

# GREEN IT

*Hypothesis or business mainstream ?*



*June 2008*

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# GREEN IT - HYPOTHESIS OR BUSINESS MAINSTREAM ?

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## GREEN IT – HYPOTHESIS OR BUSINESS MAINSTREAM ?




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In our attempt define “GREEN IT” we could say that GREEN IT is the collection of all activities focused to reduce energy consumption and minimize waste in big data centers. Of course energy consumption reduction is inherently contingent on high performing systems, hardware and applications.

Recently energy reduction activities are becoming a more visible piece of the overall corporate energy strategy. For those companies aiming to reduce costs, increase efficiency and data protection and adopt a responsible approach with the surrounding environment a GREEN IT approach is vital.

But if we simply say that GREEN IT is an “*information technology responsibility*” we quickly lose the corporate global view and the understanding of the broader picture, relegating GREEN IT to a new fad for the all colleagues.

We must consider also:

-  electronical equipment production requires high energy consumption and many other resources;
-  electronical equipment life-cycle is shorter than other consumer goods. IT life-cycles become shorter every year and during their operation they produce heat. The heat produced is controlled with other equipment (ie air conditioner) that consume energy as well;
-  the IT industry produces specialized waste - some with high toxicity, other with a long life cycle to decompose and even consumables, like ink-jet, toner cartridge – that require specialized handling techniques.

All these issues have generated rules and laws in many countries to create a framework to regulate electronic equipment production, operation and disposal.

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## GREEN IT – HYPOTHESIS OR BUSINESS MAINSTREAM ?

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As a way of optimizing processes to reduce total resource consumption and waste production it is easy to understand that GREEN IT makes business sense in itself, and is quickly gaining consensus and becoming a part of any IT manager's responsibility.

Regardless of the willingness of the Company to adopt a virtuous approach to the environment and sustainability. Greening the IT department could be simply seen also as a great opportunity of cost reduction and efficiency gaining.

On a practical level Greening the IT dept. could mean :

-  a tangible cost reduction of power bill for the energy needed to run equipment and cool the data center;
-  a reduction in CO2 emissions;
-  a simplification in the data center complexity through a reduction in the total number of servers;
-  an opportunity to virtualize and optimize the company business application;
-  an optimization and identification of hardware/software redundancy;
-  a stronger protection of business sensible data.

We have to avoid the rush to judgment and easy solutions. The market situation today is evolving, there aren't agreed standards and almost all large corporate IT departments are pioneering their own "Green Way"; following recent press announcements than a developing a longer term strategy. This is dangerous and in following you will repeat the mistakes of those who have traveled before you.

On the other hand we can see that the number of companies moving in this direction is growing daily and there is no doubt that GREEN IT is fast becoming a visible business mainstream.

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# GREEN IT IN THE BROAD SENSE



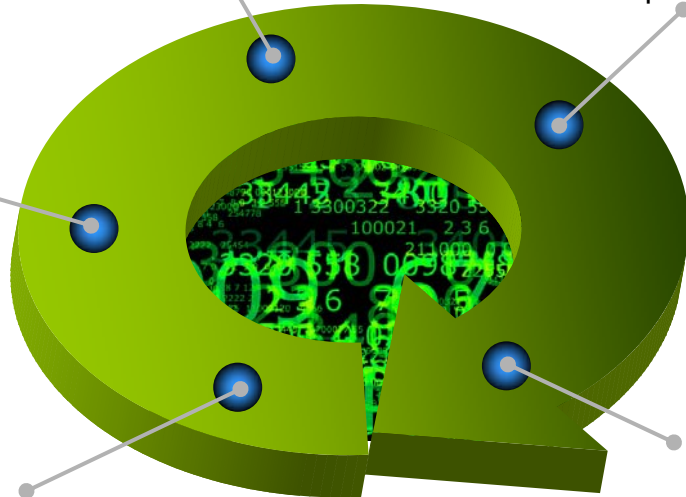
## GREEN IT - HYPOTHESIS OR BUSINESS MAINSTREAM ?

