Making Good Decisions with Your Reliability Data – A Formalized Approach

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All organizations want to find ways to improve their system's reliability. Collecting and interpreting data can often be a complex and confusing process. This is especially true when both qualitative and quantitative data are used in the analysis method. Simple cost-benefit analysis techniques often result in management ignoring other important factors such as "ease of installation" or "availability of spares". The Analytic Hierarchy Process (AHP) provides a methodology to evaluate the benefits of the alternatives, initially independent of cost, utilizing a pairwise comparison technique. This technique allows the analyst to evaluate a problem's alternatives using specific criteria while also gauging (and maximizing) the decision maker's consistency. Once the benefit values are understood, costs can be integrated into the decision process as a cost-benefit ratio. A simple example will be used to explain the use of the methodology in the reliability domain.

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