

The World is Data Thirsty

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WHEN the Sloan Digital Sky Survey started work in 2000, its telescope in New Mexico collected more data in its first few weeks than had been amassed in the entire history of astronomy. Now, a decade later, its archive contains a whopping 140 terabytes of information. A successor, the Large Synoptic Survey Telescope, due to come on stream in Chile in 2016, will acquire that quantity of data every five days.

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Wal-Mart, a retail giant, handles more than 1*m* customer transactions every hour, feeding databases estimated at more than 2.5 **petabytes** the equivalent of 167 times the books in America's Library of Congress (see article for an explanation of how data are quantified).



What's happening in Facebook?

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Facebook, a social-networking website, is home to 40 billion photos.

Human Genome!

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Decoding the human genome involves analyzing 3 billion base pairs which took ten years the first time it was done, in 2003, but can now be achieved in one week.



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Well! What are they?

1. spot business trends
2. help prevent diseases combat crime
3. help weather forecasting
4. predict future

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5. helps business managers, economists, scientist and etc. to understand, take decisions and changes human survival and standards of living

Security & Maintenance

From Ponemon's IBM-sponsored research

- ▶ It cost U.S. companies hit by data breaches last year an average of \$5.4 million to cope with the after-effects – up 9% from the year before.
- ▶ On average, it cost \$201 per record lost, up from the \$188 the year before.
- ▶ Heavily regulated industries such as healthcare, transportation, energy, financial services, communications, pharmaceuticals and manufacturing tend to have a higher per capita breach cost.
- ▶ Healthcare in general is believed to have faced the highest per-capita cost per industry at \$359 and the public sector the lowest at \$100.

What are the reasons for this?

Malicious and criminal attacks are cited most frequently as the root cause for data breaches globally, comprising 42% of incidents, while 30% were blamed on a negligent employee or contractor, and 29% on “system glitches” related to both *technology and business process* failures.

- ▶ The maintenance is another problem with data. One manager of world renowned e-retailing company boasts that “a 15-megawatt data center can use up to 360,000 gallons of water a day.” For instance; look at [here](#)
- ▶ Google had to obtain patent for its floating platform-mounted computer data center. For more details you may look at [here](#)

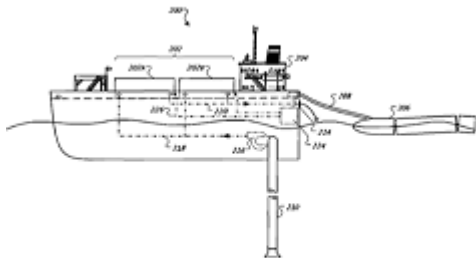


FIG. 2

This is the side view of the data center system.

Figure: Google's floating data center



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