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COVER STORY

Jeff Bezos' Risky Bet

Amazon's CEO wants to run your business with the technology behind his Web site. But Wall street wants him to mind the store



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It was one of the Web's typical flash frenzies, a gaggle of geeks seeking the new, new thing. At 2 a.m. on Aug. 24, a new venture called Elastic Compute Cloud quietly launched in test mode. Its service: cheap, raw computing power that could be tapped on demand over the Internet just like electricity. In less than five hours, hundreds of programmers, hoping to use the service to power their MySpace ([NWS](#)) and Google ([GOOG](#)) wannabes, snapped up all the test slots. One desperate latecomer instant-messaged a \$10,000 offer for a slot to a lucky winner, who declined to give it up. "It's really cool," enthuses entrepreneur Luke Matkins, who will run his soon-to-launch music site on the service. The creator of this tr""s cool service: Amazon.com Inc. ([AMZN](#))

Yes, Amazon founder and Chief Executive Jeffrey P. Bezos, the onetime Internet poster boy who quickly became a post-dot-com pi?ata, is back with yet another new idea. Many people continue to wonder if the world's largest online store will ever fulfill its original promise to revolutionize retailing. But now Bezos is plotting another new direction for his 12-year-old company, which he will lay out on Nov. 8 at San Francisco's Web 2.0 Conference, the annual gathering of the digerati cr""me. Judging from an advance look h gave *BusinessWeek* on one recent gray day at Amazon's Seattle headquarters, it's so far from Amazon's retail core that you may well wonder if he has finally slipped off the deep end.



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Bezos wants Amazon to run your business, at least the messy technical and logistical parts of it, using those same technologies and operations that power his \$10 billion online store. In the process, Bezos aims to transform Amazon into a kind of 21st century digital utility. It's as if Wal-Mart Stores Inc. ([WMT](#)) had decided to turn itself inside out, offering its industry-leading supply chain and logistics systems to any and all outsiders, even rival retailers. Except Amazon is starting to rent out just about everything it uses to run its own business, from rack space in its 10 million square feet of warehouses worldwide to spare computing capacity on its thousands of servers, data storage on its disk drives, and even some of the millions of lines of software code it has written to coordinate all that.

Another big idea from Jeff Bezos? Go ahead and groan. It's fine with him. Even after all these years spent battling back claims that his company would be "Amazon.toast," he's still bounding up and down stairs two at a time to exhort his band of nerds on to the Next Big Thing. And now, more than ever, he's determined to keep going for the big score, even if people think he's crazy. In fact, Bezos, 42, sounds downright eager to confound a new generation of skeptics. "We're very comfortable being misunderstood," he says, letting loose one of his famously thunderous laughs. "We've had lots of practice."

But if techies are wowed by Bezos' grand plan, it's not likely to win many converts on Wall Street. To many observers, it conjures up the ghost of Amazon past. During the dot-com boom, Bezos spent hundreds of millions of dollars to build distribution centers and computer systems in the promise that they eventually would pay off with outsize returns. That helped set the stage for the world's biggest Web retail operation, with expected sales of \$10.5 billion this year.

What it didn't translate into was the consistent profit growth many investors had expected by now. Lately profits have fallen, dragged

down by spending on new technology projects and on free-shipping offers that Amazon considers marketing in place of TV ads. Analysts expect full-year net income this year to come in at about \$180 million, or half of last year's total. Most worrisome to investors is Amazon's three-year-plus binge on new technologies. So far this year its spending on technology and content, including hiring hundreds of engineers and programmers to produce all these new services and buy more servers to run them, is up 52%, to \$485 million. As a result, operating margins, at 4.1% for the past four quarters, now come in at less than Wal-Mart's 5.9%. Even Barnes & Noble Inc. ([BKS](#)), that doughy bricks-and-mortar book chain that many expected to get remaindered by the Web, has higher margins, at 5.4%. "I have yet to see how these investments are producing any profit," gripes Piper Jaffray & Co. analyst Safa Rashtchy. "They're probably more of a distraction than anything else."

All that has investors restless and many analysts throwing up their hands wondering if Bezos is merely flailing around for an alternative to his retail operation. Eleven of 27 analysts who follow the company have underperform or sell ratings on the stock--a stunning vote of no confidence. That number of sell recommendations is matched among large companies only by Qwest Communications International Inc. ([Q](#)), according to investment consultant StarMine Corp. It's more than even the eight sell opinions on struggling Ford Motor Co. ([F](#))

Neither analysts nor investors think Amazon's business is in danger of collapse. It's just that they're slowly losing confidence in Bezos' promises. The company's 2007 price-to-earnings ratio of 54 is much higher than its peers', even than high-flying Google Inc. ([GOOG](#)) at 35. But Amazon's stock is down 20% since the start of the year. A 12% one-day jump on Oct. 24 reflected slightly better-than-expected third-quarter results, but also investor relief that Bezos plans to slow the growth of new tech spending.

