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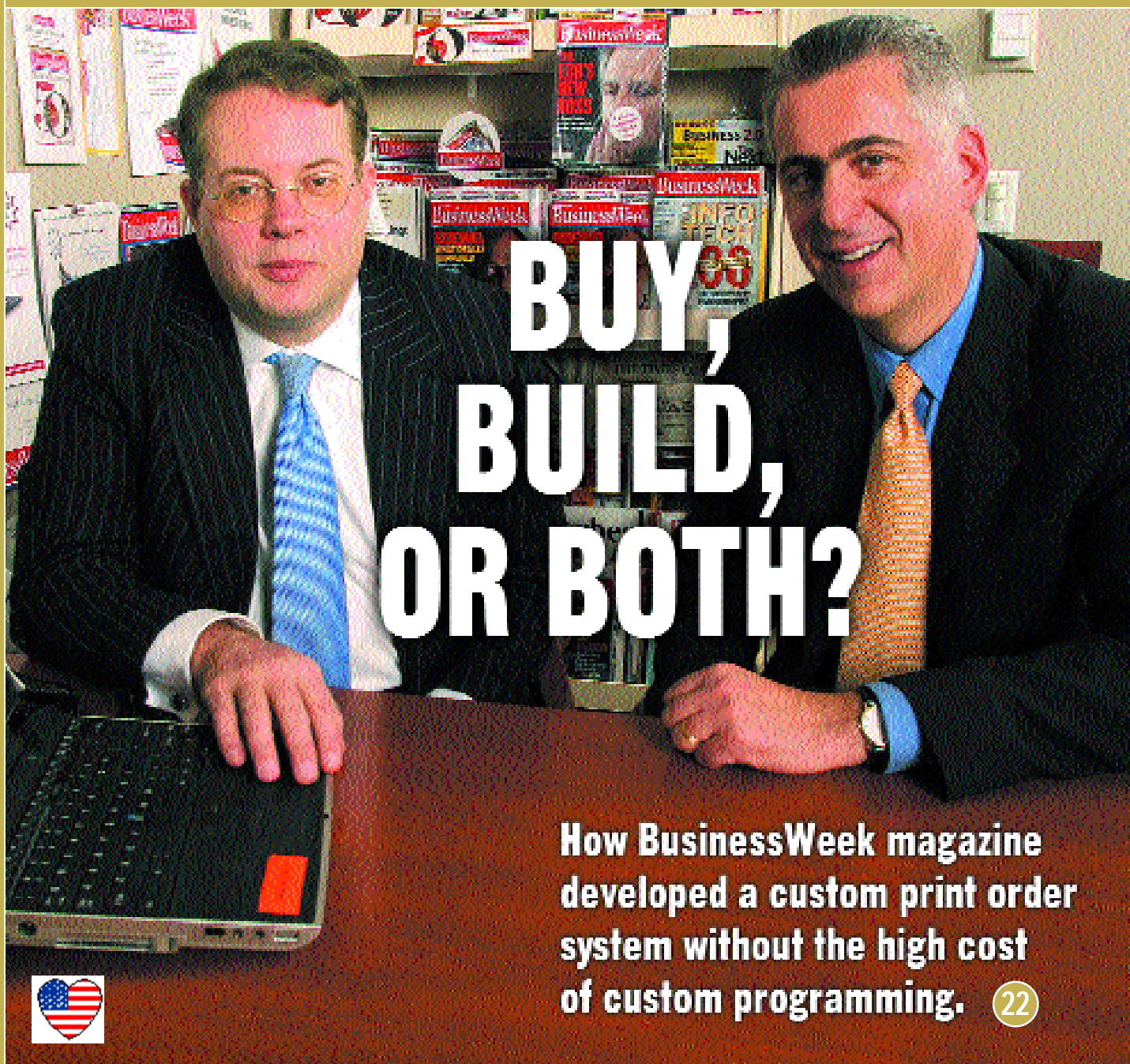**18**

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BUY, BUILD, OR BOTH?

How BusinessWeek magazine developed a custom print order system without the high cost of custom programming. **22**

Circulation

PRACTICING WHAT

BUILD, BUY, OR DO BOTH:
Pragmatix's Abram,
BusinessWeek's
Masterson, and their
teams built a completely
custom software solution
without reinventing
the wheel or coding from
scratch.

