#  RESEARCH PAPER

 CHIP SHORTAGE

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* **ABSTRACT: This topic speaks about chip shortage problem around the world during the year 2020-2021 which led to a huge fall in sales, product launch & waiting period for various smartphone manufacturers, automobile company’s & various company’s which use chipsets to run their products.**
* **INTRODUCTION:** **A chip shortage typically occurs when there is some sociological or physical change that prevents certain chips from being produced in large enough numbers to satisfy demand.** **Chip shortages can have a major effect on the electronics industry where manufacturers change their sourcing of chips and suffer major loss of profits, such as when PC manufacturer**[**Gateway**](https://en.wikipedia.org/wiki/Gateway%2C_Inc.)**switched from**[**Intel**](https://en.wikipedia.org/wiki/Intel)**to**[**AMD**](https://en.wikipedia.org/wiki/Advanced_Micro_Devices)[**microprocessors**](https://en.wikipedia.org/wiki/Microprocessors)**in 2000. Some manufacturers may find themselves having to redesign their products to account for the shortage of certain chips, or having to leave design options open to allow alternative chips to be incorporated into the design.**
* **CONTENT:**

 **Without a doubt, there is going to an acute chip shortage problem in India till the year 2022, at least till the second half of the year 2022, Volkswagen group of America chief executive Scoot Keogh said at the reutters events automotive summit.**

**The shortage of chips has led automakers around the world to curtail vehicle production, but also driven up profit as vehicle prices have risen. Carmakers use chips in everything from brake sensors to power steering to entertainment systems.**

**Chip sets are used in smartphones, laptops, cars, bikes, and many more electronic appliances & automobiles which has resulted in delaying of new smartphone launches from various smartphone manufacturing companies and in the automobile industry has lead to the increase in waiting period of vehicles which has led to fall in sales record of various automobile manufacturers for example Maruti Suzuki’s sales slide to 46% shortage due to chip shortage which led to increase in waiting period duration of vehicles and also increase in price of SOC’s in the market.**

**Chips are crucial components of vehicles, which facilitate a wide array of features such as navigation, infotainment and traction control. Premium cars with advanced safety and entertainment features need more chips compared with the base models.**

**The more complicated answer is that it takes years to build semiconductor fabrication facilities and billions of dollars—and even then the economics are so brutal that you can lose out if your manufacturing expertise is a fraction behind the competition. Former Intel Corp. boss Craig Barrett called his company’s microprocessors the most complicated devices ever made by man.**

**The main reason for chip shortage is increase in supply of raw materials such as Silicon, Iron, Aluminium, PCB’S and chip manufacturing machinery’s such as 3D printers, PCB manufacturing machines etc., which has lead to acute shortage of chipset supply throughout different sectors in the tech industry.**

**Due to chip shortage it has led to fall in sales of various technology dependent and tech company’s suffer more than 50% fall in sales from the second quarter of the year 2021 which has lead to more demand for chips and less in supply which ultimately leads to increase in price of SOC’s.**

* **CONCLUSION:**

**Due to a constant increase in chip shortage throughout the entire year of 2021, we must learn to reduce, reuse our old electronics which will lead to stabilizing this chip shortage problem & to partner with various semiconductor manufacturing companies to jointly produce SOC’s will lead to reduce in chip shortage and also will lead tyo increase in productivity among all the chipset SOC manufacturers.**

* **REFERENCE:**

**\*WIKIPIDIA**

**\*QUORA**