What's more, at the same time Bezos is thinking big thoughts, Amazon's retail business faces new threats. Its 25% sales growth tracks a little above the pace of overall e-commerce expansion and nearly double its own pace way back in 2001. But other sites are fast becoming preferred first stops on the Web. Google, for one, has replaced retail sites such as Amazon as the place where many people start their shopping. And more personalized and social upstarts such as News Corp.'s ([NWS](#)) MySpace and YouTube, which Google is buying, have become the prime places for many people to gather online--and eventually shop. It's a trend Amazon could have trouble catching up to. Says consultant Andreas Weigend, Amazon's chief scientist until 2004: "The world has shifted from e-business to me-business."

With all those problems, some might view Bezos' latest tech toys as an attempt to take their eye off the ball. But spend some time with Bezos, and it becomes clear there may well be a method to his madness. Amazon has spent 12 years and \$2 billion perfecting many of the pieces behind its online store. By most accounts, those operations are now among the biggest and most reliable in the world. "All the kinds of things you need to build great Web-scale applications are already in the guts of Amazon," says Bezos. "The only difference is, we're now exposing the guts, making [them] available to others."

And, he hopes, making money. With its Simple Storage Service, or S3, Amazon charges 15 cents per gigabyte per month for businesses to store data and programs on Amazon's vast array of disk drives. It's also charging other merchants about 45 cents a square foot per month for real space in its warehouses. Through its Elastic Compute Cloud service, or EC2, it's renting out computing power, starting at 10 cents an hour for the equivalent of a basic server computer. And it has set up a semi-automated global marketplace for online piecework, such as transcribing snippets of podcasts, called Amazon Mechanical Turk. Amazon takes a 10% commission on those jobs.

Bezos is initially aiming these services at startups and other small companies with a little tech savvy. But it's clear that businesses of all kinds are the ultimate target market. Already, Amazon has attracted some high-powered customers. Microsoft Corp. ([MSFT](#)) is using the storage service to help speed software downloads, for instance, and the service is helping Linden Lab handle the crush of software downloads for its fast-growing Second Life online virtual world. Highly anticipated search upstart Powerset Inc. plans to use the Amazon computing service, even though it's still in test mode, to supplement its own computers when it launches its service sometime next year. And the search engine marketing firm Efficient Frontier uses Mechanical Turk to determine the most effective keywords that drive traffic to Web sites.

By all accounts, Amazon's new businesses bring in a minuscule amount of revenue. Although its direct cost of providing them appears relatively low because the hardware and software are in place, Stifel Nicolaus & Co. ([SF](#)) analyst Scott W. Devitt notes: "There's not going to be any economic return from any of these projects for the foreseeable future." Bezos himself admits as much. But with several years of heavy spending already, he's making this a priority for the long haul. "We think it's going to be a very meaningful business for us one day," he says. "What we've historically seen is that the seeds we plant can take anywhere from three, five, seven years."

A DARK HORSE IN A HIGH-STAKES RACE

Sooner than that, those initiatives may provide a boost for Amazon's retail side. For one, they potentially make a profit center out of idle computing capacity needed for that retail operation. Like most computer networks, Amazon's uses as little as 10% of its capacity at any one time just to leave room for occasional spikes. It's the same story in the company's distribution centers. Keeping them humming at higher capacity means they operate more efficiently, besides giving customers a much broader selection of products. And the more stuff Amazon ships, both its own inventory or others', the better deals it can cut with shippers.

But there's much more at stake for Bezos than making a few extra bucks selling services that his online store is already providing for itself. This is nothing less than a bid to lead the next wave of the Internet. A dozen years in the making, the economy that has grown up with the Internet by most accounts remains in its infancy. And leadership of that burgeoning economy remains up for grabs.

Google and Microsoft, in particular, are each angling to be the Net's kingpins: Just as Microsoft ruled the PC world (and its profits) with Windows software, so Google and Microsoft want to build what techies call the "platform" for the Web--the powerful layer of

basic services on top of which everyone else builds their Web sites. "Amazon's a pretty serious dark horse" in that race, says Internet visionary Tim O'Reilly, CEO of tech publisher O'Reilly Media Inc. "Jeff really understands that if he doesn't become a platform player, he's at the mercy of those who do."

