

## Transistors: The neurons of technology.

According to Newton's law of inertia, the tendency of a body is to stand still when no force is exerted on it. Outside of physics, it is possible to perceive the same condition with regard to society's dependence on the use of transistors, since most of our electronic devices work by using this component. Moreover, the technological world has not advanced in this matter in the last 73 years since its invention because since then there has been no real need for renewal, that is, in the 21st century we could only live without transistors if we were to use triode valves again or by inventing something more efficient.

During the period of the Second World War, the world experienced what years later I have been called The 3rd Industrial Revolution. This period, which began in mid-1935 and lasted until the early 1950s, saw various advances in warfare, technology, medicine and more. Humanity took great steps to create technology in which today a large portion of the population has easy access; however, at that time society was only crawling towards this new technological world. With this acceleration in the process of creating new tools, there also arose the need to reduce and improve the electronic components existing at the time, an example of this would be what we know today as a transistor. Its discovery in 1947 was one of the milestones of technology, so important that the authors of the discovery received the 1956 Nobel Prize in Physics.

It should also be pointed out that, even after 73 years, the research that gave life to this semiconductor has not yet discovered anything more efficient that could replace it, so much so that the advances in computers are precisely due to the presence of the transistor. The importance of computers today is also evident, so from the computer we can emphasize the relevance of transistors. A simple example of this can be equating the human body with a computer; after all, its brain contains about 86 billion cells called neurons - the tiny switches that allow one to think and remember things. Computers

contain billions of miniature "brain cells" too. They are called transistors and are made of silicon, a chemical element commonly found in sand.

In view of all that has been presented previously, one can come to the conclusion, that nowadays living without the existence of transistors would be a step backwards, after all, most of the existing and essential technologies in our experience - in a technological age - would not have been invented or even would not have evolved as fast as they were. The discovery of compact semiconductors has facilitated the development of technologies on a large scale. It is undeniable that it cannot be said that in the future there will not be something capable of replacing it, but with what studies present us, this can take a long time and the world of innovation does not stop. Thus, our current technology depends on transistors and we cannot live without them.

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