author who didn't ever want to leave the house. He was agoraphobic. He was great with the games, but that didn't work out. I once had someone embarrass me in a meeting. You need people who the developers are going to feel comfortable with."

That's especially important because even the best players get stuck. "Sometimes I'll get caught on something for hours and go to the development team for help," Hodgson says. "Sometimes it turns out there's actually no way to do it yet. That's always fun."

A firm grasp of a game's technical minutiae is a must. There's a very specific difference between the plasma gun and the plasma rifle, and readers want to know exactly what it is. Plus it all has to make sense. "I'm good at games, but I was hired because I'm a good writer and I'm fast," Stratton says.

A firm grasp of a game's minutiae is a must. There's a very specific difference between the plasma gun and the plasma rifle. Readers want to know exactly what it is.

Partly by coincidence, Hodgson, Stratton, and Stratton's brother, who also writes for Prima, all live in Portland. Hodgson moved there first, a few years ago—Prima contracts allow freelancers to work from homes anywhere in the continental United States—and the others gradually drifted in that direction. They sometimes work together, which makes the intense work less solitary. But they hardly ever play games together when they're not working. "When I'm off, I don't play video games," Stratton says. "Any desire I had to play has been beaten out of me." ●

COLON PLAN

Rediscovering Ranganathan

A long-dead Indian librarian's 70-year-old data classification system is all the rage online today. A look at the man behind metatagging.

By **David Weinberger**

HERE'S A migraine-inducing problem: Pat Howard, VP of Strategy, Marketing, and Operations for IBM Business Consulting Services in the Americas, needs to build teams quickly for projects that frequently span multiple countries. With 25,000 possible consultants to draw from, the task might be manageable if Howard could sort them according to one or two criteria. But he has dozens to consider. "If an appropriately qualified individual isn't available today but is available three weeks from now," he asks, "am I willing to pay a little bit more for someone with the same qualifications, or do I need to defer the start date? Or if I find somebody who is in the right geographic area, does the reduction in cost of travel offset the savings from using a lower-cost country?"

S.R. Ranganathan, the man who made iTunes possible.

Howard recently assembled a proposal for a big insurer, a project that used to take weeks, in two days.

IBM is hardly alone in using faceted classification to organize masses of data. The system is showing up all over the place, from the website for Barnes & Noble, which searches for customer requests among its thousands of products, to a manufacturer of petroleum and gas equipment that has 25 million parts in its database.

But this elegant, versatile new technique isn't new at all. This classification system was invented in 1933 by an Indian named Shiyali Ramamrita Ranganathan, who intended it as a means for organizing libraries of printed books.

Relatively few print libraries outside of India use his system, but since the turn of the millennium Ranganthan's invention has grown in ways that its creator could never have imagined. It's a building block of one of the hottest areas in media, metatagging (see related story, page 34).

How about language skills? Expertise in particular products? Certification in one or another banking system? Your head might hurt just reading these questions.

To relieve his headache, Howard and 6,000 others at IBM go to what the company calls its "open marketplace for business consulting services." Here they sort potential consultants instantly by any and every criterion and in any order. Want to find all consultants at a particular price per hour and then sort them by location? Find all the SAP experts in Ohio available next Thursday? Howard and others can do this and more because the open marketplace uses a *faceted classification system* (from Boston-based Endeca Technologies) to sort by any conceivable category in any order.

And it does it quickly.

THE EUREKA MOMENT

Ranganathan was born a Brahmin in

the tiny town of Ubhaya-vedantapuram in southern India in 1892. He became a teacher of mathematics and physics with so little interest in librarianship that he became the University of Madras' first librarian only because his friends urged him to apply for the job to

It's as if Ranganathan designed his Colon Classification back in 1933 specifically for the kinds of instant reshuffling that were made feasible decades later in the Internet age.

increase his earnings. (That's right: He became a librarian for the money.)

After a trip to London for training in his new métier, however, libraries became his life. In 1931 he published his *five laws of library science,* which is a term he coined. Then, in 1933, Ranganathan published his masterwork, *Colon Classification.* Yes, that is the world's worst-ever title for a book, but the system it outlines for classifying books—using categories separated by colons—was revolutionary.

Ranganathan was in

London when he had his breakthrough. "I happened to see a Meccano set being demonstrated at a Selfridges store," he later wrote. (Meccano is a cross between Lego blocks and an Erector set.) "I spent a whole hour observing how different types of toys could be assembled from a small set of basic components."

The equivalent of the toy components became what Ranganathan called *isolates,* or what we would today call *metadata values.* Those values all fit within one of Ranganathan's five basic areas of classification: personality, matter, energy, space, and time. His system classified books by combining the isolates for each of those five areas.

PAPER SHUFFLING

The only drawback to Ranganathan's system is that it's not a particularly easy way to classify books. It requires insight, familiarity with the available isolates, and intuition. But the architecture of Ranganathan's system is perfectly designed for computer manipulation: Create a set of fields,or facets, and keep track of the values plugged into those fields. Then let people browse the fields in

any order they want, creating their own trees: Browse first by consultant location, then by cost, then by skill set, or whatever combination a particular query dictates. This is how browsing is organized at Apple Computer's iTunes page, Monster.com, and sites run by Eddie Bauer, the National Aeronautics and Space Administration, and many others.

It's as if Ranganathan designed colon classification in 1933 specifically for the kind of instant reshuffling that computers made feasible decades later. His key innovation: those colons. Because the facets aren't nested the way, say, Military History is nested inside of History in the Dewey Decimal System, the user can arrange them in any order—ingenious, but not very practical when library card catalogs were made of paper. Computers, however, can sort thousands of facets in an instant.

"Facets are all about manipulating multidimensional space," says Steve Papas, co-founder of Endeca, which uses Ranganathan's system in its software. "You can't do that in the physical world. But Ranganathan was ahead of his time. The constraints of the physical world didn't inhibit his imagination."