Going Green – The soft way

A quick guide at options the CIO has today towards Green IT

GREEN IT — But how? Many organizations today find itself under extreme pressure to institute new process that enables smooth implementations of Green IT initiatives. While cost and ROI are the key to making a decision, a major contributing factor for the CIO's to make informed decisions is the lack of a clear consensus on the scope and detail of the project. The options are aplenty – Virtualization, Data Center Consolidation, thin clients etc., however the resulting ROI - Is it justified?

This paper explores all the options and provides a comparison; the resulting benefits from the recommended option are an excellent ROI, substantial energy savings and zero e-waste.

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Background

Computing was never as complicated as what it is today. Computers have found a place in most of the living rooms, leave alone the workplace. Desktop computing has become a standard in many organizations and CIO's are challenged with the complexity of running their IT organization covering a wide spectrum of technologies, like Servers, data centers, redundancy, Disaster Recovery, telecommunication, and desktop management.

Challenges

Specific to **Desktop computing**, organizations have the constant challenge of fighting anti-obsolescence, keeping software investments low, maintaining high security and protecting data threat, to name a few.

End point solutions on security, threat control, management and other business specific needs are being addressed on a continuous basis by the CIO's team. The IT team is forced to focus now on the day-to-day computing tasks leaving little time for them to take their IT growth in a more strategic direction aligning to the business needs. With this scenario, going green is an initiative that has to be driven mainly by the CIO's team, where they are already gasping for time.

Available Options for Green IT Initiatives and resulting ROI

Going the Green IT way is a matter of utmost urgency today to most organizations, may not be due to the global pressure on climate change considerations but, most importantly today a very important cost saving measure.

Organizations have put together plans to go green with lean data centers, virtualization and other technology implementations. It is surely an important milestone as far as going green on the data centers are concerned, because the cost of reduction in servers is probably not the major money saver, but the cost of electricity for cooling the data center and the real estate associated with it is! The return on investment from the data center migration to virtualization is approximately 2-3 years, taking the cost of recurring electricity costs on cooling and saving on real estate.

Data centers and servers contribute 10-15% of cost of electricity from computing. So where is the balance cost of electricity on computing? It may be hard to believe, but it is a fact that it is the desktop computing which is consuming close to 85%-90% of the cost towards electricity.

An average desktop computer consumes approximately 2.5 to 3 units of energy per day. Out of which the productive usage could be a maximum of 2 electrical units (not applicable in situations where the work desk and the desktop is used 24x7), which leaves a gap of 1 unit that can be conserved daily. Add to this the weekends, holidays, non-productive time when the employee is away in meetings, breaks, trainings and other activities. This provides for a window of savings close to 40 electrical units per month which translates to a sizable cost of 50K USD per annum per 1000 computers.

The factor that plays a crucial role in going green on desktops is no doubt the cost savings from electricity, but it is also important to note that this doesn't come in the way of productivity, which is today important as organizations depend on desktop computing availability for its day-to-day business.

Desktop computers running operating systems from Microsoft usually have policies for power savings from devices using the ACPI features of the hardware since the release of Windows XP. However, deploying them in an enterprise has always been a dampener due to its rigid architecture on the power savings front. Future operating systems from Microsoft are enhancing these solutions continuously, but are not complete in nature from a lot of technical perspectives.

So what can CIO's do to reduce this cost? Of course there are very many methods recommended and being practiced. A small attempt is made to discuss some of the options that organizations have, their pros and cons, finally summarized with a table that can help in deciding the way forward for going green on desktop computing.

Replace CRT Monitors with LCD

An average desktop computer dated about 4 years, consumes about 130 watts of power. Out of this the CRT monitor consumes about 60 Watts, which of course depends on the size and age of the monitor. If organizations were to replace this CRT Monitor with a LCD Monitor, they can save on power as the LCD Monitors consume 40 Watts of power. So organizations that are looking to replace their CRT monitors with LCD monitors can reduce the cost of electricity by one third, but the cost of replacement and the associated e-waste generation is a sure dampener. Thus considering the cost of LCD Monitors and the cost involved in disposing the older monitors, the return on investment from this option is approximately 5 years.

