

excelan : Getting the most out of your batteries.

At Excelan, we believe that everyone should maximise their IT investment. That is why we have developed a series of relevant and useful emails to help you achieve this.

Getting the most out of rechargeable batteries.

Many of us are quite pleased with the battery life that our laptop delivers when it is new. But we all notice that as time passes, on those occasions when we decide to go unplugged the laptop battery performance just isn't what it used to be it. What started out as a going strong for two hours or more, after eighteen months now struggles to hang in for twenty minutes.

There are plenty of tricks and tips floating about for how to extend or refresh the life of your battery. However without a little knowledge some of these will do more harm than good.

The first thing you need to stay aware of is that battery technology has changed a lot over the last ten years, and is now changing very rapidly as millions are thrown at research. So what changes? Chemistry for one thing.

It is the chemistry of the battery that will determine how it performs over its lifetime and what you can do to improve the performance of older batteries or to prolong the life of your new batteries

So what 'chemistries' are there in use at the moment?

Have a close look at the battery. The manufacturer is required to indicate what chemicals are used in the battery so that they can be disposed of accordingly. The most common batteries are as follows:

Nickel – Cadmium (abbreviated to NiCa or Ni-Cad): This is about the oldest form of common rechargeable battery, with the probable exception of the big lead – acid filled brick that starts your car. Ni-Cads have almost entirely disappeared from the laptop and mobile phone market because of their

notoriously poor lifespan. They are still found in cordless drills and vacuum cleaners. In time they become afflicted with what is known as a 'memory effect' whereby it would not charge up past the point that it was last charged to. This meant that every time you charged it you would get a little less use from it, till it was next to useless. Ni-Cad batteries hold their charge fairly well while not in use.

Nickel Metal Hydride (NiMH): These are still popular today in some cheaper laptops many mobile phones and more so in cameras where they can deliver a larger amount of energy more quickly than other types of batteries. They pack more energy for their size and weight than the Ni-Cad batteries. They also deliver almost constant level of energy until they are fully discharged, so when the battery-low light comes on, you should believe it. NiMH batteries loose about 30% of their charge per month if they are not in use.

Lithium Ion (Li-ion): These are the most popular of the newer technologies and while they can delivery a little more energy than NiMH and they are much lighter and so are popular with laptop and mobile phone manufacturers. They cannot deliver the energy quite as fast as NiMH so you will still see NiMH about. However they are much slower to loose their charge when they are not in use (about 5% per month) and are sometimes sold charged and ready to use.

So how to get the most out of each one?

Nickel – Cadmium (abbreviated to NiCa or Ni-Cad): There were two ways you could try to rejuvenate these batteries. The first was what they call deep-discharge, which basically means running the device until the battery is totally flat as often as possible. Another trick was to drop it in the freezer for a few days, and then let it thaw again (for a few more days) before recharging it. Wrap it in a tea-towel while it thaws to let it thaw out slower and also to soak up the condensation that it will get all over it. Ni-Cads do not appreciate being left on the charger all of the time unless you have a special charger that shuts down when they are full. They tend to heat up internally and this seems to shorten their life.

Nickel Metal Hydride (NM-Hi): Ni-MH batteries are actually pretty robust. Ni-MH do not suffer from the 'memory-effects' that plague Ni-Cad batteries. Unlike Ni-Cads it occasionally helps to fully discharge Ni-MHs but they should not be left sitting around in a discharged state. Most problems come from being charged incorrectly. Using a charger that is designed for Ni-Cad batteries may not charge the Ni-MH batteries fully. Also some trickle charge systems used for Ni-Cad batteries can damage Ni-MH batteries and shorten their life if they do not switch off when the battery is fully charged.

Lithium Ion (Li-ion): Li-ion batteries hate heat. Heat will shorten their lives considerably. The life of a Li-ion battery depends very little on whether it is used or not used, charged or discharged, either way it will lose about 20% of its capacity per year when used or stored at room temperature. The problem comes with devices that generate heat as they operate. Heat increases the rate at which it loses its capacity. For this reason it is suggested that if the device generates lots of heat as most modern laptops seem to, and you are running from the mains supply, then take the battery out. Of course you would need to remember to put the battery back in, or shut down, before you unplug from mains or un-dock the laptop. A fully charged Li-ion battery should be able to sit in the drawer for a few months and still be ready to go when you need it. Another thing to note is that unlike the old Nickel-Cadmium batteries, Lithium Ion batteries do not appreciate being fully run down. Ideally they will be recharged before they get down to 15% of their charge, so it is important to know what type of battery you have if you want to get the most out of it.

Buying a new battery.

Finally a word of warning. If you are buying a replacement battery for a device because the original battery is no longer performing you should be wary of unbranded batteries and possibly counterfeit batteries that purport to be genuine. Buy the battery from a reputable source. It is not very hard for an unscrupulous person to sell via the internet a Ni-Cad battery re-labelled as a Li-Ion.

This free tip has been provided to you by Excelan. Feel free to pass it on.

If you need help and advice on getting more from your IT systems then call Excelan on 02 8011 0281 or email us at enquiries@excelan.com.au