**Introduction:**

All products and services have certain life cycles, the period from the product’s first launch into the market until its final withdrawal and it is split into phases. During this period significant changes are made to sustain the product into the market from the point of view of market demand, strategic planning, design / development methodologies technology advancements.

Under the Product Life Cycle, the design of products and systems change in a manner consistent with shifts in demand and with changes in availability of materials and components from which they are manufactured.

**Importance & Sensitivity of Product Obsolescence in Military & Industrial Applications** is viewed differently,

- In Military Applications, the volumes are low and most of such systems are intended for use over an extended period (> 15 years), so they are not generally sensitive to obsolescence.

- In Industrial Applications, the volumes are high and most of such systems are intended for use over a short period (<= 5 years), so they are sensitive to obsolescence. The main concerns include affordability and profitability, development cycle time, functionality and performance, manufacturability and quality.

To support the rapid pace of technology innovation, impulsive markets and growing globalization, identify flexible design strategies, manage commonality, developing proactive approaches for dealing with obsolescence is a necessity for companies to remain competitive in the marketplace.

The electronics industry is one of the most dynamic sectors of the world economy. The semiconductor industry is now number one in value-added economy globally. As a result of the rapid growth of the electronics industry, many of the electronic parts that compose a product have a life cycle that is significantly shorter than the life cycle of
the product they go into. Electronic part manufacture’s have a challenge to match the pace of sharp increase in demands driven by technology /& materials, making it available at right time and with effective design.

Thus looking at the speedy penetration of electronics into every field, this research will focus on following four fundamental areas that highlight the importance, provide new insight, and offer solutions to the problem of product obsolescence,

- The importance to predict and determine the life cycle of the system. Obsolescence prediction is key in identifying the items most sensitive and allows the company to effectively propose compound solution against future uncertainty long before the problem arises.

- Steps necessary for building systems with the required level of Reliability, Availability & Maintainability (RAM). This includes, understanding user needs and constraints, redesign of RAM, approach to produce reliable & maintainable systems, monitor field experience & sustain RAM performance.

- Prognostics & Health Management methods, provides advance warning of failure, reduces life cycle cost and assist in the design and logistical support of fielded & future electronic products.

- Proactive Design & Management Approaches. The purpose of an obsolescence management strategy is to ensure that, issues of obsolescence are anticipated, identified, analyzed, mitigated, reported, and dealt with in effective cost, time and highly reliable manner. This also helps providing life cycle support and guidance to the management team.
All efforts to solve or mitigate the issues of obsolescence, the study concentrate on,

- Building embedded designs applicable to both Military and Industrial Applications. Design reviews and analysis on discrete components will lead to identify the gaps & design solutions not affecting the overall reliability.

- Value proposition as a decision making tool - Making strategic decisions about when to invest, what technology to invest in, waiting until a future point in time when a new technology may be available, how the product value to customers are all complex questions to answer. Pricing based on Value Proposition offers an approach to addressing issues of obsolescence in long lasting technologies.

This study helps to identify technical gaps, propose design solutions and evolve new techniques to stay competitive in the market.