Replace Desktops with Thin Clients

Then, there is the virtualization method, where desktops could be replaced with thin clients, where the investment is mainly focused on associated hardware and software deployments to be done. There are other factors like loss on productivity, re-training, support enhancement, availability of spares and other technical considerations that come in the way. Add to this, the factor involved in disposing or re-deploying the e-waste of unused desktops. This option may not be an ideal fit for most organizations, which depend heavily on local computing, however it could be good for organizations where the applications are centrally hosted and end users are accessing the servers all the time. An ideal example could be call centers and help desk staff, with of course exceptions depending on the nature of business. The return on investment from this option is approximately 2 years.

Replace Desktops with Laptops

It is surely a fact that laptop computers consume lesser power than the desktop computers. The reduction in power requirement is approximately 50%. However, data security, IP protection and other changes required in terms of theft/damage insurance and maintenance costs have to be factored. These costs overshadow the return on investment from power savings and work counter productive. Add to this, the e-waste generation and the fact that the laptop technological obsolescence is lesser than that of the desktop computer; it will become a bigger white elephant to manage in the long run.

Bring in user awareness

Bringing in an awareness campaign and forcing users to turn off computers when not in use, is surely effective but is not a long term solution to the problem as the awareness is a continuous process and there is no practical and fool-proof method to measure the savings. Monitoring results from an awareness campaign also involves additional manpower to measure and keep a tab on the progress.

Deploy Power Policies over the Domain using Group Policies

Enforcing power policies organization wide using the existing infrastructure of a domain server and a group policy could provide some solace on savings, but the validation of the savings, the proof of savings, exceptions, deviations and the deployment and management of such a policy is a time-consuming continuous effort, adding to the already gasping IT team's bandwidth.

The above two options also leads to challenges to keeping computers up-to-date, which requires anti-virus updates, operating system updates, to be run on computers, where the desktop computers availability during off-hours will have to be considered. A return on investment is not measurable due to factors that do not provide for a measurable savings.

Intelligent Software based Solution

THE IDEAL SOLUTION TO ACCELERATE THE ENTIRE PROJECT

The need of the hour is thus an intelligent, measurable and effective method, which does not demand a huge investment, no dependency on human behavior, no additional infrastructure and a very small one-time effort, which can address the best of both the worlds – productivity and energy savings.

infraSECURE from see beyond technologies (www.seebeyondtech.com) is a software solution that can be deployed on existing infrastructure, with minimal investment and negligible effort providing for maximum returns.

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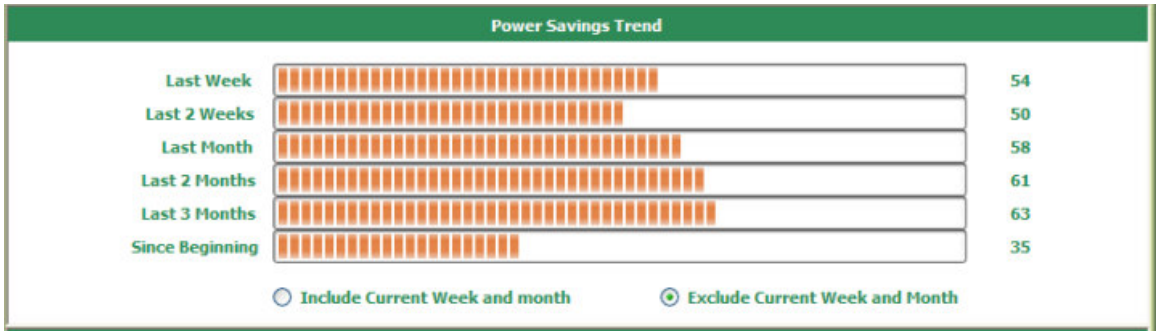
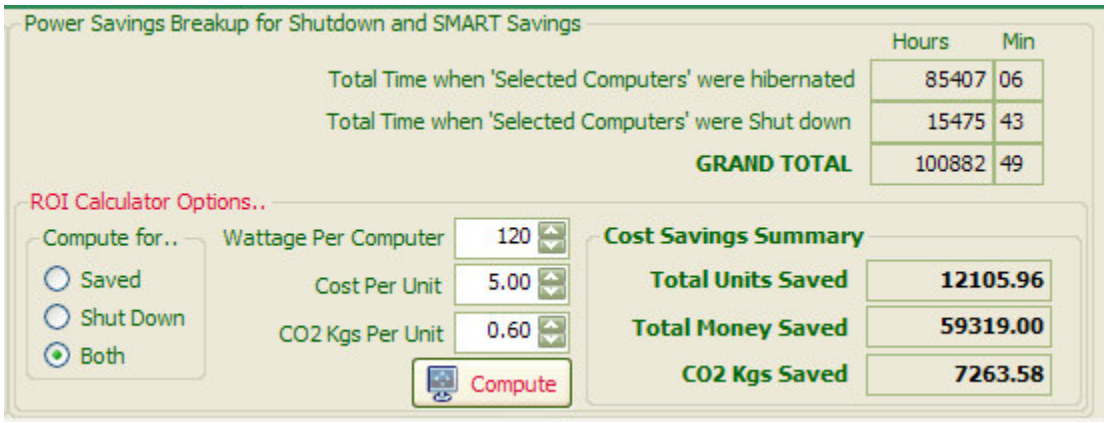
Benefits of going GREEN the soft way:

