



The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

Final Copy of Case Study

Status:

Laureate

Year:

2013

Organization Name:

TellEmotion, Inc.

Organization URL:

www.tellemotion.com

Project Name:

Greenlite

Please select the category in which you are submitting your entry:

Sustainability

Please provide an overview of the nominated project. Describe the problem it was intended to solve, the technology or approach used, how it was innovative and any technical or other challenges that had to be overcome for successful implementation and adoption. (In 300 words or less.)

Our story began at Dartmouth College with TellEmotion's President Lorie Loeb and students in the GreenLite Dartmouth project. The hypothesis was simple: students would change behavior if they could see the impact of their consumption decisions. Real-time data would come to life with animated scenes, capturing the attention of the entire campus. With this idea, the first animations of a polar bear and her environment came to life. When energy use is low, the animated bear is happy. When energy usage rises or is higher than predicted based on historical patterns, the bear's health and happiness are endangered. Computer scientists, graphic artists, sociologists, engineers, environmental scientists and psychologists lent their perspective and best practice research to the project. With the April 2008 launch in residence halls across Dartmouth, reaction to the system was dramatic. Students fell in love with the bear, named her, encouraged friends to pay attention to her health and well being, and significantly reduced energy consumption. Usage from lighting and plug loads in dormitories fell between 5% and 34% in each dorm. The excitement at Dartmouth created national media attention as

outlets like *Newsweek* and *The Chronicle of Higher Education* profiled the program's success. Interest from other schools and businesses followed, leading to the creation of TellEmotion. At TellEmotion, we believe that the success of investments in hard assets and technology will always depend upon the final link: a person's willingness to make wise choices about their energy consumption. Our products close this final link by encouraging behavioral changes to achieve sustainable improvements in energy efficiency.

When was this project implemented or last updated? (Please specify month and year.) Has it incorporated new technologies and/or other innovations since its initial deployment? (In 300 words or less.)

The Greenlite project was first implemented at Dartmouth in October of 2008. TellEmotion continues to update the system, most recently in December 2012. We now monitor and provide feedback for both gas and water consumption. Savings are displayed in both dollars and as items important to the students/community. As an example, Dartmouth students see energy savings expressed as how many movie tickets or cups of coffee they could purchase at local businesses. In addition to supporting inter-dorm competitions we now allow goal setting (i.e., 10% savings) with daily reporting of progress against the goal. Students receive a "smiley face" for each day in which the goal is achieved. Energy (kilowatts) produced from Photo Voltaic arrays is captured and displayed as the number of students or buildings that the array is supplying power for. Education and best practices are conveyed via comic strips that engage the students or via "tips" pages generated by the students and uploaded for all to see and learn from.

Is implementation of the project complete? If no, please describe the project's phases and which phase the project is now in. (In 300 words or less.)

Implementation is essentially complete, although additional features and enhancements will be added as customers expand their use of the system.

Please provide at least one example of how the technology project has benefited a specific individual or organization. Feel free to include personal quotes from individuals who have directly benefited from the work. (In 300 words or less.)

Brooks School in North Andover has been a leader in reducing electricity use on its campus. The school invested more than \$60,000 to install computers and software that encourages changes in behavior from students and adults on campus. The school became a test site for pioneering technology developed by TellEmotion, a new company formed by students and faculty at Dartmouth College. In addition to installing 25 electric meters that monitor energy performance of buildings, TellEmotion's technology includes animated polar bears whose "happiness" is directly tied into real-time electricity use in each dorm. Brian Palm, the Director of Sustainability at the School, says that "when computers are left running or power strips not flipped off, for instance, the bear will fall into the ice cold water as displayed on monitors located where students see the impact of their behavior. After nearly a year, the school has seen that electricity consumption drops 10 to 12 percent when the bears are visible." Students have now begun a three-year effort through the Brooks Environmental Club to reduce electrical use on campus. In addition to its work in electric reduction, the school has also taken steps in recycling,



community gardens integrating local farm produce, green cleaning and an environmental science curriculum that uses real issues on the school campus. Brooks School also uses the system to measure the energy produced by their PV array, and displays that information to students in ways that are meaningful to them (not charts or graphs of kilowatts). A new dorm building at the school included digital gas and water meters that have been similarly integrated into the system, allowing students to make smart decisions about their heat and water consumption behaviors. See <https://www.brooksschool.org/podium/default.aspx?t=52562&a=62635&rc=1>.

Would this project be considered an innovation, a best practice or other notable advancement that could be adopted by or tailored for other organizations and uses? If yes, please describe that here. (In 300 words or less.)

We believe the project to be innovative and a notable advancement that is being adopted by other organizations. It is innovative in using animations and real-time data to show people their energy consumption in a meaningful manner, allowing them to make informed decisions and to see the results of those decisions "right now" rather than in hours, days or weeks via reports of electricity bills. The real-time feedback loop in which your decisions impact the well being of an animated character truly motivates people to change their behaviors. At Miss Porter's School (Connecticut) the seniors used their hard-earned senior gift funds to implement the system in all seven residence halls. During the first 3 months of operation the students reduced energy consumption by 25%. The School CFO called the gift and system an "environmental endowment" that will benefit the school for many years. The system was customized for use by a Fortune 500 company to measure and display energy consumption in 25 research labs located in Massachusetts and Texas. New measurements and goals processes were implemented. Lab and facilities managers, who could for the first time could see energy consumption details, reduced their annual energy costs by more than \$100,000, a savings of more than 10%.

If there are any other details that the judges should know about this project, please note them here. (In 300 words or less.)

Our system measures and displays energy consumption information but motivates changes across the gamut of sustainability behaviors. We conducted research in 2009 at Dartmouth College via student focus groups. Pre-launch 64% of students didn't think about the environment when doing everyday activities. Post-launch 68% adopted good energy behaviors and 52% adopted other good behaviors such as recycling, taking shorter showers and turning down the thermostat. For our customers, no other single action has produced such multi-faceted results, making our system the cornerstone of their sustainability programs. Customers effectively using our system achieve a full payback in less than three years. The business customer with research labs that is referenced above achieved full payback in less than one year.