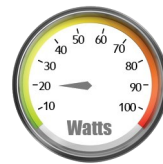


Dhaani Systems UC Berkeley Case Study

An IT End Point Energy Savings Solution



The Challenge

In 2012, The University Of California, Berkeley created a new framework for sustainability, launching its Energy Management Initiative (EMI). The object of this framework is to permanently reduce the amount of energy the campus uses. Taking the lead on the EMI, the IT Manager for the UC Berkeley Mechanical Engineering department wanted a solution that would have minimal impact to the user experience, yet provide optimal energy reduction and savings.

How We're Different

Dhaani Systems has created the industry's first behavioral-based analytics solution for managing energy consumption of Desktop PCs, CAD/CAM Workstations, and Notebooks in large environments as in enterprise and campus wide infrastructures. The Dhaani Systems solution, known as DhaaniStar, consistently achieves 50-80% energy savings WITHOUT disrupting both user and organizational productivity.

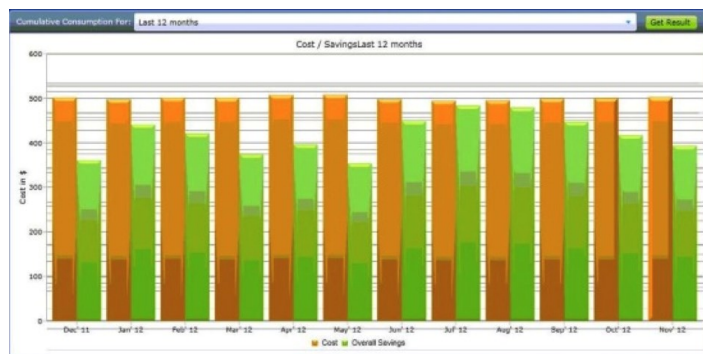


About the University of California, Berkeley

Shortly after California became the 31st state, The University of California was chartered in 1868 and its flagship campus – envisioned as a "City of Learning" – was established at Berkeley, on the San Francisco Bay.

Today, UC Berkeley is one of the world's premier public universities with a wealth of innovation, a world class faculty, and prodigious 22 Nobel Laureates to date. UC Berkeley occupies a 1,232 acre campus with a rustic 178-acre central core. From this campus, its academic community makes key contributions to the economic and social well-being of the Bay Area, the nation, and the international community.

In the of Fall 2012, there were 25,774 undergraduates and 10,125 pursuing graduate degrees.



Result: Low User Impact, Higher User Satisfaction

Being that DhaaniStar is agentless, the users saw little to no impact. However, the measured energy savings was very impactful. Dhaani Systems saved the Mechanical Engineering department 83% of its total energy consumption, while reducing the University's energy cost dramatically.

Another benefit of the Dhaani Solution is that it is profile free, making it unnecessary for the IT organization to configure policies, times of usage or service/application exclusions, all of this is easily managed via its behavior-analytics algorithms, enabling a true out of the box plug and play deployment.

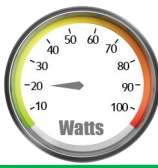
"The DhaaniStar has been a great solution for helping us reign in our IT costs while still providing a very agile and dynamic IT environment for our students, permitting 24x7 use of our lab computer systems."

*- Rene Viray, Mechanical Engineering Department,
University of California, Berkeley*



Dhaani Systems Product Brief

An IT End Point Energy Savings Solution



The Problem

Electricity use at the University of California was not a departmental expense, and was growing. The senior management of the University decided to make energy reduction a campus-wide objective. They gave out energy reduction quotas based on baseline usage for each department. The IT staff of the Mechanical Engineering department took this challenge as an opportunity for providing leadership in reducing electricity use by their IT equipment.

Conventional power management solutions for computers work in an autonomous fashion. In a large university department, it is impractical to determine what the duration of inactivity should be for any particular computer. Each machine is used by a diverse set of students and teachers with vastly different schedules, which may change on a daily basis. In addition, IT staff requires remote access to all computers, (frequently at night) in order to install emergency/routine patch updates and initiate such tasks as virus scan or back-up. All this has to be taken into account in order to find a power management solution that can be used effectively without disrupting current usage patterns or adding to the IT workload.

Prior Competitive Installations

There are multiple challenges in deploying energy management solutions. The IT staff surveyed other energy management solutions available at the time, and each solution was given an opportunity to demonstrate their capability. But each had many limitations, such as requiring agents on each of the systems in order to attempt to gain any energy savings.

Although the Mechanical Engineering department does have a remote desktop management system in place, the effort is to minimize the number of applications deployed by this system – as a new image has to be generated and distributed every time a new release of any one of the installed applications is received. However, the main problem is that once installed, the client software has to be manually configured for each machine. In a dynamic environment, where students can come and use any unused computer at any time, and class timings change every semester, IT staff found it too laborious to change these settings frequently in order to receive any significant energy cost reduction benefits. In addition, the list of such applications may also change over time, and it can become very labor intensive to keep the list accurate and up-to-date.

Similar barriers exist in most environments, where the client software is configured to save energy only for certain hours at night.

The next problem for current products is to make sure the target device is remotely awakened before the device is needed. All such products available today are client-server solutions which require at least 1 machine to be always up in each VLAN. This can be very unreliable and risky.

Why Dhaani was Chosen

DhaaniStar delivers well over 3-5 times greater energy savings compared to other solutions, and is the **ONLY** product capable of optimizing end-user satisfaction (EUS). The benefit of EUS is that it guarantees that a computer will not be turned off when a user is ready to work, and is a result of the daily behaviorism of that PC user. Furthermore, out of the box, Dhaani Systems is plug and play, and requires no user setup or installation of agents on any end point device. Other key factors include:

- No profiles to create or manage
- Typically 50–80+% energy and cost savings
- 100% user transparent
- 12 months or less ROI, guaranteed
- Patented *predictive analytics* technology
- Windows, Linux or MAC OS support
- Desktops, workstations, notebooks
- Utility company certified for green initiatives

About Dhaani Systems

Dhaani Systems is located in the Bay Area, just south of San Francisco, California. We are a leading-edge company who has created the industry's first patented network based IT end point energy management solution. Our philosophy is that a green solution for energy management should be an easy, seamless solution to install, and to use for immediate and significant energy savings, while making obsolete the requirement for tedious end point configuration.

