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Data and Energy Relationship

Computer data is behind everything that allows the modern information age to function. If data and the process of information transfer are observed closely, the fact is derived that data is electrical energy. So, different amounts of data being transferred between two devices should merit different amount of electricity traveling through the wires that carry the data. But, no data value has an energy value in modern science. This study seeks to determine the relationship between any quantities of computer data and each amount's energy. It was hypothesized that computer data and energy have a positive association.

Universal Serial Bus drives (USB drives) are information storage devices. When connected to a computer via USB port, a user can send data to and from the drive and the computer. Thus, one can calculate the amount of energy a certain quantity of data has by placing a meter between USB drive and a computer through cutting a USB extension cable in half. One can open different sized files from the drive, on the computer; the meter will give the necessary measurements.

The correlation between the two values (data and energy), were shown by the results to be continuously positive. As the amount of data was increased, the corresponding energy increased as result. When a 0.0803711 MB file was opened, the energy transferred was 3548.3488 μJ . And for 1.27 MB, there was 5742.7224 μJ .

Although there were undoubted errors in the experiment of this project, the results still displayed the reality. It supported the idea that data and energy have a positive association. In order to find a mathematical formula to show the relationship between any data value and it energy, a trend line was created. A formula was successfully derived.