

Report on integrating climate change issues in the curriculum

Bogdan Hoanca

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Because of a heavier than usually service load, over the past year, I only taught two classes, CIS 692 Management Information Systems Seminar in Fall 2007 and CIS 376 Management Information Systems in Spring 2008. In both classes, I discussed sustainability issues in general (not only climate change). In particular, I focused on technologies that can reduce energy consumption for large computing systems. The approach was two-pronged: on one hand to illustrate the large and growing energy costs for large computing users, and on the other hand to provide some examples of sustainable alternatives.

CIS 692 Management Information Systems Seminar (Fall 2007)

For CIS 692, I covered sustainability in a separate lecture (lecture notes attached). There was also one assignment, a case study on server virtualization. The case is available online at http://www.scaleoutadvantage.techweb.com/content/case_tellabs.jhtml. Probably the most telling paragraph in the case study is the one summarizing the impact of server virtualization on a particular company:

“So far, Tellabs’ use of virtualization has eliminated more than 100 physical servers, slashing \$150,000 a year in power and cooling costs along with \$250,000 in hardware maintenance. Holley estimates that Tellabs has also avoided having to buy 250 additional servers at a cost of \$2 million, thanks to its virtualized server farms.”

CIS 376 Management Information Systems (Spring 2008)

In CIS 376, students analyzed emerging technologies, some which have relevance to climate change and sustainability. Two papers are attached: one on server virtualization (same topic as above) and another one on server farms, highlighting the challenges and opportunities experienced by large installations of computing servers.

In addition to these research papers, I shared with the class several online resources that reflect on the impact of information systems and computing technologies on the environment. Some of the relevant links are listed below:

[Green IT overpitched by vendors, CIOs beware](http://searchcio-midmarket.techtarget.com/news/article/0,289142,sid183_gci1306101,00.html?track=NL-973&ad=629898&asrc=EM_NLN_3297593&uid=4857263) (http://searchcio-midmarket.techtarget.com/news/article/0,289142,sid183_gci1306101,00.html?track=NL-973&ad=629898&asrc=EM_NLN_3297593&uid=4857263)

[Carbon Capture](http://www.spectrum.ieee.org/mar08/6058) (http://www.spectrum.ieee.org/mar08/6058)

[A two-headed approach to green IT](http://searchcio-midmarket.techtarget.com/tip/0,289483,sid183_gci1302584,00.html?track=NL-974&ad=626569&asrc=EM_NLT_3165025&uid=4857263) (http://searchcio-midmarket.techtarget.com/tip/0,289483,sid183_gci1302584,00.html?track=NL-974&ad=626569&asrc=EM_NLT_3165025&uid=4857263)

[Green IT payback a must for midmarket CIOs](http://searchcio-midmarket.techtarget.com/tip/0,289483,sid183_gci1304451,00.html?track=NL-985&ad=628667&asrc=EM_NLT_3234308&uid=4857263) (http://searchcio-midmarket.techtarget.com/tip/0,289483,sid183_gci1304451,00.html?track=NL-985&ad=628667&asrc=EM_NLT_3234308&uid=4857263)

[Computer recycling: Dangers for even the well intentioned](http://searchcio-midmarket.techtarget.com/tip/0,289483,sid183_gci1305786,00.html?track=NL-974&ad=629896&asrc=EM_NLT_3280742&uid=4857263) (http://searchcio-midmarket.techtarget.com/tip/0,289483,sid183_gci1305786,00.html?track=NL-974&ad=629896&asrc=EM_NLT_3280742&uid=4857263)

[PUE tries for standardization as green IT metric](http://searchcio-midmarket.techtarget.com/news/article/0,289142,sid183_gci1305881,00.html?track=NL-973&ad=630504&asrc=EM_NLN_3289074&uid=4857263) (http://searchcio-midmarket.techtarget.com/news/article/0,289142,sid183_gci1305881,00.html?track=NL-973&ad=630504&asrc=EM_NLN_3289074&uid=4857263)