OVERVIEW

Company: Lake Shore Cryotronics, Inc.
Website: http://www.lakeshore.com
Country or region: United States
Industry: Manufacturing

Customer Profile

Lake Shore Cryotronics designs and manufactures measurement and control solutions for advanced scientific research. The privately held company has approximately 150 employees and is located in Westerville, Ohio.

Situation

Lack of a project portfolio solution made it difficult for the 50-person product development team at Lake Shore Cryotronics to effectively manage both new product development and sustaining engineering work.

Solution

The team now uses LiquidPlanner for all its work, including electrical design, mechanical design, firmware development, software development, user manuals, marketing literature, and manufacturing process development.

Benefits

- Ease of adoption and use
- More realistic task estimation
- Faster project delivery and more accurate completion dates
- Less wasted time
- Full visibility into resource utilization and constraints
- Improved communication and collaboration

Key Statistics (as of 5/17/2017)

- 61 users
- > 30 active projects
- 2,681 tasks
- 155 milestones
- 69 dashboards
- 524 dashboard widgets
- 20,979 timesheet entries
- 269 notes

Scientific Equipment Manufacturer Adopts LiquidPlanner for All Product Development

Priority-based project portfolio solution gives 50-member team full visibility into workload and schedules across its entire workload—including new product development and sustaining efforts

SUMMARY: At Lake Shore Cryotronics, a scientific equipment manufacturer, the lack of a project portfolio solution for project management made it difficult for the company's 50-person product development team to track and manage its complex workload. The company's move from Microsoft Project to LiquidPlanner gave the team a single view of resource allocation across all projects, including sustaining engineering work. The team can now quickly adjust to changing priorities, and is working together more effectively because LiquidPlanner pulls the entire team into the project management process—in a way that's easy and natural for all. Other benefits of the company's move to LiquidPlanner include ease of adoption and use, more realistic task estimates, faster project delivery, more accurate project completion dates, less wasted time, full visibility into resource utilization and constraints, and improved communication and collaboration—all of which the company expects to contribute to a better bottom line.

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>
> - *Rob Welsh, Development Process Manager, Lake Shore Cryotronics*

Company

Founded in 1968, Lake Shore Cryotronics develops, manufactures, and markets measurement and control sensors, instruments, and systems for precise measurement and control of temperature and magnetic fields. Users of these products are typically scientists, physicists, and researchers in universities, aerospace, government, and corporate R&D labs, with applications that range from electronics and clean energy to nanotechnology and deep space.

Challenge

The product development team at Lake Shore Cryotronics consists of about 50 people, including engineering technicians, design engineers, manufacturing engineers, software developers, and managers. At any time, the team's workload includes roughly a dozen new product development projects, as well as a continual stream of sustaining engineering efforts. All team members support multiple new product development projects and are expected to ensure that sustaining efforts remain a high priority.

Prior to mid-2016, the team lacked a comprehensive solution to all its project management needs. At the time, the company used Microsoft Project Professional. Each project resided in a standalone Microsoft Project file, and the team's single Development Process Manager was the only Microsoft Project user. "We chose to have only one person manage schedules due to the complexity of Microsoft Project," says Rob Welsh, who assumed the role of Development Process Manager a few years ago, when the company decided it needed a full-time focus on project and process management.

Even with a purpose-built tool in the hands of a dedicated project manager, the team faced several challenges:

- The first issue, which is typical to most companies involved in technical product development, was **completing projects on time and on budget**. "Our new product development efforts are typically focused on delivering something that didn't exist before, meaning we're likely to face technical obstacles that can be hard to define and scope up-front," explains Welsh. "Such projects often also include elements of conceptual research, which can be especially difficult to estimate."

- Because all projects share resources with other projects, lack of a project portfolio solution that provided **a single view of resource allocation across all projects** made it difficult to plan and manage projects effectively. "Most team members are required to manage multiple priorities, and our previous project management solution did not provide a convenient way for them to do that—or for people to have visibility into the priorities of other team members," says Welsh. "This made it even more difficult to plan and manage projects to ensure timely completion."

- These challenges were complicated by the **planning and management of sustaining engineering tasks**, which are more reactive by their nature—and thus not formally planned. "We make it a priority to support and improve existing products, and to provide excellent customer service in other ways," says Welsh. "Without all work being done by the team captured in one place, we had little visibility to what sustaining engineering efforts were underway,

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- Another major challenge involved **time tracking**. All team members reported the time spent on their individual tasks to Welsh, for recording in Microsoft Project. In addition, the company's "official" time tracking is captured in its ERP system, so everyone also had to record their time in that system. This resulted in duplication of effort for all team members, as well as inconsistencies between the two time-tracking repositories.

