The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

Final Copy of Case Study

LOCATION:
Cary, NC, US

YEAR:
2011

STATUS:
Laureate

CATEGORY:
Innovation

ORGANIZATION:
Duke University

ORGANIZATION URL:
http://www.duke.edu

PROJECT NAME:
SAS OnDemand for Education: Sustainability Management helps Duke University Measure Institutional Sustainability

PROJECT OVERVIEW

In 2008, Duke University's Sustainability Office recognized the growing challenge of measuring and reporting campus sustainability, including metrics such as energy consumption and greenhouse gas emissions, for a multitude of internal and external stakeholders. At that time, SAS began discussions with Duke University, recognizing a common commitment to sustainability at both Duke and at SAS. Sustainability leaders at both organizations acknowledged the need for colleges and universities to utilize a solution that could help them track and manage their sustainability efforts at a holistic level. In 2007, SAS developed software that is designed to help organizations do just that, but it was not specific to the diverse needs of an educational institution. Because colleges and universities don't often have the IT infrastructure or the resources needed to maintain an emerging business solution, the SAS Education Practice began developing a purely hosted software offering designed to help colleges and universities track and manage their entire sustainability efforts, including certification processes, government reporting, greenhouse gas modeling or predictive analysis. This solution is called SAS OnDemand for Education: Sustainability Management. The SAS solution complements guidelines set forth by AASHE, an association of colleges and universities that are working to create a sustainable future, and allows institutions to have a centralized reporting, tracking and management system to ensure that their scarce resources can focus on sustainability goals and objectives. Because the SAS solution is hosted, Colleges and Universities will send their data directly to SAS via an FTP process or the information can be entered online via a web data entry tool. Because the data garnered for sustainability reporting and inventories is so vast and is often managed by other departments, the sustainability staff often spends needless hours "wrangling" data from these various departments and entities. Often the data is incomplete or incorrect, so data validation becomes a task that takes time away from their sustainability projects and goals. With the SAS solution, users have a centralized location to view and enter data. Using SAS, Duke University now has the data

integration, advanced analytics and timely reporting capabilities that enable educational stakeholders to take decisive action and make immediate impacts on the global sustainability imperative. The solution helps to automate data collection and reporting efforts for the university's Greenhouse Gas inventory and the Association for the Advancement of Sustainability in Higher Education STARS (Sustainability Tracking, Assessment & Rating System) assessment. It also provides tools to analyze building energy use and unique data that the university has gathered through an online carbon calculator for the campus community, and makes it easier to manage data collection and respond to assessments. The SAS solution provides Duke with a holistic look at all of their sustainability efforts across the institution, from their AASHE STARS reporting to their energy and emissions. With SAS OnDemand for Education: Sustainability Management, Duke can easily communicate sustainability reports to their various constituents in a variety of formats from web based portal application, to emailed reports, or dashboards on their mobile device.

SOCIETAL BENEFITS

This solution enables educational institutions to measure, manage and report on administrative, research, curriculum and economic indicators, reducing environmental risk and increase educational awareness of climate change. It provides insight into consumption of natural resources helping institutions understand drivers of GHG emissions, water or water in their activities or services.

PROJECT BENEFIT EXAMPLE

With the SAS Solution, the Duke University Sustainability Office recognizes value in three core areas: Greenhouse gas modeling: Provides Duke with detailed energy data, transportation fuels data and offset data. With the solution, SAS analyzes Duke's consumption data, applies standardized emissions calculations, and shows the carbon "hot spots" throughout the institution. Previously, the data collections and analysis was manual, time-intensive, and error prone. Today, they have a monthly view of the Duke's data by building, by department, or by square foot. This data is stored in a sql database and reports are generated using SAS's OLAP technology. Reports are available via the web for stakeholders to access as well as drill into the data for more details. Sustainability Performance Reporting: Duke has just submitted and achieved Gold Status in the AASHE STARS Program. Duke would like to utilize the certification process to manage their sustainability goals and efforts holistically with their other sustainability reporting requirements such as the Green Scorecard and their own internal sustainability goals and objectives. Having the STARS framework with the SAS system allows Duke to set goals for both the AASHE STARS certification process as well as create stretch goals, or compare themselves using benchmarks. They can also combine STARS metrics with other metrics from their Climate Action Plans or Sustainability Strategies. SAS has incorporated the AASHE STARS metrics and calculations into the solution to allow colleges and universities to keep a database of their metrics and text fields. By having this central database, this will eliminate the need for duplicate reporting and will dramatically increase reporting efficiency due to automated processes of gathering and submitting data. Analytics: The SAS Solution is unique as we bring in over 35 years of core analytics to help institutions understand not just how they performed, but give them the capability to model the future. Duke can use the analytics to optimize their sustainability efforts. For example, if Duke decides to install solar thermal hot water applications or purchase energy credits, what will the impact be on their total carbon footprint over the next 5 years? Using "what if" modeling, Duke understands correlations in their data and then predicts performance based on those correlations. They can then change the data to reflect an

anticipated change in process (bus routing) or building expansions and understand how that will impact their greenhouse gases, or impact their budgets, goals or objectives.

IS THIS PROJECT AN INNOVATION, BEST PRACTICE? Yes

ADDITIONAL PROJECT INFORMATION

SAS OnDemand for Education: Sustainability Management has played a critical role in helping Duke University measure institutional sustainability activities using education-oriented methodologies and protocols (AASHE, ACUPCC, GRI). The quality of data and resulting analysis from SAS' powerful data integration and analytics capabilities has helped the University take better advantage of its existing investments in operational systems and databases. Not only can institutions manage and forecast the finances and resources needed to achieve the desired outcomes across the enterprise and within each department, they can now prioritize institutional strategies and align funding for innovation, environmental program development and faculty and students accordingly. The solution also helps to ensure transparency with institutional constituents and organizations such as the ACUPCC. By establishing an integrated, consistent source of quality information, the intuitive technology binds initiatives to a common sustainability framework that allows alignment across all areas of the institution from student engagement and education to institutional administration and local communities. Integrating sustainability into higher education practice and curriculum will not only render a healthier planet, but will attract socially and environmentally minded students, procure new sources of sustainability grant funding and garner the support of alumni and neighboring communities. But before college and university presidents who are ACUPCC signatories can determine with confidence which programs will contribute to their goal of climate neutrality by 2050, they must first overcome the challenges of tracking GHG emissions beyond the capacities of simple spreadsheets and manual reporting. SAS OnDemand for Education: Sustainability Management responds to this need by simplifying data collection and providing actionable insight for meeting the global sustainability imperative..