

# Failure rate forecasting as tool for quality improvement and cost reduction

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Always present challenge of quality improvement and in consequence quality costs reduction can be approached in many ways. In companies with consumer products, legislation defines a demand to support all consumers within warranty period. Measuring and reducing costs arising from this obligation presents a clear target for organization.

Due to long periods between product manufacturing and warranty expiry date, it is necessary for a company to find a model that will anticipate costs much sooner than they will actually be known as exact number. This estimation is needed in company's budgeting process since it is an important part of provisions planning.

Another important use of this estimation in planning of corrective activities in order to reduce costs of poor quality.

Failure rate is typical measure of product reliability within given warranty period that can be easily transferred in costs. In our case it is used as estimator for expected quality costs and as measure of market quality performance. It is therefore obvious need to get a good estimation of the terminal failure rate as soon as possible, to be able to provide accurate budget estimation and quick feedback of reliability of products that are already on the market, in order to start with corrective actions.

Different approaches to Failure rate calculation are known to be used in business practice. Selection of proper model is very important to meet both requirements.

Historical data based forecasting model was selected and implemented in IT environment of multinational company, providing better cost estimation for business needs and quicker quality improvements that in combination with other actions delivered double digit annual improvements of reliability in last two years of production.