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Support other departments initiatives  
 Develop software and integrated systems in order to support all the company initiatives focused on gaining efficiency  
*(efficiency increase = CO2 emission reduction)*

IT consumable and TCO  
 Consider not only the purchasing cost of IT equipment but all the TCO (Total Cost of Ownership) to evaluate the environmental impact, including in this analysis also the consumable usage that i.e. for a printer is the real cost/impact.

Energy Efficiency  
 Adopt all the needed actions on servers, clients and other equipments to reduce the energy consumptions (server virtualization, server consolidation, PC monitoring etc.)



GREEN Purchasing  
 Challenge all the provider in order to offer new sustainable products and solutions. In other words prefers to buy products that are: more efficient; with reduced packaging; reduced toxic usage; with a longer life cycle and that use less energy to work.

From Cradle To Cradle: manage the IT products at life end  
 Implement policies or simply good habits to properly manage the electronic waste process or give as donations PC, printers etc. that at the end of their lifecycle in the Company could be good enough to continue to work in other context with less high-tech skill.

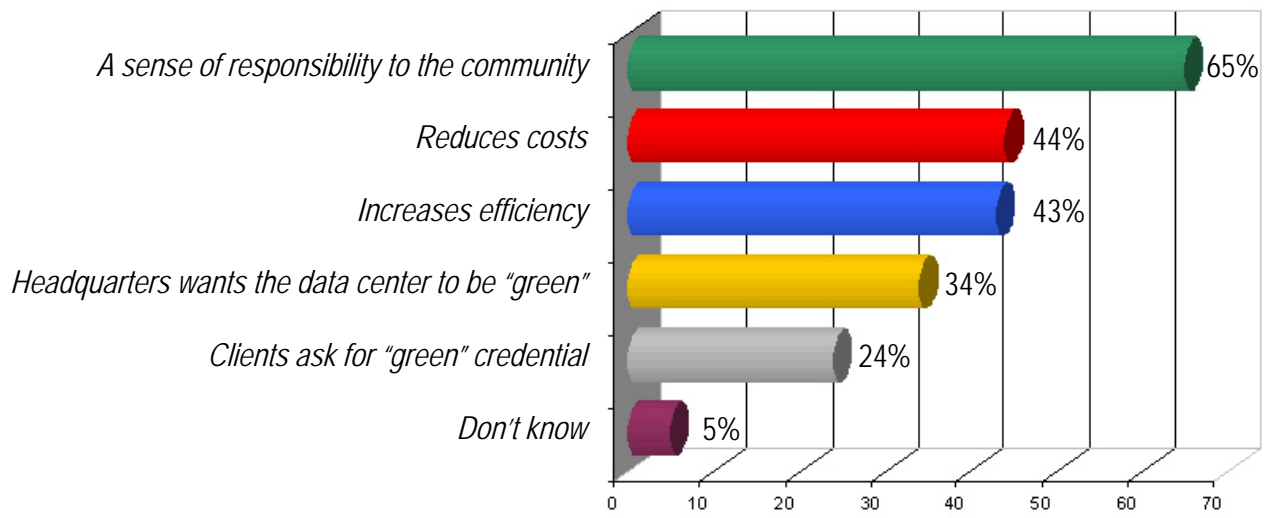
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Many companies are moving to Green Data centers and there are already clear indications on technologies and preferred trends. Symantec™ published on November 2007, a very interesting survey (“Symantec 2007 Green Data Center Report”) on what IT Managers are facing with greening their data center. We here report some highlights from this report.

### Why GO GREEN

*What are the reasons you are creating, or considering creating, a green data center? (multiple choices allowed)*



