Case Study

Southern California Edison use ClickSoftware
To Help Deliver a $9 Billion Capital Restructuring Program

The Company

Southern California Edison (SCE) grew out of various small companies that began working with power generation and transmission as early as the 1880s. Today it provides reliable electricity supply to more than 13 million people across a vast service area spanning more than 50,000 square miles in Central, Coastal and Southern California.

The Company

A number of high-profile utility supply failures in North America at the beginning of the millennium prompted SCE to proactively review its own operations and to take action to ensure it had a robust infrastructure capable of providing a reliable supply of electricity to its customers. In addition, all utilities in California were being closely monitored by the California Public Utilities Commission (CPUC) which, as the regulator for privately owned utilities, was keen to avoid potential failures.

As a result of the review at SCE, a capital budget of $9 billion was allotted across the transmission and distribution business unit to replace the aging transmission, substation and distribution infrastructure.

Aside from the sheer scale of the project there were many complex issues that impacted the day-to-day running of the business. SCE had to balance shorter cycle maintenance projects with the vast long-term program.

There were serious doubts whether the company's existing legacy systems and processes used for managing field crews could cope with the changing business landscape. Ken Bodenhoefer, Senior Manager, Business Process & Technology Integration at SCE, described the situation, "The company was supported by more than 75 separate, typically homegrown IT systems. The tool used for scheduling the field staff in our Distribution Construction & Maintenance organization was an 'Access Database on steroids.' Some even chose spreadsheets and whiteboards to manage their crews. There was no single way of doing the job; the design organization had their way, the scheduling department another, and this led to conflict and a general lack of integration across the business."

Benefits

- 360 degree view of field resource availability
- 360 degree view of capacity and demands for field resources
- Improved utilization of internal resources
- Improved consistency of scheduling and dispatch processes
- Improved relationships between interfacing operational resources
- Improved ability to meet customer satisfaction
- Ability to better monitor and manage costs associated to scheduling
- Improved coordination of resources to complete long cycle projects in tandem with short cycle maintenance requirements

There were many negative implications on business performance. One example was that as part of the design process, SCE's planners were required to develop quotes for supplying electricity to new business developments, including a timescale for work to be started. However, the planners had no predetermined cycle times to control their date inputs nor did they have visibility of field crew availability, so their timescale was based upon "best guess."

This approach was both inefficient and costly; the schedulers were often faced with a stressful scramble to put the resources in place to meet SCE's obligations to the client, regularly employing expensive subcontractors at short notice to meet the resource shortfalls which the designers had no view of. Customer satisfaction would be impacted whenever jobs were delayed putting SCE at risk of financial penalties for late delivery of services.

The lack of visibility and the way in which projects were subsequently planned meant there could be sharp spikes in demand for field crews followed by periods of inactivity; this "white space" of non-utilized

capacity was a further cost to the business. In addition, the lack of integration and visibility would often result in false starts (or a crew dispatched to a location prematurely). These demand peaks and troughs negatively impacted morale amongst the field crews, but more significantly caused issues between planners, schedulers and customer relationships.

Due to the size and nature of the work at hand, there are many timing and resource dependencies between different field crews that need to work in sync for tasks to be completed effectively. The old system made this almost impossible to orchestrate and the repercussions were damaging. As outlined by Ken Bodenhoefer, "Often a crew would turn up at a job to find they were not needed yet, or that the work they needed to be completed to do their jobs had not started, wasting their time, SCE's resources and annoying customers. The situation had to change."

The Solution

Given the importance of accurate scheduling to the business, SCE went through an extensive six month selection process starting with 13 potential suppliers. Evangeline Torres, Senior Project Manager, Business Process & Technology Integration at SCE stated, "It was a tough selection process, but it had to be, we wanted the best. We graded each solution based on a set of key criteria and ClickSoftware was the clear winner.

So confident was SCE of its rigorous selection process that it bought ClickSoftware's entire suite of products to help meet its short-term challenges and achieve its long term restructuring objectives.