THEY PREACH

Blackstar

McGraw-Hill's *BusinessWeek* magazine brings its legacy print order system into the modern era, reaping a one-year 100% retrun on investment in the process.

By **EVAN SCHUMAN**

It was early 2001, the height of 'dot-com' euphoria. *BusinessWeek* magazine was then, as now, one of the most influential business publications. Millions of readers turned to its pages every week, steeped with tales of corporate stars exploiting the latest technologies to rewrite the rules of business.

But while *BusinessWeek*'s writers were telling the world of the latest software marvels, *BusinessWeek*'s production staff was living in the past. Circulation was working with a 20-year-old, mostly manual system.

BW's sales and circulation people were faxing instructions and phoning requests that would ultimately be hand-written, trafficked, and filed. The print order system itself was hardly computerized, running on aged 'green screen' terminals and PCs.

Employees manually, sometimes redundantly entered data into a handful of non-integrated programs, from *FoxPro* to *Excel* to *Admarc*. The databases didn't share data, so the information was fragmented and hard to manage.

"Things were really out of date," says Tom Masterson, VP and worldwide circulation director at BusinessWeek, in New York. "We were still printing labels [one by one] for some things."

Of greater concern was the system's reliance on a handful of 'key' employees who knew how to run the old applications. And one of those key employees was about to retire.

The old system "worked, but it was in danger of not working in the future," Masterson says. "We had a system that was very complex, very manual-intensive, and very dependent on one or two key people."

While the old system needed replacement, doing so would affect many departments within *BusinessWeek*, its corporate parent (McGraw-Hill), and partners along the print supply chain, which includes six different printing plants.

Four of the plants were in the U.S.—two R.R. Donnelley plants and two Perry Judd plants—one in Europe (Smeets), and one in Asia (Times Printing).

The magazine was distributed in 140 countries by two fulfillment houses, with a complex postal arrangement. The domestic service bureau at the time was EDS, in Plano, Texas (it's now Kable), with international fulfillment handled by QSS .

But while the need to modernize was acute, the sheer size, scope, and complexity of producing the weekly print order made the classic 'buy or build' decision an easy one. "There really aren't that many large weekly magazines with more than 1-million circulation, so there wasn't an off-the-shelf software option," Masterson says.

BusinessWeek would have to build—but they would ultimately go about the process in a singularly unique, and far more cost effective manner. First, Masterson had his print order team document their requirements, emphasizing that *BusinessWeek*'s new system would have to be easy to maintain.

At the same time, the *BW* team compiled a list of five software vendors with experience in magazine publishing. The requirements were then translated into an RFP, and sent to the five vendors.

In the final analysis, *BusinessWeek* went with Pragmatix Inc., Elmsford, N.Y., a consulting and technology services company for publishers. One reason: Pragmatix's *Print Order Management Solution* (POMS) offered the fast deployment benefit of a pre-fab package, with the flexibility of a custom-built solution.

The core Pragmatix software provides functions to reduce labor, mailing, and special handling costs. This included, for example, automating label instructions for the fulfillment service bureau, eliminating duplicate keying for special requests and traffic code assignments, eliminating paper labels, merging non-subscriber labels with the production run, automating *Impoze* inputs, and static edition codes that provide version consistency from issue to issue.

The key to Pragmatix's POMS flexibility is extensive use of tables and modular components that can be maintained by the publisher, without requiring programming. This makes it easy to custom-tailor the application to a publisher's workflow, and speed updates in response to evolving requirements, without having to rewrite and redeploy the software.

It also addresses common concerns with custom developed software, such as support, compatibility, and extensibility. By driving the application's workflow through data tables that can be managed and updated by the publisher, publishers avoid ongoing custom programming at high hourly rates.

"When people hear 'custom', they think work in existing systems will have to be scrapped," says Howard Stevens, Pragmatix's VP of software development. "The core of [our] application remains relatively the same.

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It's customized using a data-driven approach. It's not the [program] code that is being customized, but the underlying data. That means that the customer can easily customize and modify it at will."

