



Ed Rennemann, CIO and VP of MIS,
Crate & Barrel, left, with George Firdling,
senior manager, POS

Rebel With a Cause

Ed Rennemann and his team are transforming Crate & Barrel's IT one line of code at a time

Ed Rennemann is a rebel. In an age in which common IT wisdom dictates that the best solutions are off-the-shelf solutions, he subscribes to the kind of do-it-yourself ethic that drove early pioneers in the computing field. And he's unapologetic about it.

"It's not a matter of thinking that homegrown solutions are the best response to any IT problem," the Crate & Barrel CIO says. "It's just that usually, I feel that we can build our own solutions to fit our needs better than anything else out there."

Though the roll-your-own mentality went out of style a long time ago, Rennemann and his team of 120 IT associates are leveraging it to great impact at the Northbrook, Ill.-based operator of housewares and furniture stores. The DIY ethic is guiding Crate & Barrel through a sweeping, multi-year IT initiative aimed at unifying the retailer's multiple channels under a single IT platform. Along the way, nearly every major system at Crate & Barrel is being replaced, from the warehouse and inventory-management systems to the POS.

Rennemann's history with Crate & Barrel goes back to 1983, when he helped deploy the retailer's first inventory-management system as a member of Andersen Consulting. Late that year, Crate & Barrel founder Gordon Segal invited Rennemann to join as director of MIS, with the aim of building the then-fledgling retailer's IT department from the ground up. Rennemann agreed.

Even back then, his emphasis was upon developing customized, proprietary systems for the retailer. But that was a matter of necessity, as packaged retail solutions were few and far between in the 1980s.

Rennemann remained at Crate & Barrel until the summer of 1990, when he left to begin his own retail-technology consulting firm. The development expertise he accumulated at Crate & Barrel proved an asset as he built custom solutions for his retail clients.

He maintained his ties with Crate & Barrel, occasionally performing work for them. The stage was set for his return in

1996, when the retailer tapped Rennemann to rewrite its catalog systems from the ground up. At the time, Crate & Barrel was weathering an unrelated IT crisis: Its IT director had just left



Crate & Barrel's new order and fulfillment application supports all its channels: Web, catalog, housewares and furniture

following an unsuccessful, four-year effort to implement a warehouse management system (WMS). The failed effort hurt data integrity, and worse, operations. The distribution center couldn't send merchandise to the stores without difficulty.

"Gordon came to me and asked 'Can you get me out of this mess?'" Rennemann says. He was brought in to lead a search for a new CIO. Forty-five candidates were contacted, but after he interviewed 12 of them, a member of the selection recommended that Rennemann apply for the job himself. Shortly thereafter, he was rehired.

"When Gordon brought me back, he said that Crate & Barrel's success has always hinged upon customer design and customer service. But that to succeed going forward, we'd have to be successful in IT, supply chain and cost management," Rennemann says. "He said he was bringing me on to take Crate

& Barrel's systems from mediocre to world class, because he felt that it would be crucial going forward."

The failing WMS wasn't the only challenge Rennemann faced. Crate & Barrel had become a victim of its own success, growing larger than its systems were ever designed to manage. "We'd made some good systems in the 1980s, but they were developed for a business that was a fraction of the size Crate & Barrel was in 1996," he says. "The business had also grown more complex. They had the housewares and the furniture stores, a catalog business, and on the horizon there were the Web and the electronic gift registry, plus Y2K. There were a lot of challenges we were facing down in IT."

Rennemann didn't have much help, either. At the time, the IT department consisted of four internal software developers and a few operations staff members.

The Crate & Barrel IT team, left to right: Chris Eyle, director, customer facing systems; Tom Kunkler, senior manager, customer order processing; Dawn Rozek, senior manager, financial architecture; Sheldon Lutte, consultant, technical architect; Kathy Robinson, senior manager, quality assurance; David Panchisin, senior manager, Web services; Ed Rennemann, CIO and VP of MIS; and George Firdling, senior manager, POS.



Rennemann's first year back at Crate & Barrel was spent stabilizing the retailer's systems and building an IT team that was more suited to the merchant's needs. He also addressed the retailer's WMS problems with a new implementation.

As Rennemann continued to analyze the retailer's infrastructure, it became apparent that the systems contained divides that led straight to customer inconvenience. "Our systems were siloed for each channel of the business, and as a result we had different business rules for our furniture offerings vs. our housewares vs. our Web site," he says.

These differences often manifested themselves in ways that were confusing for the customer. For example, the housewares department carried a few furniture items that were similar to items stocked in the furniture department. But if the customer ordered it in the furniture department, the inventory could be allocated in the warehouse and the delivery scheduled on the spot. Not so in the housewares department, where the systems did not have that level of integration into the distribution center. Also, shipping charges differed between the various channels.

"We found a lot of areas where we were fracturing our brand image. It was clear that wouldn't work going forward," Rennemann says. "Customers that shop with us through multiple channels see us as simply Crate & Barrel. They don't see us as just Crate & Barrel furniture, or housewares, or crateandbarrel.com. It was an obvious concern, especially because the customers that shop you through multiple channels tend to be your best customers."

That concern gave rise to a proposal for an ambitious, multi-year project Rennemann called cross-channel integration (CCI). The initiative, set forth in 2000, provided for the redevelopment of most of Crate & Barrel's systems, from POS to merchandising to order processing and more.

From the start, Rennemann planned on handling most of the development in-house. That approach is consistent with his do-it-yourself ethic, but he had more compelling reasons for going that route than personal preference.