Bezos believes he has identified a unique Amazonian edge: Like no other Internet or computer company today, the e-retailer is in a position to apply the efficiencies of the Net to tangible and corporeal assets like products and people. Bezos envisions embedding the tasks of product distribution and knowledge work right into the flow of more automated business processes such as order taking and payment processing. For instance, a new service called Fulfillment by Amazon lets small and midsize businesses send their inventory to Amazon warehouses. Then when a customer places an order, Amazon gets an automated signal to ship it out--no muss, no fuss, no servers or software or garages full of stuff. "Amazon's in the business of managing complexity," says Amazon director John Doerr of the venture firm Kleiner Perkins Caufield & Byers. "There's no other e-commerce player that does that."

Mundane as these business-focused services may sound, the implications for the economy at large are startling. Google, MySpace, and YouTube cracked open for the masses the means to produce media and the advertising that sustains it, creating tens of billions of dollars in market value and billions more in new revenues. Now, by sharing Amazon's infrastructure on the cheap, Bezos is taking that same idea into the realm of physical goods and human talent, potentially empowering a whole new swath of businesses beyond the Internet itself.

The upshot: While Wall Street yawns, Bezos' pioneering dot-com is actually starting to look almost hip again, at least to the all-important Web 2.0 geek gods who set the Net agenda today. More importantly, some venture capitalists have noticed, and they're encouraging their startups to consider using Amazon services to save money and get to market faster. "Amazon is becoming a very interesting company," says Crosslink Capital general partner Peter Rip. "They're taking their store in the sky and unbundling it."

In any case, this looks like Bezos' biggest bet since he and his wife, MacKenzie, drove west in 1994 to seek fame and fortune on the Net. Since then he has survived the dot-com boom and bust with his ambitions intact. Now with three sons, and a daughter recently adopted from China, Bezos still has managed to find time to start a rocket company, Blue Origin. The venture is building a test facility in West Texas not far from his grandfather's ranch, where he once spent summers branding cattle. A longtime space nut, he made a valedictorian speech in 1982 at Miami Palmetto Senior High School about the need to colonize space.

Amazon, however, commands his full attention, especially now that the groundwork is laid for the company's latest transformation. He began not long after the dot-com bust in 2001 with--big surprise--a huge project to modernize Amazon's massive collection of data centers and the software running on them. The result was that Amazon made it much faster and easier to add new Web site features. Small, fast-moving groups of five to eight Amazon employees now could go hog wild with new ideas, such as customer discussion boards on each product page and software to play music and videos on the site. Since then these "two-pizza teams," which Bezos calls them because each team can be fed with two large pizzas, have become Amazon's prime innovation engines. "There's a huge value in this small, nimble team approach," says tech consultant and author John Hagel III. "But you can't do that without this kind of computer architecture."

Next came an epiphany: If the new computer setup allowed folks inside to be more creative and independent, why not open it up to outsiders, too? So in 2002, Amazon began offering outside software and Web site developers access to selected Amazon data such as pricing trends, gradually adding more and more until this year. Now it's basically getting free help from more than 200,000 outside Web developers, up 60% from a year ago. They're building new services on top of Amazon technology, further feeding back into Amazon's core retail business. One service, Scanbuy, lets people check Amazon prices on their cell phones to see if they're better than prices in a retail store.

Starting a few months ago, Amazon upped the ante. It began offering not just data but computing power, storage, and more, all intended to turn even more of its internal operations into salable services. One of the most interesting is Amazon Mechanical Turk. A couple of years ago, Amazon needed to make sure photos it took of thousands of businesses for the online Yellow Pages on its A9 search site actually matched the right business. Computers are bad at recognizing and sorting images, but people can do so very quickly. So Amazon set up a Web site where it could farm out the sorting to people for a penny or two per photo, clearly more for fun than for big pay. Last November, it launched the site, naming it after an 18th century chess-playing machine that actually had a real chess master hidden inside it.

NEW SPARK PLUGS FOR STARTUPS

Since its debut, the service has attracted thousands of "Turkers" working for dozens of companies. They're doing jobs that Mechanical Turk Director Peter Cohen says "couldn't be done at all before," because there was no economical way to gather people for these tiny, often ephemeral tasks. Efficient Frontier has used the service to analyze tens of thousands of search keywords to see which best attract potential shoppers to particular Web sites. "There have not been any other services like Mechanical Turk that can do this so efficiently," says software engineer Zachary Mason.