This is in stark contrast with pre-fab approaches, and yet another reason *BusinessWeek* opted out of a canned product strategy. "With an off-the-shelf product, there is typically significant time shoe-horning it into existing systems," Stevens says. "With this custom [Pragmatix] system, those compromises are unnecessary."

Indeed, it was this blend of ready-made yet fully customizable software that sold *BW*'s Masterson on Pragmatix's approach. "My general theory is that I would rather not be in the custom software business, but Pragmatix proved themselves to be the exception," Masterson says.

The Pragmatix consulting team spent about six weeks at *BusinessWeek*'s New York headquarters to study the workflow. They watched orders come in and get processed. They met with multiple production managers. They examined the guts of interrelated systems. All the while, they were developing a model for the new approach.

Once they defined the workflow requirements and prepared implementation recommendations, the Pragmatix team had to sell their proposed approach to virtually all interested constituencies in the far-flung *BusinessWeek* universe.

This includes their six magazine printers and two fulfillment houses, along with editors, advertising,

manufacturing, distribution, and other departments. It wasn't an easy sale.

"The hardest part was getting the users to agree to the specs," Masterson says. "Each of the four major departments has its own needs. Everyone complained about the manual system, but nobody wanted to change."

Those fears are typical of many large corporations. "There was fear of an

unknown [and potentially] adverse impact to the overall production process," says Bill Dugan, a Brewster, N.Y., consultant that helped with the transition. "People would say, 'I'm getting the job done now independently of a centralized system. Will this cause new problems?'"

Adding to the internal resistance: *BusinessWeek* did not have a history of successful collaboration on projects. Department managers feared their input

would be ignored, that some other department might reign supreme, or that the project would take too long, Dugan says.

Managers also knew that any new system would temporarily impact data sharing with suppliers. Then there was cultural momentum, which, back then, did not generally embrace change.

"Putting out a large weekly magazine means very tight deadlines week in and week out for every department involved in the process," says *BW*'s Masterson. "People tend to be reluctant to mess with something that is working and getting the job done. It's the old saw about 'if it ain't broke, don't fix it.'"

Despite the concerns, the business case for modernizing the system, and the imminent retirement of a key employee, won the day. "I suppose we could have trained another individual to take over the print order, but I felt it was a good time to automate the process and upgrade."

Ultimately, Pragmatix helped the cross-disciplinary teams at *BusinessWeek* clearly define their requirements. For example, when the consultants discovered how certain operations were dependent on key employees, they worked to extract that knowledge through debriefings. The knowledge was then integrated into the new system.

"A key element in the software design was the need to interface effectively with two domestic and international service bureaus, as well as *BusinessWeek*'s production management system," says consultant Dugan.

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"Pragmatix spent the many weeks needed to meticulously define the dataflow requirements for all these related systems."

The result was not only "seamless interfaces that eliminated redundant keying of identical data," according to Dugan. The process also speeded recovery of the $125,000 *BusinessWeek* invested to define and acquire the system. Indeed, the software paid for itself in the first year through cost-savings and added efficiencies, *BW*'s Masterson says.

The resulting custom software not only costs less to operate than the old, mostly manual workflow. It's also faster and more accurate than the process it replaced—and it's not dependent on any key personnel.

Perhaps the change with the biggest impact is how the Pragmatix solution makes it possible for *BusinessWeek* to eliminate paper magazine shipping labels. This became an issue whenever the circulation department had to deal with a special request from an advertiser or editor.

Say an editor is speaking at a conference in Seattle, and wants 1,000 copies of the latest issue sent to the show. This used to require manually filling out forms to intercept the print run, and have 1,000 issues packaged and shipped out separately. It was expensive and time-consuming from both a labor and postal perspective.

Now, using a Web-based form in the software built by Pragmatix, *BusinessWeek*'s production people can have 1,000 copies bundled with the new address, and dispense with the problem in minutes.

The new system also delivers higher data accuracy by reducing typos and automating delivery decisions, Masterson says: "For special copies, it was confusing [as to] what delivery

method should be used. Was it for a speech? To go to a key CEO? Due overnight or a week later? This [new system] automates and sorts out how things go."