"We figured we'd use a few commercial components, but we got board approval early on to build everything from scratch," he says. "I felt that was the best approach, because we were looking at so much change. Developing our own solutions gave us greater control over the management of that change. If we went out and got an enterprisewide package for a big-bang switchover, we'd be putting the company at risk."

Additionally, in Rennemann's view, there aren't many commercial solutions that match the needs of a retailer as specialized as Crate & Barrel. "There are lots of good specialty retail solutions out there for small-ticket hard goods, and for big-ticket hard goods, but our product selection is all over the map."

Rennemann put out an RFP for commercial solutions.

However, not only did none of the responses promise the functionality Crate & Barrel needed, but Rennemann's analysis was that it would be cheaper to develop in-house, especially because there would be no licensing fees involved. The retailer's IT team had grown to 84 associates by then, and this had become a more feasible option.

The first two phases of CCI, now completed, involved the development of a new WMS, and a new customer order-processing and billing system designed to support all of the retailer's channels. Now, Crate & Barrel is on the project's third phase: POS. The retailer received proposals from six POS vendors, including one that got as far as prototyping for Crate & Barrel and traveling to Northbrook to present a demo.

"It mostly looked great until the last minute, when they basically said they didn't think they could deliver the furniture functionality. That kind of defeated the purpose," Rennemann says.

There were other unique functionalities Rennemann wanted in a POS system, too. The most striking feature on his list was a dual display and interface that allows the associate and the customer to input information simultaneously. While the associate is ringing up the sale, the customer enters the delivery information herself on a separate screen. "There's a lot of self-service in the grocery and discount sectors. We're still a service-oriented retailer, but we thought some of the elements of self-service would translate well to our format," Rennemann says.

"All the POS vendors we spoke to told us it couldn't be done," he adds.

In 2003, Rennemann recruited George Findling to spearhead Crate & Barrel's POS development efforts as project director. Findling, who was with solutions provider Island Pacific at the time, had helped in the creation of one of Crate & Barrel's legacy POS platforms installed 10 years before. That platform was a DOS-based unit with limited memory and no hard disk. Its hardware had begun to fail by the time Findling was brought on board.

"They'd squeezed all the functionality out of it they possibly could," Findling says. "It was clearly time for something else."

The most vital requirement for Crate & Barrel's new POS system was that it be a single, unified system. As it was, the retailer's housewares and furniture departments relied on different POS platforms. POS units were frequently inconsistent and incompatible with each other even within the same store.

The foundation for eliminating that inconsistency was set with the earlier stages of CCI, in which the retailer installed a customer order and fulfillment application that would provide a unified back-end for POS in both furniture and housewares. Before, there was a separate back-end for each. The order and fulfillment application supports Crate & Barrel's Web and catalog channels, too.

Over 18 months, Findling and his POS development team coded a Windows XP-based application that provides traditional transaction-based functionality in the housewares department, and a more order-based interface in the furniture department. Findling describes the hardware as a vanilla IBM PC with stock peripherals, including Symbol scanners and Epson printers.

The homegrown POS was installed in two stores last October. After successful pilots there, the POS was deployed to most housewares stores in the Chicago, Boston and New York markets. Rennemann expects all 75 of Crate & Barrel's housewares stores to be on the new POS by July. The furniture store will get the new POS in 2006. Findling confirms that the POS project has come in under budget compared to what would have been spent on a packaged solution.

There is still plenty more work to be done on Crate & Barrel's CCI initiative, Rennemann says. Next on his list is upgrading Crate & Barrel's inventory-management and pricing capabilities. For that, he found that an off-the-shelf solution would do. A store-replenishment and demand-forecasting solu-

tion from Wayne, Pa.-based 4R Systems has been deployed in 14 housewares locations to date. Rennemann plans to include the remaining 61 housewares locations by August.

The application from 4R forecasts demand based on past sales history and suggests replenishment figures to store managers. Although managers are free to deviate from these suggested orders based on their own personal instinct, Rennemann says that manager compliance with the suggested orders is high. Crate & Barrel also is working with 4R on an installation of new markdown-optimization and DC-replenishment solutions, he says.

CRM is high on Crate & Barrel's agenda, too. Two major projects are in the works: the development of an in-house customer database and the deployment of a best-of-breed direct-marketing campaign management suite.

The customer database project is an outgrowth of CCI, Rennemann says. "When we first started talking about CCI and identifying the advantages we wanted, one of the first things we hit upon was increasing our knowledge of the customer. We'd outsourced our customer information database for years, but we felt that if we wanted to deepen our analysis of the data there, it would be best to bring the database in-house."

It also didn't hurt that internal research found that Crate & Barrel could host its own database with only half the cost it took to outsource, he adds. Rennemann expects the database to go live in early May. The direct-marketing campaign management suite is scheduled to follow at the end of the month.

In the meantime, Rennemann is getting plenty of support from within Crate & Barrel. "When Gordon asked me to come back to Crate & Barrel, I said that I'd be interested, provided they make a certain commitment to technology and doing it the right way," he says. "So far, I haven't been disappointed."

He adds that although sweeping, multi-year IT initiatives like CCI have fallen out of favor with report-minded boards of directors, CCI was an easy sell. "All we did was outline the pain points and costs we'd eliminate with this program. Even if we were just beginning CCI today and not five years ago, it would still be an easy sell. All you'd have to do is consider the alternative of living with these problems instead of fixing them." **RTQ**

—Dan Scheraga

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Crate & Barrel IT team plans to upgrade its inventory-management and pricing capabilities next.