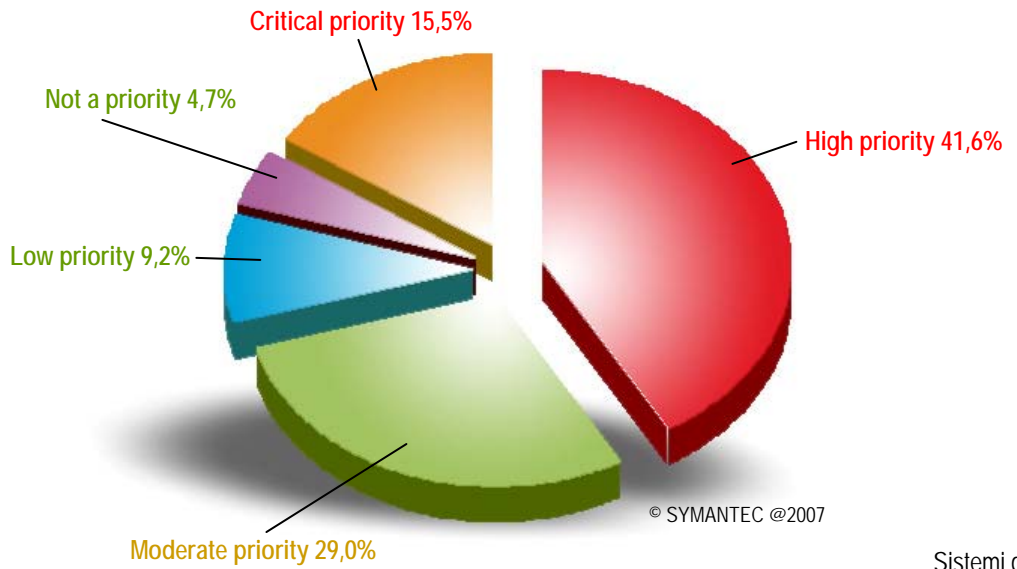
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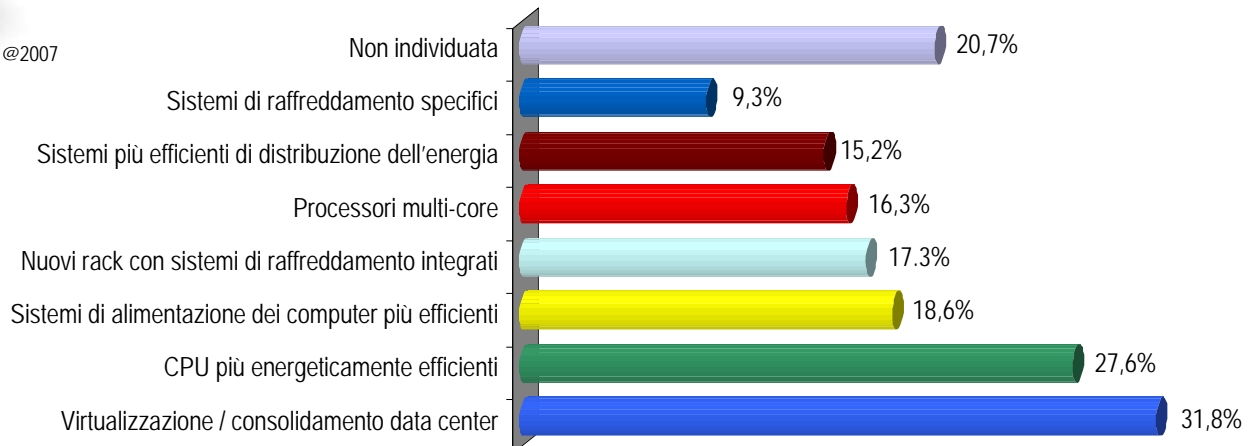
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**Efficiency is the key!**  
*How high or low is the priority of increasing the efficiency of your data center's energy use?*