The Implementation

SCE started by implementing ClickSoftware's scheduling & dispatch, and service analytics for the residential distribution business. This area was chosen because improvements in efficiency were most needed here. For example, a replacement program was needed for some of the poles carrying cables to SCE's neighborhood customers; in some instances they were 40 or 50 years old and constituted considerable potential for failure.

Bodenhoefer said, "Make no mistake, automating a process that has been performed manually by resources who perceive themselves as expert at managing resources is a very difficult one. The change management aspects were enormous. However, the benefit of a fully integrated system with the ability to proactively manage work load and resource capacity has been worth the growing pains that we have initially experienced." "Project success based on the number one priority of quality, has been very good, the new system is intuitive, powerful, and we are very pleased with the results."

ClickSoftware enables the Transmission and Distribution Unit to have 360 degree visibility of activities across the organization. SCE has a complete view of where field resources are and can allocate them using set rules that are based on the strategic priorities of the business. Should a rule be broken - such as the use of an incorrect allocation of work type to resources or excessive overtime – the system detects the root causeand brings it to theattention of the scheduling team. This promotes consistency and removes the likelihood of human error.

Designers providing quotes and timescales to potential new customers can now review schedules for resource capacity, and when they input requirements into their design tool, they have the ability to integrate work order dates and work statuses with ClickSoftware.

Schedulers are getting an earlier view of the commitments designers are making, which means that if subcontractors are needed they can be employed with more notice and therefore at better rates. With

an improved view of future tasks, schedulers can shuffle resources as required. So for instance the system automatically reallocates resources from non-essential repair and maintenance, to high priority new business developments.

ClickSoftware's optimized scheduling allows SCE to utilize field crews more effectively; issues such as large gaps of unexplained "white space" no longer occur when optimized scheduling is used. In addition, issues such as excessive overtime are more easily identified and therefore are much easier to control and reduce. The visibility also provides better flexibility. If there were to be a slowdown in new business in two or three months, SCE would be able to reallocate internal resources as necessary and give subcontractors notice well in advance, eliminating possible penalty cancellation payments.

ClickSoftware is ideally suited to cope with the sophistication of such a large business. Automated and optimized scheduling allows SCE to instantaneously consider the priorities of the hundreds of jobs, the availability of multi-person crews, the skill sets they possess, travel time and the tools they have in hand when scheduling the distribution field crews.

Taking the example of erecting a new power pole, automated workflows alert and warn planners, equipment managers, material managers, schedulers and construction coordinators if there are any issues that need to be addressed prior to releasing the work to the field resources. ClickSoftware automatically and sequentially schedules the necessary field crews, one crew can be scheduled to set the pole, another to hang the transformer and one more to pull cable and energize the service. If a team in this cycle is no longer available the system automatically reschedules the job and reapportions the remaining crews to new tasks. This ability to consider many complex factors with strict objectivity reduces errors, lowers costs and improves customer service.

A second release of ClickSoftware integrated the system with SCE's ERP system (SAP) and expanded the scheduling capabilities to SCE's Transmission, Grid Operations, and Construction & Maintenance organizations, bringing the total number of field crews managed in SCE to 2,800.

With improved scheduling, SCE is now in a far improved position to meet future challenges. "In my mind ClickSoftware is the best business tool at our disposal to build flexibility into our business model and meet the infrastructure renewal requirements head on. We are glad we acted when we did and we are delighted we chose ClickSoftware" said Bodenhoefer. SCE has also implemented ClickSoftware's service analytics, and resource demand forecasting and capacity planning. Using operational and historical data collected in service analytics, senior executives will be able to accurately understand the impact of projects on field resources and use demand forecasting and capacity planning to plot the five to ten year landscape for field crews. This will include the ability to create and examine multiple "what-if" scenarios and their impact on the business, ideal for these challenging economic times and invaluable tools in helping complete the $9 billion restructuring program.

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