoveries and an insight into the future which could have remained ignored if this method would not have been implemented.

iii) *The forecast as an agenda for corporate discussion:*

The forecast provides a basis for a wide ranging examination of the total environment in which a company operates. It becomes an agenda for informed discussion.

iv) *Gaining confidence - forecasting as a continuing activity :*

Forecasting should not be regarded as a one-off exercise conducted only to assist in making a decision at a given point in time although this may often be the immediate stimulus in practice. It should be regarded as an unfolding picture rather than a snapshot. The longer one lives with a forecast the greater the confidence in it is likely to be.

v) *Integration and communication:*

Research into effective management of technological innovation indicates the importance of the technological contribution to corporate strategy formulation and the need for all technical decisions to be taken in relation to the wider interests of the organisation. These objectives can be achieved by the meeting of minds and the sharing of information between people of differing backgrounds and functional roles. Forecasting is one of the means where this can be achieved.

vi) *Development of judgement:*

The involvement in forecasting can be regarded as partly educational. The study of patterns and

Their use in forecasting etches them in the subconscious memory, whether or not they are being applied formally. This helps to develop an understanding of the dynamics of technological development and an enhanced appreciation of all the non-technical factors influencing it.

## CONCLUSIONS

Forecasting identifies the rate and direction of change as well as the implications of that change. It can be easily said that forecasting is an important tool for marketing as it helps in technical decision making and reduction of uncertainty whilst accepting that it can never be eliminated totally. As a result, the business risk, the possibility of financial loss through taking a poor decision, is considerably reduced.

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