Reducing Telecommunication Waste

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National Heart Centre Singapore
SingHealth

Team Members: Edmund Khoo Kim Hai, Wendy Chu Lin Yuh, Jacqueline Huo Huijun, Goh Li Woon

Background

As part of NHCS' initiative to actively look into environmental sustainability, a review was conducted to look at ways to reduce electricity consumption.

Often, machines are kept on standby mode in anticipation of its use. Electric power is consumed by electronic and electrical appliances while they are switched off (but are designed to draw some power) or in standby mode. The power is consumed by internal or external power supplies, remote control receivers, text or light displays, circuits energised when the device is plugged in even when switched off. While on standby mode, these machines continue to consume electricity power to maintain signal reception capability, power the internal clock, for battery charging, continuous display, etc. Each watt of continuous standby consumes about 50.2kWh of electricity per year.

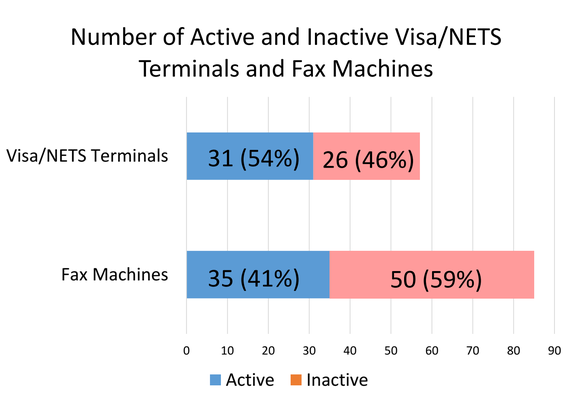
Electricity is very often generated by combustion of hydrocarbons (oil, coal, gas) or other substances, which releases substantial amounts of carbon dioxide, implicated in global warming, and other pollutants such as sulphur dioxide, which produces acid rain. Standby power is a significant contributor to electricity usage and energy used by older devices can be as high as 10–15W per device.

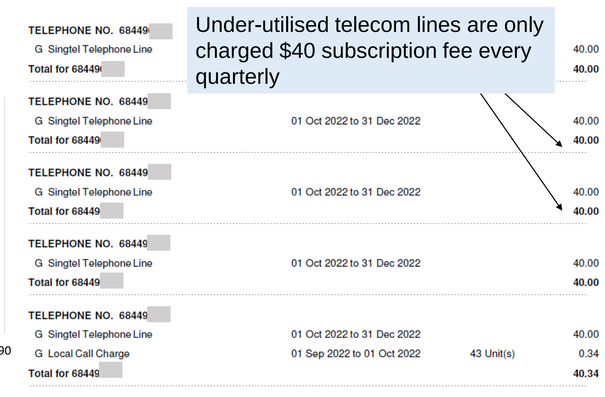
OBJECTIVE

To terminate under-utilised telecommunication equipment that consumes electricity unnecessarily.

Methodology

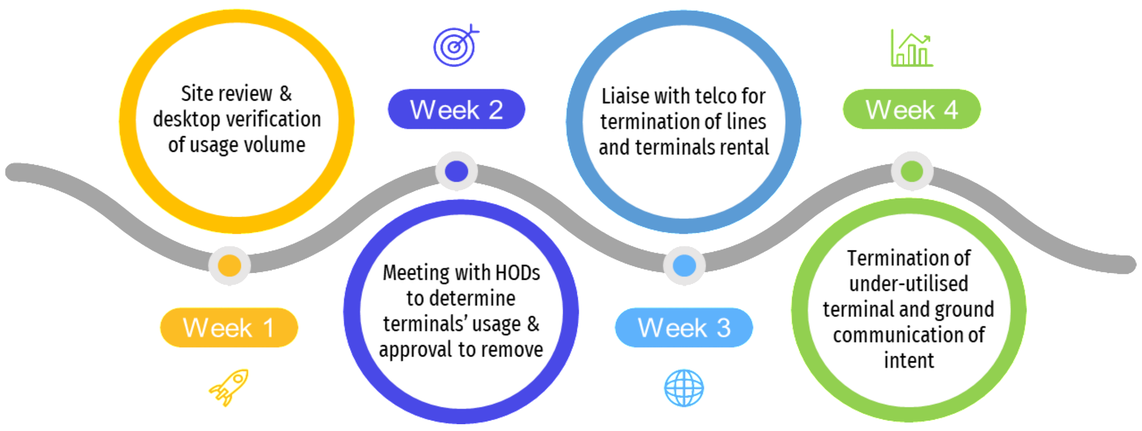
The site review conducted by the team found numerous under-utilised Visa/NETS terminals and fax machines. It is further verified by studying the telecom bills from January 2022 to February 2023 to determine the extent of usage of the direct lines linked to these devices. We found that 46% of the Visa/NETS terminals have 0% to 1% activity and close to 59% of the fax lines have got no usage as well.





