Reliability Analysis, Prognostic Approach, and their Impact on the Electronic Manufacturing Industry

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Abstract: Measurement of some parameters is simple and can be done error-free. But when the parameters have the potential for error then the factor that plays a vital role is the reliability of that parameter. In electronic manufacturing industries, it is critical and important to identify the root cause behind the failure of the device under test. As each failure symptom has multiple root causes, it is very time-consuming and crucial to land on the exact failure mode. This paper focuses on the reliability analysis of the device under test based on the data-driven prognostic model to recognize the mode of failure precisely. The smart manufacturing concept to identify the mode of failure through a data-driven approach will have a positive impact on the electronic manufacturing industry in terms of enhancement of productivity and efficiency of all operations.

Keywords: Reliability, Root cause, Device Under Test, Prognostic Model, Smart Manufacturing