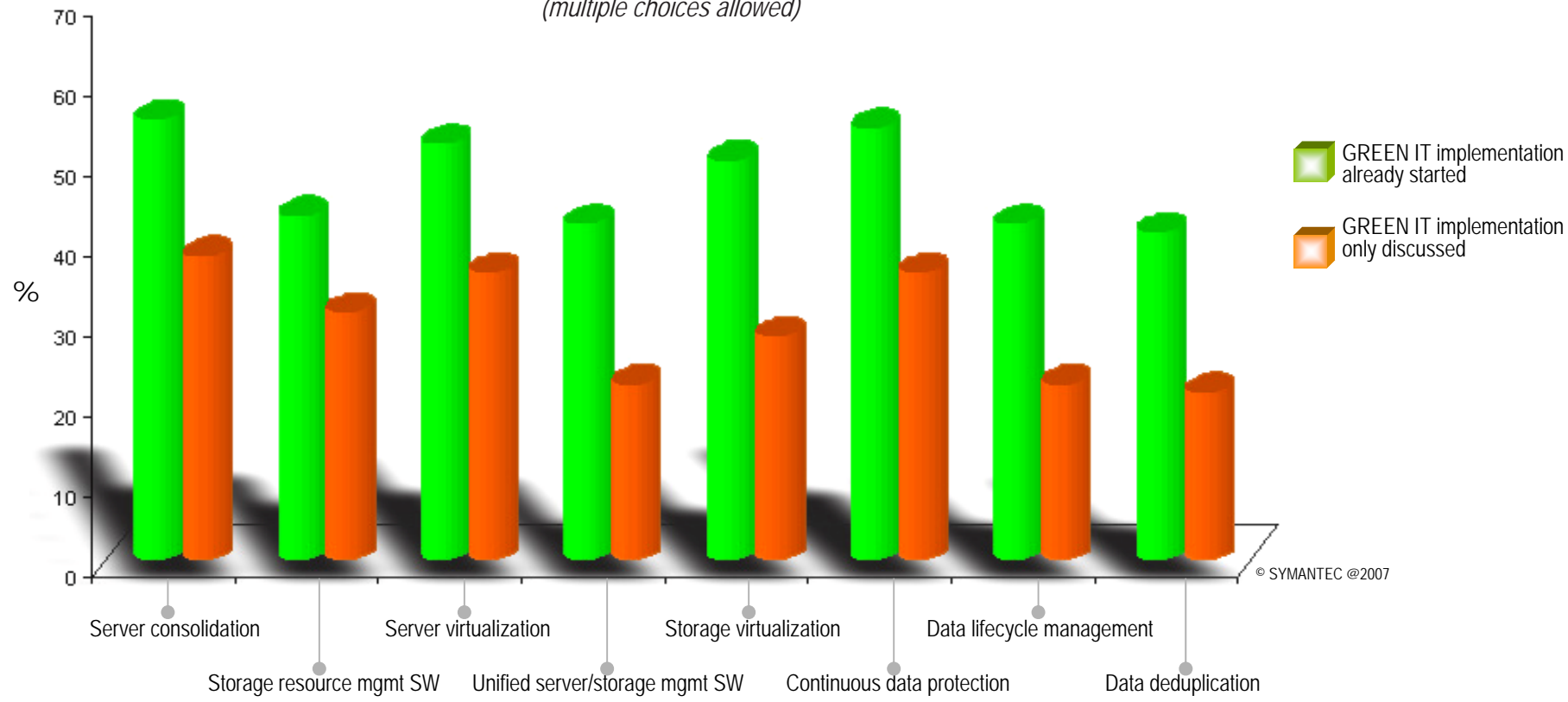


**Key technologies emerge**  
*Which two technologies contribute the most to reducing power consumption in your data center? (multiple choices allowed)*





**Green adopters' use of sophisticated technology solutions**  
*Which best describes your data center's involvement with the following technologies?*  
*(multiple choices allowed)*



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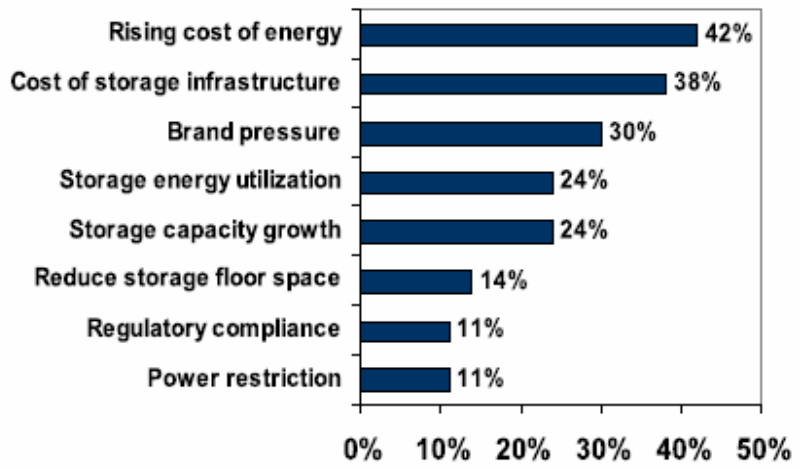
# TALKING WITH IT MANAGERS

## GREEN IT - HYPOTHESIS OR BUSINESS MAINSTREAM ?



We obtained confirmation of the evidence presented by Symantec Corp. In another survey performed by Aberdeen Group in February 2008, from this survey we here synthesized our analysis.

