When IT systems are down, so is profit

In any telecommunications system, the physical layer is always the first and most important layer, since computers, networks, and the internet would not function without it.

The physical layer refers to any hardware that comprises these systems: cables, servers, back-up power supplies (UPS), among many other components.

In 2013, 40% of data centre outages were caused by the malfunctioning of the physical layer. Failures of IT equipment, the UPS, or the ventilation systems caused millions of dollars of loss profit to companies across North America.

In fact, the most costly problem was the failure of IT equipment, averaging $959,000 of profit loss per outage.

Average cost of an IT equipment failure: $959,000
Average cost of a UPS system failure: $678,000
Average cost of a heat or AC failure: $517,000

Prepared and designed by FANCOM Connects Ltd.
92 Lakeshore Road East, Suite 226, Mississauga, ON, L5G 4S2
Phone: 905.990.4845     Web: www.fancomni.com
To prevent unnecessary costs to a business, you want to prevent system failures - it’s as simple as that!

In a data centre, you can request the designer to ensure fewer occurrences of physical layer failures depending on which tier of uptime you hope to achieve.

**What to expect...**

**Tier 1**

- 29 hrs/year

A tier 1 data centre has a basic design with no path redundancy and limited UPS capacity; it requires shutdowns for maintenance. The guaranteed uptime of 99.67% results in an average of 29 hours of downtime a year... that’s more than two hours of unplanned downtime a month just from IT failures! Factor in the average cost per minute:

$9,556,000

The average loss a company can expect to suffer a year due to data centre physical layer failures.

**Tier 3**

- 1.5 hrs/year

With a tier 3 design, your annual uptime is significantly higher. Uplink path redundancy and dual-powered equipment allows for fewer failures and shutdowns are not required for maintenance. While initial costs are higher for a design striving to achieve this level, they are negligible compared to the loss prevention they ensure.

$522,560

**Tier 5**

- 5 min/year

A tier 5 data centre, although currently prototypical, is the paragon of data centres, promising 99.999% uptime. A tier 5 design would incorporate all the elements of a tier 4 including fault-tolerance, which ensures path redundancy of all components, compartmentalization, dual-power sources, and the prevention of system deterioration.

$29,000
Unless you are the owner of a multi-million dollar company requiring massive data centres, you’re probably thinking

“So what? I don’t have a data centre, why does this concern me?”

And you’re right - most small businesses do not have data storage or network systems with higher tier rankings. But the idea behind increasing the reliability of IT systems applies to any magnitude or type of business. Committing to proper design from the start prevents failures down the road.

Hiring an RCDD is the first step to ensuring a well-designed, reliable, and robust physical layer in communications systems. From single-server networks to large data centres, Fancom has both the knowledge and years of experience to help you achieve your IT goals efficiently and at low costs. Visit our website www.fancomni.com or call us at 905.990.4845

Sources: https://uptimeinstitute.com

**Schools**

- 44% Percent of Ontario school teachers who use videos or Youtube for instruction
- 33% Percent of Ontario school teachers who use external websites for instruction

In a school environment, 2-3 hours of downtime a month could lead to teachers missing lessons that were dependent on or supplemented by internet. This in turn causes delayed schedules.

**Small businesses**

- 43% Percent of small businesses in the USA who use cloud computing technologies in 2013
- 41% Percent of small businesses who report the time it takes to fix problems is one of the biggest challenges they face with technology

In a small business, 2-3 hours of downtime a month could have multiple implications. For businesses that sell online, IT failures could disrupt the sale process. Other businesses which rely on the internet for research, applications, or management suffer equally from the lost time.