

Remote Students Collaborate Online to Win Engineering Awards

Re-Engineering Australia Foundation offers web-based tools to 35,000 students for long-distance design project.

Summary

Customer Name:

Re-Engineering Australia Foundation

Industry:

Non-profit education

Location:

Pennant Hills, New South Wales

Number of Employees:

5

Challenge:

- Provide highly interactive web-based collaboration tool for student competitors
- Allow students to work in teams over large geographic areas
- Facilitate communication with professional engineers at global industry partners

Results:

- Expanded reach of national engineering competition to 35,000 students
- Enabled Australian teams to dominate international competition
- Maximized staff and financial resources of small organization

Solution:

- Online solution deploys easily to thousands of students
- Application-sharing features allow students to remotely control engineering machinery
- Video capabilities enable international webcasts of competition events

Challenge

The Re-Engineering Australia Foundation (REA) is a nonprofit organization that works to encourage children and young adults to pursue careers in engineering and related technical fields. To carry out its mission, REA creates and administers programs to spark interest in engineering, including the “F1 in Schools” program.

Each year, Australian students involved in the F1 in Schools program compete against three million other high school students representing 20 nations in the worldwide F1 in Schools Technology Challenge to design, test, manufacture, and race miniature CO₂-powered balsa wood Formula One (F1) cars.

Because Australia is a large country located far from global industry partners, REA faced unique challenges in trying to help F1 in Schools teams collaborate with each other. “The F1 in Schools Technology Challenge encompasses so many different aspects of engineering that students not only work with each other, but also rely on guidance from professionals in the industry,” says Craig Hingston, marketing and media manager at REA. “Schools in Australia can be literally thousands of kilometers apart, and the companies we work with can be on the other side of the globe. To help our students compete effectively, bridging those large distances was absolutely essential.”

To reach more youth across Australia and enable them to succeed on an international stage, REA decided that a web-based collaboration technology would have to be at the core of its programs. “We needed to find a tool that would not only give young people the ability to share information across great distances, but also encourage them to cultivate a passion for the exchange of ideas that an engineering career demands.”

Results

Since implementing Cisco WebEx™ technology in 2004, REA has been able to expand the F1 in Schools program tremendously. The initiative now attracts 35,000 students across the country, and Australian teams have dominated the UK-based international competition. “In 2004, we sent two 16-year-old students to the world competition who collaborated on a project while living 1000 kilometers apart,” Hingston says. “They first met in-person while they were boarding the plane to England, and they went on to win third place and the Most Innovative Design Award. Since then, we’ve continued to win numerous awards and prizes. Using Cisco WebEx technology to collaborate has set our students apart and given them a huge advantage over other teams.”

In 2009, the F1 in Schools Technology Challenge offered the first-ever International Collaboration Award, a title that a joint Australia-Canada team won with ease. “Six students, four from Australia and two from Canada, used Cisco WebEx solutions to create a winning project while separated by over 16,000 kilometers,” says Hingston. “The fact that students can work together closely despite being so far apart highlights the immense power of Cisco WebEx technology to help people collaborate on a truly global scale.”

In addition to winning awards, students have used Cisco® WebEx solutions to learn from working professionals and get hands-on experience with industry-standard engineering tools. “We have corporate partners in the automotive, aerospace, defense, and other industries that use online collaboration solutions every day. We wanted to expose our students to this technology right from the beginning to show them how engineers work together in a real-world environment,” Hingston says. “By using Cisco WebEx applications, students can interact with engineers and engineering technology in the field, giving them valuable skills and knowledge they can use to excel at school and in their later careers.”

Just as important as winning competitions, Cisco WebEx technology has allowed REA to accelerate the growth of its F1 in Schools initiative while maximizing the organization’s limited resources. “We are a small organization with a limited budget, so traveling is cost-prohibitive and we don’t have many resources to devote to program administration,” Hingston says. “We’ve been able to reach students across the entire country and compete internationally because we can rely on a cost-effective, global communication tool. Without Cisco WebEx technology, our F1 in Schools program would not be as effective or successful as it is today.”

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— Craig Hingston, marketing and media manager, Re-Engineering Australia Foundation

Solution

When REA began looking for an online collaboration solution in 2004, the organization selected Cisco WebEx services based on the recommendation of Telstra, Australia’s largest telecommunications services provider. “Telstra demonstrated the features of Cisco WebEx technology, from its easy accessibility to its application-sharing capabilities, and we quickly realized that it was the ideal solution,” says Hingston.

Because Cisco WebEx technology is web-based, REA has deployed the solution to hundreds of schools and thousands of students across Australia without incident and without needing in-house IT staff. “Anyone can access the full suite of Cisco WebEx features easily from any computer with an Internet connection, so people who live in the remote, rural areas can participate,” Hingston says. “By minimizing the physical distance between students, Cisco WebEx services have eliminated the biggest barrier to their success.”

Now F1 in Schools competitors use Cisco WebEx solutions to work together in highly interactive teams, reviewing designs, providing real-time feedback, and even controlling manufacturing equipment remotely. “Because Cisco WebEx solutions are video-enabled and allow application sharing, teams can use computers at their local schools to control a computer numerically controlled three-axis router located hundreds of kilometers away and watch their cars being milled from blocks of balsa wood,” Hingston says. “With Cisco WebEx technology, students not only get hands-on experience with the latest engineering technology, they can also see their designs come to life.”

REA even uses Cisco WebEx video capabilities to produce competition webcasts for global audiences, and relies on Cisco WebEx Connect to provide 35,000 participants with self-administered access to competition documentation. “By using the wide array of Cisco WebEx features, we’ve been able to build a successful F1 in Schools community in Australia,” says Hingston. “Not only that, but we’ve also built a thriving program to educate the next generation of engineering leaders.”

Next Steps

In the future, REA will continue to use Cisco WebEx technology to facilitate its F1 in Schools program, and the organization plans to advocate for the use of Cisco WebEx solutions across the program worldwide. “We’ve used Cisco WebEx technology to give our teams a big competitive advantage, but every student around the world should be able to benefit from the opportunities that the solution provides,” Hingston says. “A global competition like the F1 in Schools Technology Challenge requires a truly global technology solution like Cisco WebEx services.”

For More Information

To find out more about Cisco WebEx, go to <http://www.cisco.com/web/products/webex/index.html>.

Product List

Cisco WebEx



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San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV
Amsterdam, The Netherlands

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