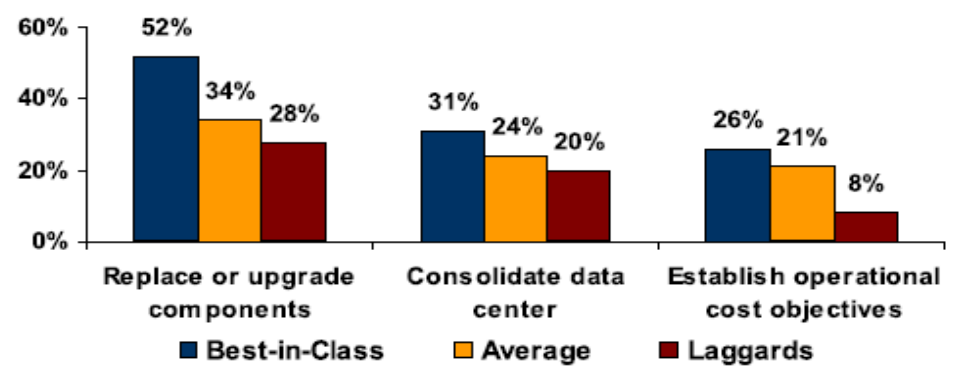
### Pressures to Adopt a Green Initiative



### Top Performers Earn Best-in-Class Status

Definition of Maturity Class	Mean Class Performance
<b>Best-in-Class:</b> Top 20% of aggregate performance scorers	<ul style="list-style-type: none"> <li>15% decrease in data center utilities cost</li> <li>15% decrease in data center floor space</li> <li>12% decrease in storage systems power consumption</li> <li>2% decrease in storage systems cooling requirements</li> </ul>
<b>Industry Average:</b> Middle 50% of aggregate performance scorers	<ul style="list-style-type: none"> <li>2% increase in data center utilities cost</li> <li>0% decrease in data center floor space</li> <li>4% increase in storage systems power consumption</li> <li>14% increase in storage systems cooling requirements</li> </ul>
<b>Laggard:</b> Bottom 30% of aggregate performance scorers	<ul style="list-style-type: none"> <li>45% increase in data center utilities cost</li> <li>37% increase in data center floor space</li> <li>32% increase in storage systems power consumption</li> <li>39% increase in storage systems cooling requirements</li> </ul>

### Current Green Strategies





### The Best-in-Class PACE Framework

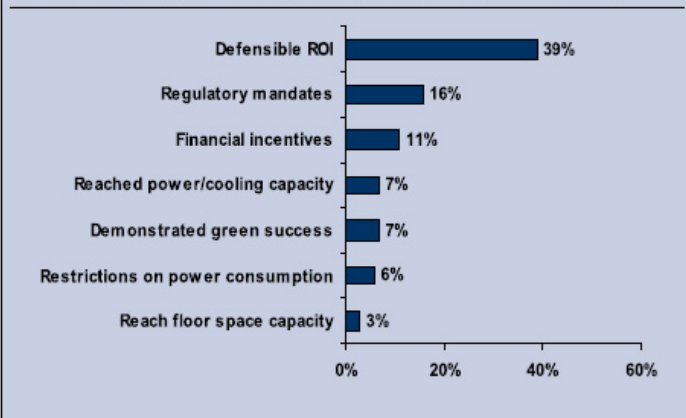
Pressures	Actions	Capabilities	Enablers
<ul style="list-style-type: none"> <li>Storage system energy utilization</li> </ul>	<ul style="list-style-type: none"> <li>Comply with The Green Grid consortium or other energy efficiency guidelines</li> <li>Establish storage operation efficiencies</li> </ul>	<ul style="list-style-type: none"> <li>Measure the infrastructure against The Green Grid consortium or other energy efficiency guidelines</li> <li>Classify types of data being stored and shelf life</li> <li>Information Lifecycle Management (ILM) process</li> <li>Tiered storage architecture</li> <li>Audit energy efficiency of storage infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Storage Area Network (SAN)</li> <li>Tape storage</li> <li>Network Attached Storage (NAS)</li> <li>Server and storage virtualization</li> <li>Energy efficient storage components</li> <li>Storage Resource Management (SRM) software</li> <li>Energy-efficient facility design</li> <li>Energy-conserving enclosures</li> </ul>