Forget for a moment whether this will eventually turn us all into low-paid piece workers. The important thing is that the service is nurturing startups. CastingWords co-founder Nathan McFarland uses Turkers--who he says are largely the "bored and nothing-on-TV" set who treat the tasks like crossword puzzles--not only to transcribe 10-minute podcast segments but also to assemble them into full transcriptions and to check the quality. Eighteen-year-old Eric Cranston, a onetime Turker living with his parents in Visalia, Calif., plans to use the service for a company he's starting that will retouch photos for Web sites. Essentially, Bezos sees the thousands of people from all over the world working inside Mechanical Turk's online marketplace as a big "human computer."

Amazon's other new services are getting even more serious attention. Last March, Amazon introduced its Simple Storage Service, which offers cheap space on its disk drives for any programmer or business to use to store data. Right away, Amazon approached

an online photo-sharing startup called SmugMug Inc. Ironic choice: President and co-founder Chris MacAskill had fiercely battled Amazon in an earlier startup, an online bookstore called Fatbrain, later bought by Barnesand- Noble.com ([BKS](#)). But his son Don, SmugMug's co-founder and CEO, says that when he heard how easily and cheaply SmugMug could back up its photos on S3, "my eyes got all big." Now, by zapping customers' photos to Amazon to store on its servers, he's avoiding the need to buy more storage devices of his own--and saving \$500,000 a year. "Everything we can get Amazon to do, we will get Amazon to do," says Chris MacAskill. "You're going to see all kinds of startups get a much better and faster start" by using Amazon's services.

They already are. Consider Powerset, the secretive search startup backed by A-list angel investors, including PayPal Inc. ([EBAY](#)) co-founder Peter Thiel and veteran tech analyst Esther Dyson. Co-founder and CEO Barney Pell harbors ambitions of out-Googleing Google with technology that he says would let people use more natural language than terse keywords to do their searches. By analyzing the underlying meaning of search queries and documents on the Web, Powerset aims to produce much more relevant results than the current search king's.

Problem is, Powerset's technology eats computing power like a child munches Halloween candy. The little 22-person company would have to spend more than \$1 million on computer hardware, two-thirds of that just to handle occasional spikes in visitor traffic, plus a bunch of people to staff a massive data center and write software to run it. That's when Pell heard about Elastic Compute Cloud. He was sold. Based on tests so far, using the Amazon site for part of the company's computing power could cut its first-year capital costs alone by more than half.

Not least, Amazon is now opening its vast network of more than 20 distribution centers worldwide to all comers. For years it has handled distribution and even Web site operations for the likes of Target Stores Corp. ([TGT](#)) and Borders Group ([BGP](#)). Recently it has started providing customized handling, packing, and customer service people for upscale retailers and manufacturers such as fashion boutique Bebe. And with Fulfillment By Amazon, it's opening all that up to small and midsize businesses.

With all these initiatives, Amazon empowers new startups, which are hungry to knock off Internet leaders that happen to be...Amazon competitors. Has Bezos thought about how he may be creating an army of allies to fight his rivals? His answer: "Absolutely!"

It's hard to dismiss another possibility, though: Amazon is biting off more than it can chew. Some of the new tech projects have come out with a thud. Compared with Google's, Amazon's A9.com search site never got traction, and its features were recently downsized. The new Amazon Unbox Video downloading service struck many early reviewers as clunky and slow.

Mostly, it's unclear whether Bezos can escape his and Amazon's linoleum-floor image. Amazon's mission to be the place where "customers can find and discover anything they might want to buy online" doesn't especially mesh with the goal to be the prime source of services needed to run an Internet Age business. By contrast, nearly all of Google's services are clearly aimed at building the dominant digital utility. Likewise, IBM ([IBM](#)) is much better known as a provider not only of technology services but also of expertise in automating a wider range of business processes, from inventory management to sales tracking. Can Bezos manage a company that simultaneously sells the most routine stuff to consumers and the most demanding business services to entrepreneurs and corporations?

So it is that Jeff Bezos faces a managerial moment of truth. Having saved Amazon from oblivion years ago, he still must prove his latest big bet can help transform the company into something truly enduring. Not only does he make no apologies for such wagers, he revels in them. Every year in his annual letter to shareholders he resurrects his 1997 letter, which reads in part: "We will make bold rather than timid investment decisions where we see a sufficient probability of gaining market leadership advantages."

Today, it's just the same. "We are willing to go down a bunch of dark passageways," he says, "and occasionally we find something that really works." As always, investing in Bezos and his company will require faith that there's light at the end of his newest tunnel--not just a money pit.

By Robert D. Hof

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