Under this approach, during the planning phase for each new project, Welsh would work with that project team to define a work breakdown structure and project schedule, upon which Welsh would create a new Microsoft Project file. As the project progressed, Welsh used Microsoft OneNote to collect status updates from the project team. "We utilized OneNote to maintain project records and help keep project schedules updated," explains Welsh. "Every week, for each project, I would create a table of current tasks in OneNote and ask the resources to update their progress and estimate remaining work. After I received that information, I used it to update the project schedule."

The major problem with this method was that projects often deviated from the original plan very quickly. Technical issues, changing priorities, new tasks, and changing resource availability all resulted in the tasks that Welsh was asking people to update in OneNote each week not matching what they were actually doing. "The result was lower participation, inaccurate schedules, and reduced visibility to what people were working on," says Welsh. "The only way to counter this was with frequent meetings that pulled entire project teams away from their work and negatively impacted project completion."

As Welsh points out, all of this wasn't due to poor planning or coordination. For example, during the course of a project, the team would often find a way to deliver greater value for customers. "The problem we had, however, was that we had no good way to determine the effect of that change on that project or other ones that shared the same resources," Welsh explains. "This made it difficult to examine the tradeoffs, if any, and make quick yet fully-informed decisions on how to reallocate resources."

Solution

Lake Shore Cryotronics now uses LiquidPlanner for all its project management needs. "Our adoption of LiquidPlanner was something that I initiated; there was no mandate from management," Welsh explains. "We had already tried several approaches—to the point that most people were experiencing 'changing project management methods fatigue' and there was much skepticism with trying yet another method."

"Upon visiting the LiquidPlanner website, I immediately jumped to the FAQ section, read the paragraph on 'Why should I give up on traditional project management tools?', and was intrigued by how well it described our current situation."

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However, Welsh was dealing with the issues the team faced on a daily basis, and wanted to find a better way. "I kept looking for a project portfolio solution where we could view all projects and tasks in a single place, a collaborative platform that was easy to use by all team members, and a tool that people would want to use because it would help them get their work done," he recalls.

Finding the Best Tool for the Job

Before Lake Shore Cryotronics adopted LiquidPlanner, the company had considered purchasing a copy of Microsoft Project Professional for each team member. However, that approach was deemed suboptimal. "We felt it would be too time-intensive to train everyone on Microsoft Project, and wanted to avoid the inconsistencies from project to project that would come with multiple people using it," says Welsh. "We also briefly considered Microsoft Project Server, but nobody was thrilled with that approach—including our IT team—based on all the added complexity, licensing costs, and training costs that it would require."

The team also considered other approaches, including each project leader maintaining their own schedule using a simple Gantt chart tool or Microsoft Excel, SharePoint-based project management software, and whiteboards with daily huddles.

Welsh found LiquidPlanner through a simple web search. "Upon visiting the LiquidPlanner website, I immediately jumped to the FAQ section, read the paragraph on 'Why should I give up on traditional project management tools?', and was intrigued by how well it described our current situation," he recalls. "Upon closer inspection, LiquidPlanner offered just what we needed: a priority based scheduling engine, a project portfolio solution, and accessibility for all team members to enter and update tasks."

After signing up for a trial subscription and confirming that LiquidPlanner could indeed meet his team's needs, Welsh took his recommendation to upper management. Their response: "We now have a new requirement: whichever solution we adopt has to integrate with our ERP system for time tracking."

Fortunately, LiquidPlanner was built to do so. Welsh spent a few hours designing such an integration, had it setup and tested in less than a week, and received the go-ahead to purchase LiquidPlanner subscriptions for all team members in June 2016.

A Comprehensive Solution

Welsh immediately began moving project schedules from Microsoft Project into LiquidPlanner. One such project is the company's new [Model 155 Precision I/V Source](#), which Lake Shore Cryotronics expects to ship in the third quarter of 2017. "This project is going very well and we will have the instrument available in

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Q3 2017, which meets our goals for project completion," says Welsh. "LiquidPlanner has been very helpful in keeping this product development effort on track. In addition, we believe LiquidPlanner has contributed to innovation and quality of the product by promoting collaboration and teamwork."

