PM Notebook

Summarizing Project Management Concepts for the PMP Exam

No great man ever complains of want of opportunity.
Ralph Waldo Emerson

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APPENDIX F – FORECASTING METHODS

Forecasting – predicting future project performance based the current performance to date.

Causal/Econometric Methods

This method assumes that it is possible to identify the underlying factors that might influence what is being forecasted. For example, sales of ice cream might be associated with weather conditions.

Autoregressive Moving Average (ARMA) – A statistical analysis model that uses time series data to predict future trends.

Econometrics – one of the tools economists use to forecast future developments in the economy. In the simplest terms, econometricians measure past relationships among such variables as consumer spending, household income, tax rates, interest rates, employment, and the like, and then try to forecast how changes in some variables will affect the future course of others.

Regression Analysis – A set of statistical processes for estimating the relationships among variables like cost, labor, and other project metrics.
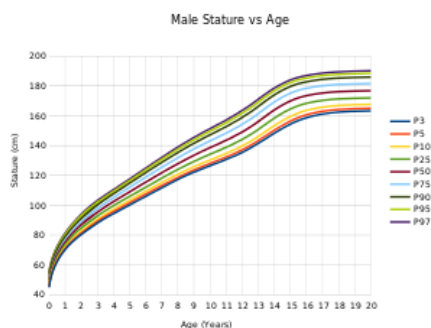
- **Linear**
- **Non-linear**

Time Series Methods

This method uses historical data to estimate future outcomes.

Earned Value Management (EVM) – To quantify variances.

Extrapolation – the action of estimating or concluding something by assuming that existing trends will continue or a current method will remain applicable.

Growth curve – A growth curve is an empirical model of the evolution of a quantity over time.

Linear prediction – is a mathematical operation where future values of a discrete-time signal are estimated as a linear function of previous samples.

Moving Average (MA) – a mathematical result that is calculated by averaging a number of past data points.

Trend Estimation – a statistical technique to aid interpretation of data.

Judgmental Methods

Incorporate intuitive judgment, opinions and subjective probability estimates, and is used in cases where there is **lack of historical data** or during **completely new and unique market conditions.**

Composite forecasts – This function combines forecasts from alternative forecasting methods (such as times series, casual, and/or judgmental) for a particular brand, product family or product. Each forecast is based on the same historical data but uses a different technique.

Delphi method – a forecasting method based on the results of questionnaires sent to a panel of experts. Several rounds of questionnaires are sent out, and the anonymous responses are aggregated and shared with the group after each round. The experts are allowed to adjust their answers in subsequent rounds.

Forecast by analogy – a forecasting method that assumes that two different kinds of phenomena share the same model of behavior.

Scenario building – a policy analysis tool that helps describe a possible set of future conditions

Surveys

Technology forecasting – attempts to predict the future characteristics of useful technological machines, procedures or techniques.

Other methods

Ensemble forecasting – a method used in numerical weather prediction. Instead of making a single forecast of the most likely weather, a set (or ensemble) of forecasts is produced. This set of forecasts aims to give an indication of the range of possible future states of the atmosphere.
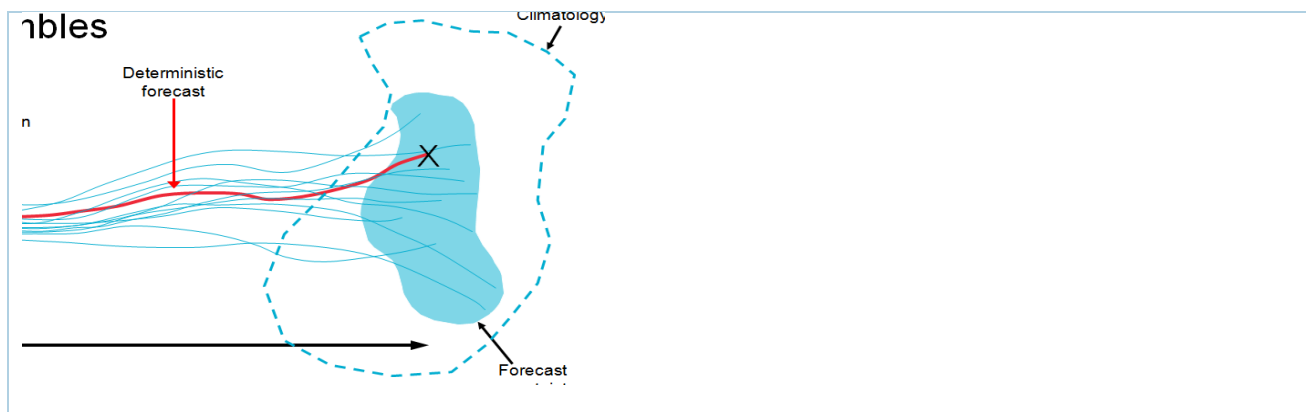
Probabilistic forecasting – represents an estimation of the respective probabilities for all the possible future outcomes of a random variable.

Simulation