#### Aberdeen Insights — Strategy

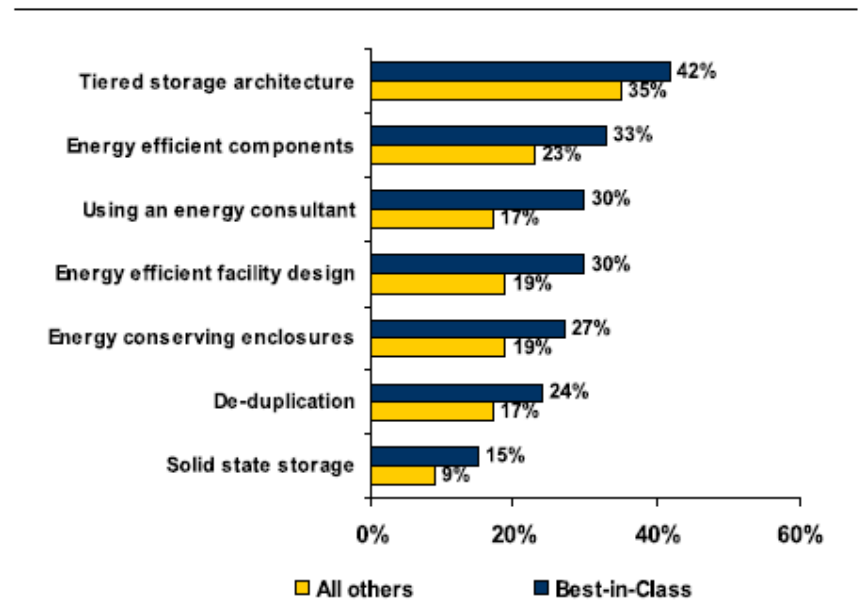
One of the attributes of Best-in-Class companies in this report is that they have already implemented a green initiative. As a result of their actions, Best-in-Class companies have achieved reductions in power consumption or reduced the requirement for cooling.

But what about companies that are considering adopting a green initiative, (which represented 30% of responding companies)? What factors would convince these companies to accelerate an implementation?

Figure 3: Convincing Companies to Adopt a Green Initiative



#### Technologies Supporting a Green Initiative





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# 7 REASONS TO DO IT



## GREEN IT - HYPOTHESIS OR BUSINESS MAINSTREAM ?

### It is the right think to do.

Considering that 15 PCs are responsible, more or less, for the same CO2 emissions amount of a mid size car engine it is easy to understand that simple actions such as switching off the PC is the right thing to do. Reduce the energy consumption when not necessary or avoid useless or toxic waste is a responsibility for everybody.

### It's a good opportunity of cost reduction.

Big data centers use a lot of energy to operate servers and other equipments as well as to cool them. Implementing a GREEN IT strategy could allow to reduce the company headquarter energy bill of roughly 10%-15%.

### It's a boost to value creation.

Challenging IT department and all employees in eliminating energy wast and creating software application efficiency it's a way to add real value to Company.

### It's appreciated by employees.

Structured approach to GREEN IT can easily moved from data centers to employees desk crating a common sense of involvement and collaboration across company. Each employee adopting the right behavior with its IT equipment will be happy to contribute directly to reduce the company carbon footprint and this will increase the sense to belonging to the company.

### It's a great opportunity to reduce IT complexity.

A common problem in IT environment is the growing complexity resulting from layer-after-layer operation. This situation is mainly due to merger and acquisition activities and from integration in the data center external equipments or applications. The consolidation and/or virtualization of servers and applications will allow not only energy efficiency but also results in terms of infrastructure efficiency and security.