The utilisation of fax machines and Visa/NETS terminals has been on the decline as people can opt to communicate via email text or do online payment respectively.

The fax machines and Visa/NETS terminals had to be turned on and kept on standby mode in anticipation of its use. While on standby mode, these machines continue to consume electricity power; each watt of continuous standby consumes about 50.2kWh of electricity per year. Telecommunication lines of low usage were traced to their locations, and Head of Departments (HOD) of the respective departments were then consulted on whether they would like to keep the telecommunication lines for the respective devices.



The finalised plans on the terminals to be terminated and removed was approved in the monthly Operations meeting attended by all HODs in NHCS. The HODs of the affected departments then cascaded the information to the ground staff and processes were refined to cope with the changes.

Since physical NETS and credit card payment transactions are no longer available at all payment counters, patients were directed to self service kiosks for card payment.

Results

Visa/NETS Terminals Removed

26 Inactive terminals | **31 Active terminals**

After the review, a total of 26 out of 57 Visa/NETS terminals were found to be inactive or with extremely low usage over a period of 1 year. The Visa/NETS terminals are kept on standby mode for 24 hours daily, 365 days per annum.

Each idling terminal will consume about 10.5 kilowatts of energy per annum and 26 terminals will lead to an energy savings of 273kWh per annum.

All 26 rented terminals are returned to the vendor who will recondition the machines for other companies use, reducing the demand for production of new terminals.

Fax Lines Terminated

Out of the total of 85 fax lines subscribed, 50 fax lines were found to be under-utilised or inactive. At the same time, 20 stand alone fax machines were also removed for condemnation due to the age of the machines and the low utilisation rate. Condemned machines were sent for e-waste recycling. The remaining machines are typical multipurpose copier printer with fax function.

Each fax machine on standby can consume about 35kWh of energy per annum and 50 fax machines will save 1750kWh per annum.

ENERGY SAVINGS

Total Energy Savings : 273 + 1750 = 2023kWh

This is enough energy to power up to 7.3 households for 30 days.

COST SAVINGS

The telecom lines connected to the Visa/NETS terminals and fax lines are charged for subscription at $160 per line per annum and the rental of each of the physical Visa/NETS terminals cost $720 per annum.

Savings from telecom lines subscription		Savings from Visa/NETS terminal rental
76 telecom lines x $160/annum = $12,160	+	26 terminals x $720/annum = $18,720

Total Cost Savings : $12,160 + $18,720 = $30,880

INTANGIBLE BENEFITS

- Decluttering of limited work spaces when unused fax machines and Visa/NETS terminals are removed. This led to a cleaner and tidier work space, leading to improved infection control.
- Resources used to maintain under-utilised equipment is reduced/eliminated leading to lower maintenance cost.
- Cultivating employees to have a positive mindset towards environmental sustainability through daily operations.

Conclusion

Though individual acts of environmental sustainability may seem insignificant on its own, the accumulative benefits can be very significant and result in huge energy savings as well as cost savings. With this project as the stepping stone to NHCS' journey to environment sustainability, we hope to be able to expand and do the same for other electronic devices in NHCS, and cultivate the habit of being more mindful towards the environment within our employees.