Production workers can also automate requests. "[The software] lets requesters set up standing requests for, say, fast shipment of the issue to the CEO of a big advertiser for three months," says Bill Abram, CEO of

THE NEW VIEW: Screen shots of *BusinessWeek*'s custom print order system, now online.
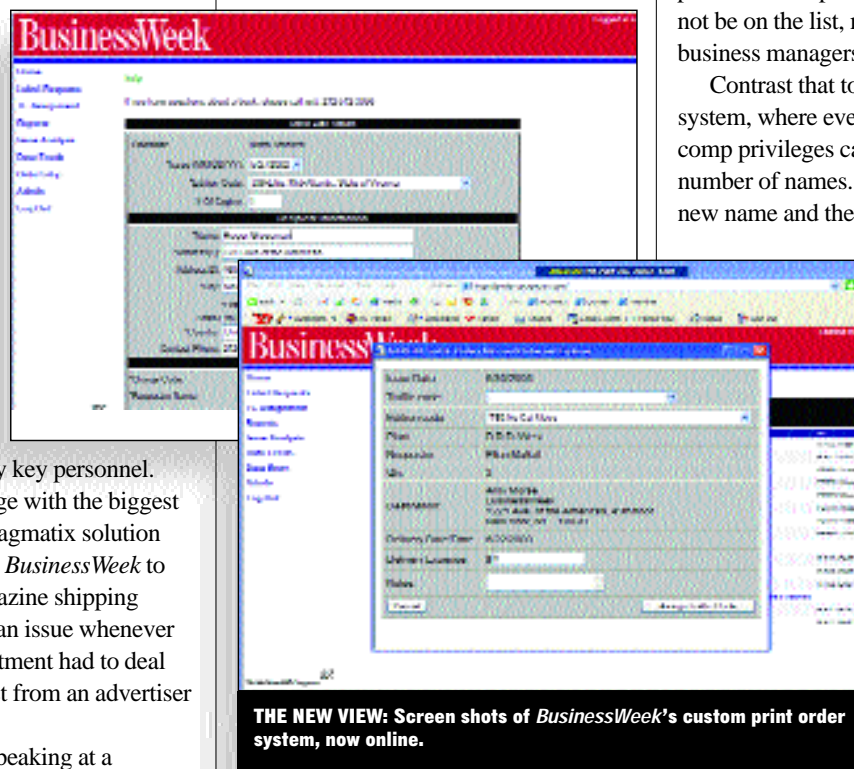
Pragmatix. "For the first time, they can set up that request automatically."

Even 'special requests' involving fewer than 20 magazines are automated. "*BusinessWeek* was preparing labels by hand, individually affixing them to the magazine, and mailing them separately," Abram says. "We set it up so the label information is sent electronically to the printer, merged with the subscriber labels, then ink-jetted onto the magazine cover."

Eliminating the extensive manual handling produced savings in time and money. In addition, these special copies can now be integrated into larger mailings, presorted, and mailed to gain the maximum postal discounts.

Comp lists are another thorny aspect of special requests that the new software ironed out. Employees (publishers, editors, sales reps) rarely bothered to delete names and addresses that were no longer needed or were ineligible for comps.

The result: comp names might stay on the lists indefinitely, driving up printing and postage costs. Yet there was no simple way to identify why a particular comp name should or should not be on the list, making it risky for business managers to delete them.

Contrast that to *BusinessWeek*'s new system, where every employee with comp privileges can sponsor a fixed number of names. If they want to add a new name and they've reached their maximum allocation, they must first delete another name. And when an employee leaves, their replacement is given their predecessor's comp list, and can add or delete names at will.

Masterson also sees editorial and production advantages gained from the ability to push later deadlines, and better accommodating breaking news and last-minute advertisers. And because the application resides on Pragmatix's servers, it can be accessed securely from anywhere in the world, via a Web browser.

The fact that the system is based on a remote managed server also makes it attractive, Pragmatix's Stevens says. The browser-based software doesn't have to be manually installed on every PC or Mac, and the Web-based user experience is intuitive, reducing training costs.

With a one-year ROI, faster and more accurate results and a truly customized package, *BusinessWeek* has finally discovered the dot-com joys it's been reporting about for years.