

Top line

"THE PREVENTIONS YOU HAVE IN PLACE TODAY WON'T PREVENT THE ATTACKS OF TOMORROW. IT'S AN ARMS RACE."

—MICHAEL LINES, CHIEF SECURITY OFFICER, TRANSUNION, P. 52

100 } Smartest Companies

The way people wield tools, including data and computers, makes a company smart. Here are the smartest, plus a way to calculate how your company stacks up.

By Kim S. Nash

COMPUTERS MANIPULATE numbers and track words better than people do. But they can't think. They aren't smart. Smartness is an animal trait and, for now, we humans are at the top of the heap. Like a computer, we store specific facts in our memory. But we also apply experience, instinct and the ability to identify obstacles when we respond to problems.

Working together, human and machine can figure out things that, separately, neither could. That is smart. And that's the basis of *Baseline's* 100 Smartest Companies ranking.

We tried to capture the contribution that people, using all tools available to them, make to their companies. When corporate development managers at Marvel Entertainment fine-tune marketing for new superhero movies based on analysis, down to the stock-keeping unit, of how well past efforts have gone, that's smart. When eBay computer engineers study how its 180 million customers use or don't use new features at the company's Web site, that's smart.

But how do you quantify the benefits? How do you know which companies are really smart?

Using financial data that public firms report to the Securities and Exchange Commission, *Baseline* contributor Paul A. Strassmann has developed a formula to calculate what he calls Knowledge

Value per Employee. That is, the value created by each worker, on average, from chief executive to middle manager to entry-level staffer. Strassmann is a former technology executive at Xerox, General Foods, Kraft and NASA. He has written numerous books on information management and, when he's not lecturing at George Mason University, he consults with the U.S. Department of Defense.

The metric Strassmann created isn't complex. First, subtract the company's shareholder equity from its market capitalization. Then divide that amount by the number of employees at the company. The result is an intangible but vital asset: the value each employee generates.

Investors, whose stock-buying choices create a market value for a company, are, in effect, judging the worth of the company's employees. The smartest companies are, no matter what the business is, the ones where employees are engaged, productive and forward thinking.

Look at Google. As of March 17, investors had bid up Google stock to a staggering worth of \$100.5 billion. Yet in annual financial documents filed in December, Google tallied its tangible assets at \$10.3 billion. The \$90.2 billion difference reflects what investors were willing to pay for what they presumed to be the smarts of Google's 5,680 workers. Investors bought expectations that,

TOP 10 SMARTEST COMPANIES

Rank	COMPANY, Industry	Sales Avg. \$ millions	3-Year Average				Knowledge Value per Employee
			Financial Value \$ millions	Market Capitalization \$ millions	Knowledge Value \$ millions	Number of Employees	
1	CENTERPOINT PROP. TRUST, Real Estate	\$163.3	\$538.8	\$1,791.2	\$1,252.4	100	\$12,523,917
2	REALTY INCOME, Real Estate	\$157.5	\$821.3	\$1,580.8	\$759.5	61	\$12,450,475
3	ALEXANDER'S, Real Estate	\$104.1	\$46.0	\$674.7	\$628.7	58	\$10,902,191
4	HOST MARRIOTT, Real Estate	\$3,584.5	\$2,047.0	\$4,008.6	\$1,961.6	188	\$10,452,634
5	ISTAR FINANCIAL, Real Estate	\$608.8	\$2,298.6	\$3,911.3	\$1,612.7	155	\$10,404,695
6	ALLIED CAPITAL, Financial Services	\$335.4	\$1,817.8	\$3,077.1	\$1,259.3	131	\$9,637,536
7	ALEXANDRIA EQUITIES, Real Estate	\$162.8	\$537.8	\$1,123.8	\$586.0	64	\$9,156,281
8	SIRIUS SATELLITE RADIO, Media	\$26.8	\$964.6	\$4,353.3	\$3,388.7	398	\$8,521,466
9	PAN PACIFIC RETAIL PROP., Real Estate	\$249.0	\$818.7	\$1,895.9	\$1,077.2	128	\$8,393,558
10	AMBAC FIN. GROUP, Fin. Services	\$1,206.7	\$4,301.4	\$7,433.3	\$3,131.9	386	\$8,113,626

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Topline

with the right tools and data, Google's employees will make a \$340-per-share stock price a profitable proposition.

Granted, relying on the stock market to judge a company's smartness has its problems. There will be cases when investors bid up the price of shares beyond any hopes of realizing good returns—say, during times of “irrational exuberance.”

So, the formula isn't perfect. But a company's smartness quotient, especially when compared to that of its competitors, can open discussion into how to make people more productive. Almost always, that's an area where the chief information officer can help—and not necessarily by installing more software and hardware. Sometimes, productivity comes from simplifying.

