

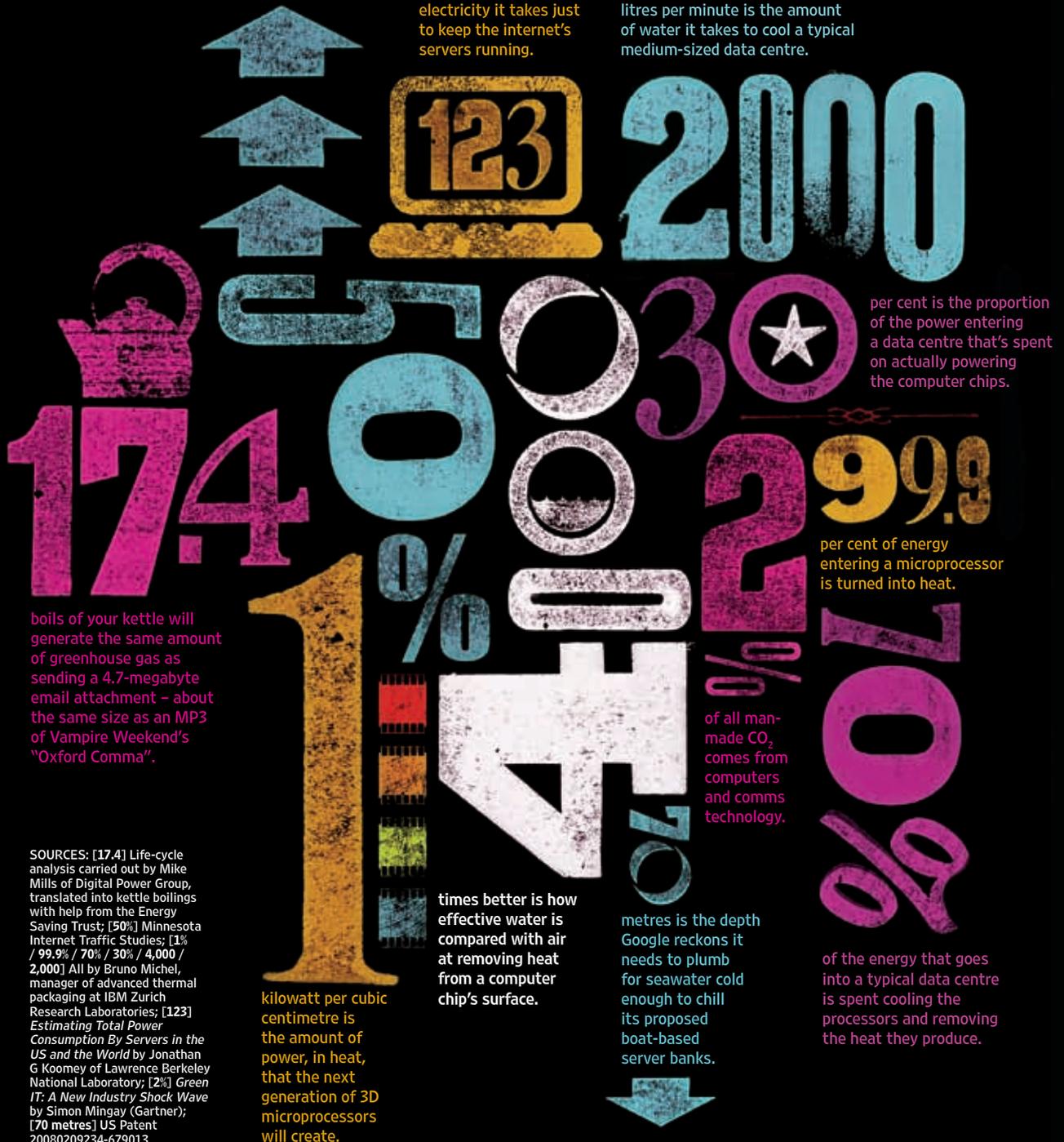
# THE INTERNET'S ELECTRICITY BILL

Cloud computing, Facebook, YouTube: your every online click demands energy to power it. So how guilty are you of adding to global warming? WIRED investigates the data

is currently the annual rate at which internet traffic is growing, mainly due to video content.

billion kilowatt-hours per year is how much electricity it takes just to keep the internet's servers running.

litres per minute is the amount of water it takes to cool a typical medium-sized data centre.



boils of your kettle will generate the same amount of greenhouse gas as sending a 4.7-megabyte email attachment – about the same size as an MP3 of Vampire Weekend's "Oxford Comma".

per cent is the proportion of the power entering a data centre that's spent on actually powering the computer chips.

per cent of energy entering a microprocessor is turned into heat.

of all man-made CO<sub>2</sub> comes from computers and comms technology.

times better is how effective water is compared with air at removing heat from a computer chip's surface.

metres is the depth Google reckons it needs to plumb for seawater cold enough to chill its proposed boat-based server banks.

of the energy that goes into a typical data centre is spent cooling the processors and removing the heat they produce.

kilowatt per cubic centimetre is the amount of power, in heat, that the next generation of 3D microprocessors will create.

SOURCES: [17.4] Life-cycle analysis carried out by Mike Mills of Digital Power Group, translated into kettle boilings with help from the Energy Saving Trust; [50%] Minnesota Internet Traffic Studies; [1% / 99.9% / 70% / 30% / 4,000 / 2,000] All by Bruno Michel, manager of advanced thermal packaging at IBM Zurich Research Laboratories; [123] *Estimating Total Power Consumption By Servers in the US and the World* by Jonathan G Koomey of Lawrence Berkeley National Laboratory; [2%] *Green IT: A New Industry Shock Wave* by Simon Mingay (Gartner); [70 metres] US Patent 20080209234-679013