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Innovators

Data mining as rocket science

Usama Fayyad, CEO, founder, digiMine Inc., Bellevue

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DigiMine Inc. co-founder and CEO Usama Fayyad treats his accomplishments modestly.

In just over a year, Fayyad and his company's co-founders - former Microsoft executives Bassel Ojeh, who serves as digiMine's COO, and Nick Besbeas, executive vice president of sales and marketing - have turned the world of data warehousing and data mining upside down by approaching it as a business service.

The Bellevue-based company looks at what the business user needs to know about customers and suppliers, rather than beginning with collected information and trying to sort it into categories.

"We took the approach of saying, 'It doesn't matter what technology you're using, it doesn't matter what it looks like, it doesn't matter who's putting it together,' " says Fayyad. "It's very obvious, but nobody else was doing it, asking what business users were looking for. That was what we rolled out as digiMine."

Scott Carreiro is director of information technologies at Allrecipes, a Seattle-based dot-com that operates 30 different food-related Web sites.

"On a daily basis we send (digiMine) 80 different log files and they send us back one report the next day," he says. "We can scratch out on a napkin what we want and they go and take the trouble of figuring out how to do it."

Coming up with novel approaches to solving intractable problems is nothing new for Fayyad.

Even before he had earned his Ph.D. in engineering from the University of Michigan in 1991, he led a team at the prestigious Jet Propulsion Laboratory at Cal Tech that revolutionized how astronomers distinguished stars from galaxies in the farthest reaches of space. By applying data-mining procedures to the pictures of the night sky scientists were taking at the Mount Palomar Observatory, they helped solve a problem that astronomers had been struggling with for decades.

"That was the first time that I actually witnessed how powerful data mining algorithms that fish through the data and find models by looking at a lot of variables and a lot of dimensions were," Fayyad says. "Suddenly we had a much better view of the universe than anybody

had ever had, so suddenly I found myself with 30 or 40 publications in astronomy, and I didn't know anything about astronomy."

By the time Microsoft managed to lure him away from JPL, in 1995, Fayyad had received several awards and become editor of a number of academic journals in the area of computer engineering and data mining. From 1995 to 2000 he founded and led Microsoft Research's Data Mining & Exploration Group.

During that time he developed data-mining prediction components for Microsoft Site Server and scalable algorithms for mining large databases and customized them for Microsoft SQL Server 2000.

"It's probably one of the times in Microsoft history where they were technologically ahead of Oracle and IBM. That's something that I'm very proud of," he said.

Fayyad said he realized the potential of data mining the more he worked with it. While being courted by Microsoft, he realized that if astronomers - who "live their data and know everything" about it - could benefit from his approach to data mining, business people who have raw information and understand it far less were a potent market. Another bell rang when he began to ask Microsoft's biggest database customers how they were using the information they collected.

"We'd show them what data mining could do for them," he says, "and they'd say, 'You know, we can't use this because it would take us three to four months to just get the data together in the right format for these algorithms to work.' "

Then Fayyad, Ojeh and Besbeas got together.

"(We) said, from a database perspective, everything is broken. Data mining was not taking off in the industry, which was bothering me a lot because all my life was about data mining," he recalls.

In March 2000 they started their new company. Less than six months later they rolled out their service as a commercial product with about 40 employees and eight paying customers, all of whom had been signed up as beta-testers for the product.

Since then, the staff has tripled. The number of users has risen by more than 500 percent and company revenues have gone from about \$1 million in the second half of last year to a projected \$1 million per month by the end of this year. Prices start at \$7,500 per month per client and vary by the amount of data sent to digiMine, as well as the complexity of information requested.

Customers install a "Slurper" on their Web server that gathers and sends information to digiMine, usually late at night. DigiMine takes six hours to process the information, providing reports in a form that business users can understand by the next morning.

Sarah Van Dyck, vice president of marketing at etrieve in Portland, Ore., says digiMine's knowledge of how the data would be used was a strong point in helped persuade her company to choose digiMine.

"They don't come out of the database world and 'How do you build an engine?' but rather have been marketers themselves in a high-tech marketing organization," she says.

Usama says that in addition to having the right ideas and the right approach, timing has been a key to digiMine's success so far. DigiMine closed its second round of venture capital with a \$20 million cash infusion in September, before the dot-bomb explosion made money so much harder to find.

Since then, even the slowing of the economy has worked to digiMine's advantage.

"A lot of companies didn't think about outsourcing before, or thought, 'We can afford to invest a few million dollars to build our own data mining and data warehousing solutions.' That's unthinkable for them today," says Fayyad. "Yet, they still need systems to help them deal with all the data they collect that is going to waste and not helping the business. That has helped us tremendously."

A number of high-profile companies have signed up with digiMine in the last year, including J. Crew, Microsoft bCentral, Microsoft Corp., AT&T Wireless and CBS Marketwatch.

"Think of your favorite names in the Fortune 100 and they're probably digiMine customers," says Fayyad.

At the same time, he says, the contracting economy has meant that a number of competitors have fallen by the wayside. In the consolidation, digiMine has absorbed one Silicon Valley firm, Correleations, and passed on a few other acquisition targets.

"Even in the tough times," he says, "we've proven that we can go ahead and get customers and get contracts. Hopefully, if we make out through these times, we'll come out much stronger when the times get better, when there's fewer players playing."