### It's a "natural" step.

Institution and public opinion are asking more and more to business leaders to implement a sustainable process to reshape their business model. The Companies that want (or need) to be considered fair in the medium term cannot abstract from these concepts.

### It's a transparent way to reduce business risks.

Pay attention to services and goods purchased, perform a proper electronical waste disposal, reducing toxic cartridge ink usage it is a reliable way to create a consensus of ethical and social company behavior. This will be useful to face any unpredictable or adverse event with the collaboration of institutions and local community.



# CONCLUSIONS



## GREEN IT - HYPOTHESIS OR BUSINESS MAINSTREAM ?

*Several surveys and analysis report that IT managers do not believe that excessive energy usage is harming the environment but as today optimizing to have a GREEN approach toward energy consumption is a best practice. They follow the trend ... simply to be considered innovative.*

*The situation is quite a bit different when we look to company management where the cost reduction, the risk minimization and company reputation is a priority. Almost all international company are adopting, or at least evaluating, greening data centers plans due to the fact this is the most convenient and profitable way to adopt an environmental friendly attitude.*

*Looking to the list of activities a Company could perform to reduce energy consumption, GREEN IT probably has the most number of companies announcing this strategy as it is growing more each month.*



***Many doubts persist but it is evident a growing demand for GREEN IT***



# CONCLUSIONS

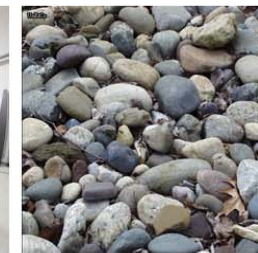


## GREEN IT - HYPOTHESIS OR BUSINESS MAINSTREAM ?

*Usually Companies move to GREEN IT rather than an IT manager decision for a global strategy involving the whole Company.*

*This top-down decision coming from senior management gives credibility and interest for the project across the company instead of considering it only a technical activity. This approach helps to export the process from the inner data-center (server consolidation, virtualization etc) to the employees desktop (PC, printers and peripherals "wise" usage).*

*A strong communication approach helps to sell the project across the company so everybody could be part of the process and contribute to its success. In this way also a single and easy action, as switching off the PC when departing going or printing draft documents of both sides of the page, creates a good and positive feeling among all employees that they are a part of the solution.*



**Not only IT but cross-company activities**



# CONCLUSIONS

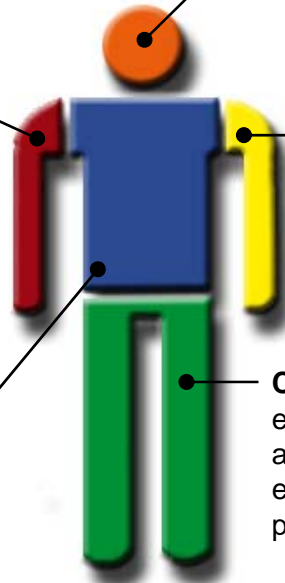


## GREEN IT – HYPOTHESIS OR BUSINESS MAINSTREAM ?

*There are several subjects potentially interested in run the Green IT business mainstream. These subjects are:*

**HW providers** – a way to sell new systems to replace the old ones and to implement a maintenance agreement

**IT Consultants** – a good opportunity to provide IT architecture re-engineering and turn-key services to optimize and secure the data centers.



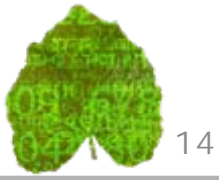
**Sustainable Business Consultants** – an opportunity to reach companies to offer their super visioning to the project

**SW providers** – new opportunities to create sw application to monitor energy consumption, waste track and management and natural resources utilization and allocation.

**CIO/IT managers** – to be part of whole company effort in order to minimize the CO2 emissions and, at the same time, a wonderful opportunity to reduce energy consumption and increase efficiency and protection of data center.



*What's in It for Me ?*



# GREEN IT - HYPOTHESIS OR BUSINESS MAINSTREAM ?

***Changing and innovating are not an option.  
 Your current business models will not be as  
 effective in the future.  
 Together we will find innovative solutions to  
 turn it around.***

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