Today, Lake Shore Cryotronics manages all product development using LiquidPlanner. This includes more than a dozen new product development efforts, which typically range from 3,000 to 5,000 hours of effort. "Users took to LiquidPlanner right away," says Welsh. "The entire team is using it for all aspects of our work, including electrical design, mechanical design, firmware development, software development, user manuals, marketing literature, and manufacturing process development."

All sustaining engineering work is also captured in LiquidPlanner, giving Welsh and the rest of the team full visibility into how that work fits into the overall plan—and clear direction on priorities. "We have two main sections within LiquidPlanner: new product development followed by sustaining work," Welsh explains. "If a sustaining task requires higher priority than product development work, we simply move that sustaining work into a priority package."

Key LiquidPlanner features that the team is taking advantage of include:

- **Best case/worst case estimates**, which help the company take uncertainty into account when estimating the tasks within a project.

- **Automatic resource leveling**, which prevents the overallocation of resources across one or more projects.

- **Priority-based work scheduling**, which automatically recalculates the most likely completion date for all tasks and projects, taking into account past history as well as each resource's availability, priorities, vacations, and other factors. "Priority based scheduling is very useful when sharing resources across projects with constantly changing priorities," says Welsh.

- **Individual project workspaces**, which display each team member's assigned tasks in order of priority, enabling them to always know what's most important. Project workspaces also provide tools for **attaching comments** to tasks, **uploading documents** tied to tasks, and **subscribing to updates** on tasks.

- **Timesheets**, which enable the team to capture who worked on what as each task is completed—and then automatically import that data into the company's ERP system on a weekly basis.

- **Dashboards**, which provide at-a-glance visibility into project status, including early warning signs that a project may be headed off-track. "Today, all major projects have a dashboard which is used to run status meetings," says Welsh. "In addition, we can provide access to non-users via the dashboard guest feature."

- **Advanced reporting and analytics**, which helps the team identify problems early and determine whether it's in danger of missing a commitment.

"LiquidPlanner is our first project management tool that actually helps everyone plan and organize their work and get things done," says Welsh. "Plus, I no longer need to manage a dozen project schedules manually. Team members simply enter the time they spend on each task via their individual project workspaces, and LiquidPlanner dynamically keeps all project schedules up to date."

Benefits

The product development team at Lake Shore Cryotronics is benefiting from its use of LiquidPlanner in many ways. Schedules and tasks are continually updated throughout the day, with at-a-glance visibility into potential issues and estimated completion dates. Ranged estimates make it easier to estimate tasks, enabling people to apply a best case/worst case approach instead of trying to come up with a single, hard number. All team members now have a consistent method for planning their work, always know their top priorities, no longer need to report their hours in two places, and are able to collaborate more effectively.

"LiquidPlanner is enabling us to work together more closely as a team," says Welsh. "The key enabler: users have access to relevant project data, including the ability to add, modify, and report on tasks. It's much more efficient than our previous process, where I had to query all users on a weekly basis, collect their information, and then update the project schedules manually. It also promotes more accurate and complete schedules because it takes the 'middle man' out of the process. In the past, with weekly updates, schedules were usually out of date. Now, with the LiquidPlanner scheduling engine always running, our schedules can be considered 'real time.'"

Ease of Adoption—and Use

According to Welsh, his team's adoption of LiquidPlanner was fast and easy. "I provided training sessions to small groups as we brought each project into LiquidPlanner, using a modified version of the LiquidPlanner Playbook as a training guide," he explains. "A 90-minute training session was adequate to get users started, after which I provided ongoing support as needed."

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The feedback Welsh has received from team members has been overwhelmingly positive. "People find LiquidPlanner intuitive and easy to use," he states. "I believe part of the reason for this is that it is designed to be used in an environment like ours; the ability to quickly adjust priorities, create and modify tasks, and estimate work in ranges are all things that people like. Team members also appreciate the ability to view and manage their work on the "My Work" page, and having a single place to record their time."

More Realistic Task Estimation

Ranged task estimates, a key feature of LiquidPlanner, are making it easier for users to estimate the time it will take to complete their tasks. "Before, users often found it difficult to estimate their work," explains Welsh. "Many of our tasks have a lot of variables, especially tasks related to research or testing, so task owners would hesitate to apply a single number to the hours required. If a task involves testing and things go well, the work will be done in a shorter amount of time. If issues are found, and rework/retests are needed, it will take a bit longer. Ranged task estimates in LiquidPlanner provide a natural way to account for these variables."

