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CASE STUDY BENTLEY TRAINING CAROLLO ENGINEERS

THE BOTTOM LINE

Carollo Engineers invested in a Bentley training subscription to develop industry expertise, accelerate adoption, avoid travel costs, and make significant gains in productivity, as well as support new business ventures.

Average annual cost savings: \$87,143

THE COMPANY

Carollo Engineers is an environmental engineering firm specializing in the planning, design, and construction of water and wastewater facilities. It is the largest firm in the United States that is dedicated solely to water and wastewater treatment. Historically, Carollo has worked primarily in the western United States. However, in the last 10 years, it has expanded the areas it services by hiring industry experts, forming an applied research group, and developing design approaches that optimize project delivery. Carollo now boasts completion of many high-profile projects on a national level.

Carollo's mission is to provide quality engineering services, technological leadership, and successful business practices. It is committed to the professional development of its employees and provides them with extensive training on an ongoing basis.

THE CHALLENGE

In December 2004, Carollo decided to convert its 2D Autodesk-based production systems to a new 3D system for 150 individuals located in 21 offices spread across 12 states. This transition from 2D to 3D designs was necessary because of competitor-driven market changes and customer demand.

Prior to 2005, Carollo had been pursuing and testing available tools in order to move into the 3D world while still providing the 2D construction documents required to build projects. For its new system, Carollo required:

- Fast ramp-up time on the software resulting in the ability to start and finish projects more quickly
- The ability to avoid travel costs and losses in productivity associated with onsite training
- Extensive training on a multitude of different software applications
- A comprehensive training model — as opposed to a “one-size-fits-all” approach — with immediate, online, anywhere access.

TOPICS

Enterprise Applications

With so many engineers and a major transition to a new platform, travel costs for onsite training alone became a significant factor in determining a vendor and shifting to a new training model. Additionally, with the platform transition, training needed to be completed for all users in a short timeframe.

THE STRATEGY

In 2006, Carollo Engineers opted for Bentley's portfolio of integrated applications and the Bentley training subscription. Carollo implemented the Bentley training subscription to gain access to a more flexible training model that offers a variety of training formats including:

- OnDemand eLearning (subscription only). Bentley offers more than 1,100 self-paced, recorded video lectures and hands-on courses totaling more than 7,300 hours of learning.
- Virtual classroom learning. Live, hands-on training courses are delivered by Bentley experts in a virtual classroom online.
- Onsite classroom learning. Live, hands-on training courses are delivered by Bentley experts in local classrooms around the world to help users improve their skills in a traditional classroom setting.

A total of 680 courses were taken by Carollo employees over a 3-year period; approximately 5 percent of courses were taken on site.

KEY BENEFIT AREAS

Carollo's engineers became familiar with the various applications quickly, giving Carollo the ability to optimize use of the software. Timely use of the three training delivery methods was indispensable in achieving the company's business goals.

Direct benefits

Direct benefits Carollo achieved through the Bentley training initiative include avoided per-course training costs and reduced travel-related costs because employees are able to take advantage of Web-based training on an as-needed basis. They also include the administrative support staff that was redeployed to other activities because they are no longer responsible for managing training scheduling. The direct benefits calculated below are what Carollo would have spent without the training subscription cost.

Table 1. Average annual training cost savings

Average annual travel savings	\$20,333
Average annual training course cost savings	\$54,810
Avoided 1/5 personnel cost savings (administrative)	\$12,000
Average annual training cost savings	\$87,143

Indirect Benefits

Carollo achieved the following indirect benefits:

- Increased productivity. In addition to the direct benefit of redeploying one-fifth of an FTE, other unquantified increases in productivity were derived from less travel, meaning more on-the-job time for engineers.

- Thirty percent faster ramp-up time. Immediate, on-demand access to product training allowed engineers to improve their skills on the job so they could start and complete projects faster.
- Ongoing development of skills. Constant anywhere, anytime access to training allows engineers to quickly learn multiple software applications fostering a learning culture and driving a competitive edge.

BEST PRACTICES

Carollo found that it needed to customize Bentley training and create its own internal training modules for more specific needs. For example, Carollo uses Bentley's InRoads basic training for highway design, then created more specific training in-house for pipeline designs.

In general, vendor-supplied software training is a good starting point; it lays the groundwork for familiarizing users with the basics of a software application. Bentley training is a solid complement to a company's training needs. However, as with most software applications, more advanced, customized user training is inevitable — and should be anticipated with any deployment — in order to achieve business goals specific to a particular industry or company. To help, Bentley offers training customized to an organization's workflow and schedule, either onsite or in a virtual classroom.

CALCULATING THE BENEFITS

Nucleus calculated the average annual training cost savings — a direct benefit — by quantifying the overall number of courses Carollo employees completed over a 3-year period versus the aggregate non-subscription list price of those courses compared with the yearly training subscription.

Other direct benefits calculated included avoidance of travel and material costs associated with traditional courses. Additional savings were calculated taking into account courses available only through the training subscription model (on an estimated per unit basis at \$69 per course unit). Indirect benefits, including increased productivity of employees, were calculated based on the average fully loaded cost of employees (salary plus benefits).