Moore's Law refers that the number of transistors that can be packed into a given unit of space will double about every two years, which brings the cost of computers is halved. It states that we can expect the speed and capability of our computers to increase every couple of years, and we will pay less for them. In general Moore's Law defines that this growth is exponential

Moore’s law is now reaching a saturation point where more and more transistors cannot be packed onto the same chip area. This saturation is due to the following reasons:

* Increased transistor density leads to increased power consumption which in turn means it leads to increased heat generation and cooling the system becomes increasingly difficult to do. This is also known as the power wall problem.
* Dynamic power is directly dependant on the clock frequency, therefore if the clock frequency is increased by packing more transistors then the dynamic power will also increase leading to a heat problem.
* To reduce dynamic power consumption, we try and reduce swing voltage (voltage scaling) but Denard’s scaling tells us that voltage should scale with transistor size and this would mean that there is a smaller margin for noise tolerance and the system would not be able to recover from these errors i.e. it is limited by noise or threshold voltage.
* Leakage power cannot be prevented by voltage scaling as the insulator tends to become increasingly thinner as the transistor sizes grow smaller and smaller and due to this the leakage power increases.