Faster Project Delivery and More Accurate Completion Dates

Using LiquidPlanner, the product development team at Lake Shore Cryotronics is able to meet its commitments faster and more accurately. "In the past, we were unable to maintain accurate plans and schedules," explains Welsh. "Resources were often unclear on their priorities, which led to inefficiencies. LiquidPlanner enables everyone to manage their own work and gives project leaders visibility into to what each person is doing—leading to better decision making and faster task and project completion."

Completion dates are also more accurate now. "With our previous method, the project schedule did not match what was happening on the project—and if your schedule doesn't represent your project, you can't make accurate predictions," says Welsh. "LiquidPlanner is helping us get better at this; we still have room for improvement, as we have many complex projects, but we now have the right tool to help us get there."

Less Wasted Time

For Welsh, the priority-based scheduling engine in LiquidPlanner is a huge time-saver. "Being able to quickly prioritize or reprioritize tasks and have all other tasks automatically rescheduled saves a great deal of time," he says. "Having all projects and tasks in a single workspace is also beneficial; our previous method of managing a separate Microsoft Project schedule for each project was very time consuming."

Welsh estimates that, in the past, he spent 75 percent of his time collecting and maintaining project data. This left only 25 percent of his time to focus on other responsibilities, such as process management. Today, it's the other way around, with Welsh only spending 25 percent his time on project management. "LiquidPlanner has enabled me cut the time I used to spend on 'busywork' by two-thirds," he says.

LiquidPlanner also allows the product development team at Lake Shore Cryotronics to improve efficiency by spending less time in planning meetings, discussions, and reviews. "Our use of LiquidPlanner easily saves us dozens of hours each month, which is time that can be redirected toward design and development work," says Welsh. "I estimate that this time savings equates to having an additional member on the team."

Full Visibility Into Resource Utilization and Constraints

With its new project portfolio solution, Lake Shore Cryotronics has greatly improved its visibility into resource usage and constraints. "With LiquidPlanner, we can very quickly look at an individual and see his or her planned work across all projects and tasks," says Welsh. "We can also use LiquidPlanner analytics to compare projects and quickly see where resources are needed. We had none of this in the past; the best we had were spreadsheets where managers provided estimates on what percentage of time each team member would spend on various projects."

Scott Yano, Vice President of Product Development at Lake Shore Cryotronics, also acknowledges how LiquidPlanner has enabled his team to centralize planning and resource allocation. "A great aspect of LiquidPlanner is the ability to plan, resource, and schedule our large product development projects in the same place as smaller projects and interrupt-driven tasks," he says. "LiquidPlanner gives us the visibility to flow resources to high priority tasks while seeing the impact that a change has on other projects."

Improved Communication and Collaboration

The collaboration features in LiquidPlanner are enabling the team to reduce its dependency on email—and tie discussions that used to be buried in email directly to the applicable tasks. "Many team members are using the commenting features in LiquidPlanner to communicate and provide task updates," explains Welsh. "In the past, these project artifacts would have been buried in emails, with little in the way of organization or visibility. Now, comments are tied directly to the tasks and items they're relevant to, in a way that provides visibility to everyone on the team."

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A Better Bottom Line

Although hard to quantify, Welsh believes LiquidPlanner will help Lake Shore Cryotronics to save money, drive sales, and ultimately increase its bottom line. "We're not really spending less on project management software, but we're getting so much more out of it than we used to," he explains. "However, if we can get our tasks and projects done more quickly and efficiently, we believe we'll save money in the long run. Similarly, we strive to be a leader in our industry—meaning that providing new and innovative products that meet our customers' needs is key to our success. If LiquidPlanner helps us achieve those goals, as it appears to be doing, it will definitely result in increased revenues and company growth."

Successful Transition to Real-Time Project Management

All in all, Welsh feels that LiquidPlanner has fully delivered on its promises. "After my initial review of LiquidPlanner, which included using it through the trial period and study of the training material, I came away with several expectations," he says. "I saw how it would enable us to better schedule and manage projects, adjust to changing priorities, involve all team members in project planning and tracking, and view and manage both new product development and sustaining engineering in one place. LiquidPlanner has met or exceeded every one of my expectations—with the improved collaboration we're seeing across the team as an unexpected benefit."

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About LiquidPlanner

LiquidPlanner is a fundamentally different approach to project management—offering organizations the only resource-driven online project management tool in the industry. Data-driven, human focused, predictive and realistic, LiquidPlanner gives leaders a better way to plan and execute on their projects and resources, and provides teams insight into schedules that are automatically updated, in real time.

For more information or to start your free trial, visit www.liquidplanner.com