- Pilots and Implementations have proved Energy savings to the tune of **50 - 66K USD per annum per 1000 desktops.**
- The **consistency of Energy Savings** is established without the dependency of people behavior – Enables management in decision making and budgeting
- Provides a **best of both the worlds – Energy Savings and productivity**
- **Deploy on existing hardware, no additional hardware requirements** are required. Existing Installations of infraSECURE Server are running on Virtual Servers.
- **Zero e-waste**
- **ROI Less than 6 months**
- Optional ISMS toolset to augment **Desktop IT infrastructure Management**

infraSECURE helps you analyze the savings, using its in-built **software energy meter**.



Identify the carbon footprint reduction by way of power savings using the **carbon reduction calculator.**



Summary

The green factors on desktop computing are compared and summarized for all of the above recommended options, tallying the resultant GREEN IT effort and possible returns.

Factor	*Replace Monitors with LCD*	*Replace Desktop with Thin Clients*	*Replace with Laptops*	*Bring in User Awareness*	*Deploy power policies on Group Policy*	***Software solution infraSECURE***
Ease of Setting up Power policy for individual Desktops Centrally	*NA*	*NA*	*NA*	*NA*	*Complex*	***Easy***
Power policies that work based on work hours, providing maximum flexibility for productivity and GREEN IT in non working hours	*NA*	*NA*	*NA*	*NA*	*NA*	***Yes***
Separate policies for week days and weekend	*NA*	*NA*	*NA*	*NA*	*NA*	***Yes***
Wake up capability to run updates and patches	*NA*	*NA*	*NA*	*NA*	*NA*	***Yes***
Temporary disabling of power policy	*NA*	*NA*	*NA*	*NA*	*NA*	***Yes***
Assimilation of power saved hours and power units saved.	*NA*	*NA*	*NA*	*NA*	*NA*	***Yes***
Mandate of power policy if overruled by end user	*NA*	*NA*	*NA*	*NA*	*NA*	***Yes***
Handles known issues on non-hibernation of desktops due to Memory, network share and Printer share	*NA*	*NA*	*NA*	*No*	*No*	***Yes***
Report on systems that are not saving power due to any technical or other reason	*NA*	*NA*	*NA*	*No*	*No*	***Yes***

Factor	*Replace Monitors with LCD*	*Replace Desktop with Thin Clients*	*Replace with Laptops*	*Bring in User Awareness*	*Deploy power policies on Group Policy*	***Software solution infraSECURE***
Manual effort involved to bring in consistent behavior of GREEN IT initiative in the organization	*High*	*NA*	*NA*	*Very High*	*Low*	***Very low***
Capability of power management supported on existing hardware	*NA*	*NA*	*NA*	*NA*	***Yes***	***Yes***
Requires a client installation on every desktop	*NA*	*NA*	*NA*	*NA*	***No***	*Yes*
Hardware Requirements for Server	*NA*	*NA*	*NA*	*NA*	***Low***	***Low***
Installation and deployment ease	*NA*	*NA*	*NA*	*NA*	*High*	***Low***
Woks both in online and offline modes	*NA*	*NA*	*NA*	*NA*	*No*	***Yes***
e-waste to be Handled/Redeployed	*Yes*	*Yes*	*Yes*	***None***	***None***	***None***
Ease of Administration and Learning Curve	*NA*	*NA*	*NA*	*Low*	*Low*	***High***
Return on Investment (Months)	*60*	*24*	*>30*	*?*	*?*	***6***