

Information-Communication Energy Demands

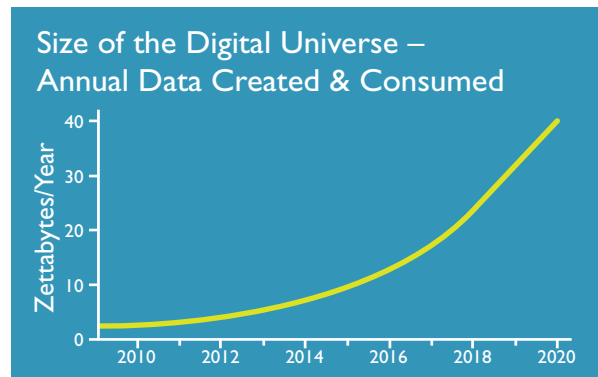
Modern technologies consume vast amounts of electricity worldwide with coal supplying over half of the energy.

Electricity consumed to power America’s digital lifestyle is now equal to all of the electric generation of Japan and Germany combined — as much electricity as was used for global lighting in 1985. This largely “behind-the-scenes” energy demand will only continue to grow as mobile communications and internet usage increase.

An Enormous New Energy Consumer

Cell phones, laptops, mobile devices, DVRs and other gadgets of the digital age – along with the massive networks that exist to serve them and the manufacturing infrastructure to provide them – have become an information-communications-technology (ICT) “ecosystem” that already consumes almost 10 percent of world electricity generation. A comprehensive new study¹ reveals that this level of energy consumption is already 50 percent more than the energy consumed by the entire global aviation sector.

As the world’s largest source of electricity, coal fuels the largest portion of the world’s digital demands. Coal supplied 68% of electricity generated globally over the past decade and is forecast to supply at least 50% for the next decade.



An Invisible Energy Demand

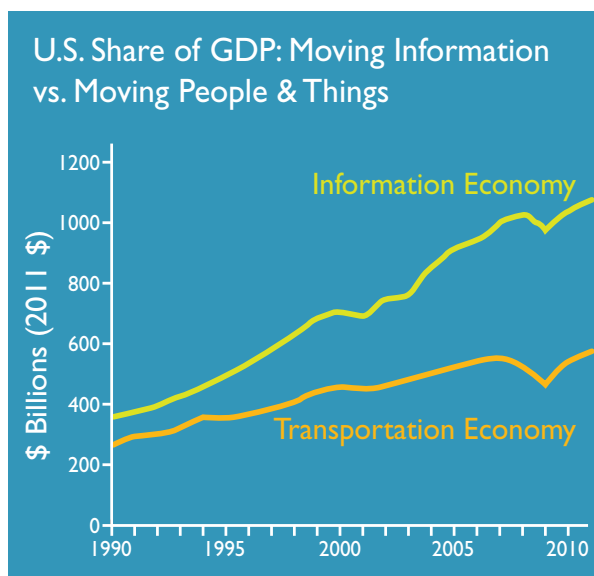
Most of the electricity required for our modern digital lifestyle is consumed out of sight. Vast networks and servers require significant amounts of electricity to operate as do the factories to manufacture electronic devices in the billions.

In personal terms, using a smart phone or a tablet to watch an hour of video consumes annually more electricity in the remote networks than two new refrigerators use in a year.

Demand Growing Exponentially

Hourly internet traffic will soon exceed annual internet traffic in all of 2000.

For the U.S. economy, over \$1 trillion of the GDP is associated with information and data – moving and sharing bits. This is more than twice the share of the GDP associated with transporting people and goods. The information sector is now the fastest growing part of the economy – powered in large part by affordable electricity from coal.



1. “The Cloud Begins with Coal: Big Data, Big Networks, Big Infrastructure, Big Power – An Overview of the Electricity Used by the Global Digital Ecosystem,” by Mark P. Mills, CEO, Digital Power Group, August 2013 – available at http://www.tech-pundit.com/wp-content/uploads/2013/07/Cloud_Begins_With_Coal.pdf?c761ac&c761ac