THE GLOBE PROGRAM

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GLOBE, sponsored by NASA, supports 30K organizations with a new portal framework

In Brief

INDUSTRY:
Government

COUNTRY/REGION:
United States

USE CASE:
Public Website,
Collaboration Platform,
Content Management System

KEY FEATURES:
Supports 30,000 sites and 35,000 registered accounts,

International base of users representing 116 countries,

Complex organization and permissions hierarchy,

Operating in cloud-based hosting environment,

Improved workflow that allows complex hierarchical publishing model,

Mobile responsive site

globe.gov

> **We are excited to be able to build a new system to help the GLOBE program continue its amazing work with students and teachers around the world.**
>
> Alex Kim, Chief Systems Engineer, SSAI

Results

- 5,000 new website users
- 20% jump in web traffic
- Significant cost savings with move to cloud hosting

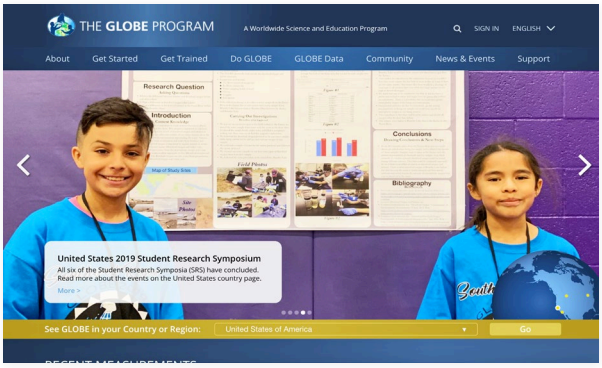
Worldwide Scientific Discovery

The Global Learning and Observations to Benefit the Environment (GLOBE) Program is a worldwide hands-on, primary and secondary school-based science and education program founded on Earth Day 1995. Sponsored by NASA and NSF and in coordination with the Department of State and NOAA, GLOBE is implemented in 116 countries, including the US. GLOBE promotes the teaching and learning of science, enhances environmental literacy and stewardship, and promotes scientific discovery. GLOBE also supports students, teachers and scientists worldwide to collaborate with each other on inquiry-based investigations of the Earth system.

Liferay

Upgrading Fifteen Years of Legacy Systems and Data

The GLOBE data and information system (DIS, including web interface) originally utilized a variety of technologies established over 15 years of operations, which became difficult to maintain and enhance. GLOBE and its partners wanted to develop a new, modern and collaborative environment, while maintaining the content, features and legacy data associated with the original system. The new framework was required to support over 30,000 organizations and over 100,000 monthly visitors with a role structure that provided appropriate permissions and controls for a large community of international users.



A Modern Approach to Content Management and Collaboration

NASA wanted a new approach to redesign and rebuild GLOBE's DIS. The team at Science Systems and Applications, Inc. (SSAI) was selected to manage the project.

They chose Liferay Portal as the primary solution to replace the legacy system and provide new features to help revitalize the program. Liferay provided integrated user management, content management and collaboration within an enterprise-quality architecture.

Liferay supported scalability and the ability to operate in dedicated, virtualized or cloud based hosting environments. The ability to integrate J2EE web-based technologies easily into a portlet allowed for customized solutions and applications where needed.

Liferay also offered the ability to integrate with backend legacy systems while creating a new and consistent look and feel across GLOBE.gov. GLOBE's Liferay solution has proven the ability to handle serving nearly 30,000 individual organizations and associated pages, as well as supporting a complex organization and permissions hierarchy. On top of the large number of organizational pages, GLOBE serves 100,000 individual customizable user pages with the scalability to handle more as the program grows. Liferay's language support has also provided capabilities which support GLOBE's multilingual international audience.

Through Liferay's modular Software Development Kit, the development of plugins was easy to build and maintain. The SDK Plugins enable SSAI to distribute plugin development and plugins' individual enhancements. The ability to develop hooks into Liferay's core systems supported customization of GLOBE.gov's website features as well as development of migration tools for transferring 15 years' worth of user and organizational information.

2013 Website of the Year

Since initial rollout, the GLOBE website has added over 5,000 additional user accounts and has seen the average monthly traffic increase by 20%. Scaling has not been an issue. A year after deployment, GLOBE moved to a cloud hosting environment, resulting in significant cost savings – something which was not possible with the previous legacy architectures. This made GLOBE one of the first Liferay clustered environments in the cloud. Liferay awarded GLOBE

the 2013 Pulse Award for Website of the Year, an award that honors Liferay customers that deliver exceptional web experiences to their users.

In 2015, GLOBE upgraded their website to Liferay Portal 6.2. Liferay's workflow capabilities have allowed GLOBE to manage a complex hierarchical publishing model that works with their regional sites. They also launched a new brand look and feel, including real-time animation features in the site's visual data displays. Finally, the site is now responsive and more mobile-friendly, and there are multiple apps available for GLOBE protocols that use Liferay's single sign-on feature.

GLOBE's future development plans include creating a low-bandwidth site for countries that still utilize dial-up. They plan to create an API that will allow other people to access GLOBE's public data as well, furthering their goals of promoting worldwide scientific discovery.