

# Energy Optimization Application Brief



## Do you have any idea how much energy your employees are wasting?

**Pervasive Computing from Sentilla: Analyzing and automating energy resource utilization to ensure your facilities run at peak energy performance.**

### Business Challenge

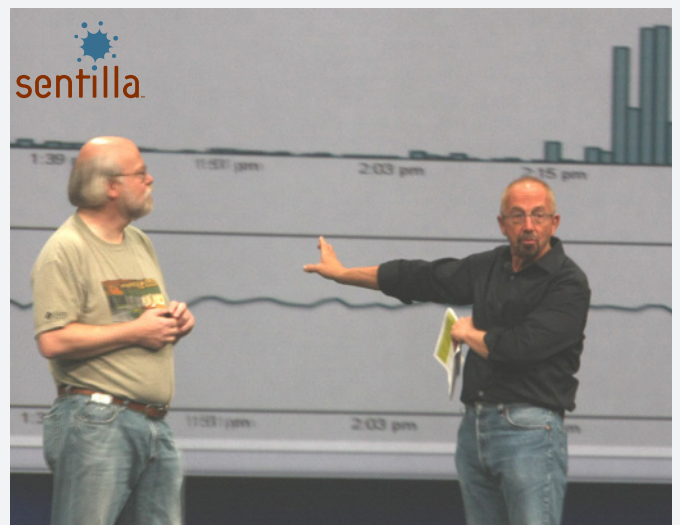
With greenhouse gas emissions and the cost of oil on the rise, more and more companies are looking to increase the efficiency of their facilities while reducing the impact on the environment. Energy consumption data is not enough. To fully optimize their energy resources, business owners need to know more about the behavior of the facility's occupants and their interaction with the environment. Are lights turned off when people leave a room? Is the temperature in each room adjusted properly when the room is full or empty? How do the conditions change throughout the day? With accurate information about the facility's energy consumption and actions of occupants, business managers can show a relationship between the two and take steps to reduce environmental resource use while improving the comfort and performance of the employees. In fact, business managers can even automate the process to ensure that resource usage is always operating at peak energy performance.

### Sentilla Solution

Sentilla's pervasive computing solution achieves this energy optimization by using tiny interconnected computers to monitor and analyze the environment of facilities as well as the occupants' behavior. With this information, business managers can analyze the information to determine where energy can be saved. These business rules are put into use by Sentilla's pervasive computers, which automatically download new rules wirelessly whenever they are available. This allows business managers to optimize their resources

## Java Powered Pervasive Computing Solution

Demonstrated daily at JavaOne



Sentilla, a Duke Award winner and JavaOne Show Device, was commissioned by Sun Microsystems to deploy its pervasive computing solution at the Moscone Center in San Francisco during the JavaOne 2008 conference. In addition to the wealth of information and control it provided, the Sentilla solution demonstrated the power of Java-enabled pervasive computers when embedded in the world around us.

*"We have enough data to establish new patterns of behavior."*

--John Gage, Chief Scientist & Founder, Sun Microsystems

and to run a more efficient and environmentally-friendly facility. Sentilla installed one such solution at JavaOne 2008.

Sun Microsystems asked Sentilla to come up with a solution that analyzed attendee behavior and correlated it to the energy utilization at the Moscone Center in San Francisco. In just one month, Sentilla designed, developed, and deployed a pervasive computing solution to accommodate this request.

Sentilla's solution monitored and analyzed 15,000 attendees across two convention halls covering 700,000 square feet.

How it was done:

- On session room door frames, Sentilla mounted small pervasive computers that used infrared technology to count people coming in and out of the rooms.
- Sentilla deployed pervasive computers throughout the convention center to measure electricity usage, lighting, humidity, and temperature.
- Business rules analyzed the environment at each pervasive computer. Those rules were updated daily, wirelessly, over the air.
- Sentilla designed a web portal to view the data and provided a dashboard where the information was

correlated and summarized for monitoring and reporting.

- Sentilla tested and deployed approximately 200 pervasive computers throughout the convention.

### The Results

Sentilla's pervasive computing solution measured the movement of attendees as they entered and exited sessions, and gathered environmental data including temperature and lighting. Using this information, Sentilla devised a direct correlation between the flow of people and environmental conditions. Sentilla's system made resource utilization improvements based on the analytics.

The information was so relevant to the theme of the show, "Java + You," that it was a spotlight at each daily keynote during the JavaOne Conference.

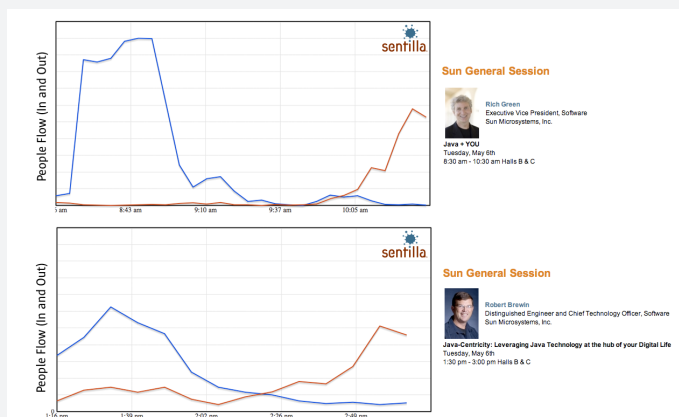
### Summary

With Sentilla's pervasive computing solution, business managers can increase the efficiency of their facilities by operating in a way that reflects the needs of people. With this information, businesses not only optimize the energy they use, but can also reduce environmental impacts and improve.

If you knew the energy profile of your facilities and the needs and movement of its occupants—would your facility, or in this case, your event, run more smoothly, economically, and efficiently?

Sentilla has demonstrated that the answer is yes.

## Resource Utilization at Sun's JavaOne Developer Conference



In this example, Sentilla used data from two general sessions to understand the behavior of conference attendees. Analysis of the conference environment by Sentilla's pervasive solution led to an improved attendee experience, insight into the popularity of conference activities, and more effective use of resources at the conference center -- thereby saving energy and money.

For additional information, visit [www.sentilla.com](http://www.sentilla.com) or email [sales@sentilla.com](mailto:sales@sentilla.com)

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