For example, Clive Meanwell, CEO at The Medicines Co., a pharmaceutical maker, decided that unimpeded communication would promote learning at his firm, which would in turn get drugs to market faster. He had his technology and building departments construct open “huddle” spaces wired for the corporate network and the Internet so employees could collaborate outside their cubicles. BlackBerrys and other wireless e-mail devices also proliferate. And a company intranet goes beyond the typical human-resources material to offer information pertinent to daily work, such as updates on clinical trials and how to reach colleagues with a particular kind of expertise.

The idea is to “put what people care about in front of their faces,” says David Mitchell, vice president of I.T. at The Medicines Co. “Don't force them” to go search for it, he says. The \$150 million company is No. 20 on our list.

WHO RULED AND WHY

For our ranking, we calculated the Knowledge Value per Employee at more than 3,000 public companies, using financial information averaged over three years. Using figures from the last full fiscal year alone might have been useful, but it wouldn't show the fuller picture of smarts over time. In these

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Rank	COMPANY, Industry	3-Year Average					Knowledge Value per Employee
		Sales Avg. \$ millions	Financial Value \$ millions	Market Capitalization \$ millions	Knowledge Value \$ millions	Number of Employees	
11	SAUL CENTERS, Real Estate	\$101.6	\$60.1	\$480.4	\$420.3	53	\$7,880,100
12	XM SATELLITE RADIO, Media	\$118.8	\$487.1	\$3,958.2	\$3,471.1	462	\$7,513,187
13	EBAY, Consumer Products and Services	\$2,216.8	\$5,060.4	\$46,599.4	\$41,539.0	5,933	\$7,000,956
14	GILEAD SCIENCES, Biotech. and Pharm.	\$886.4	\$1,148.4	\$11,216.7	\$10,068.3	1,443	\$6,977,364
15	CATELLUS DEVELOPMENT, Real Estate	\$602.9	\$666.4	\$2,366.4	\$1,700.0	249	\$6,827,169
16	KIMCO REALTY, Real Estate	\$604.7	\$2,093.2	\$4,880.7	\$2,787.5	417	\$6,690,026
17	REDWOOD TRUST, Real Estate	\$380.8	\$630.2	\$953.2	\$323.1	50	\$6,461,487
18	POGO PRODUCING, Oil and Gas	\$1,077.3	\$1,419.8	\$2,824.9	\$1,405.1	233	\$6,021,873
19	GENENTECH, Biotech. and Pharm.	\$3,513.1	\$6,213.8	\$41,054.8	\$34,841.0	6,375	\$5,465,543
20	MEDICINES CO., Biotech. and Pharm.	\$89.4	\$121.9	\$1,136.7	\$1,014.7	186	\$5,465,393
21	WEINGARTEN INVESTORS, Real Estate	\$433.7	\$950.3	\$2,618.9	\$1,668.5	310	\$5,376,608
22	QUALCOMM, Technology	\$3,963.4	\$7,551.5	\$47,103.9	\$39,552.4	7,700	\$5,136,676
23	MGI PHARMA, Biotech. and Pharm.	\$91.1	\$102.6	\$1,156.5	\$1,053.9	223	\$4,733,268
24	EASTGROUP PROPERTIES, Real Estate	\$109.6	\$358.4	\$630.6	\$272.2	58	\$4,693,540
25	YAHOO, Media	\$2,047.6	\$4,575.7	\$30,453.0	\$25,877.3	5,567	\$4,648,615
26	AMGEN, Biotech. and Pharm.	\$8,143.0	\$19,126.7	\$74,467.3	\$55,340.6	12,467	\$4,439,087
27	AMERICAN CAPITAL STRAT., Fin. Serv.	\$229.8	\$1,245.3	\$1,882.6	\$637.3	144	\$4,436,000
28	MEDICIS PHARM., Biotech. and Pharm.	\$254.7	\$481.8	\$1,794.9	\$1,313.1	303	\$4,333,492
29	ATP OIL & GAS, Oil and Gas	\$93.6	\$33.3	\$232.5	\$199.2	46	\$4,330,457
30	CELGENE, Biotech. and Pharm.	\$261.6	\$354.7	\$3,233.9	\$2,879.1	668	\$4,307,918
31	HUDSON CITY BANCORP, Fin. Services	\$843.6	\$1,349.4	\$5,906.5	\$4,557.1	1,084	\$4,205,249
32	TASER INTERNATIONAL, Manufacturing	\$34.0	\$43.5	\$704.7	\$661.1	158	\$4,193,334
33	MARVEL ENTERTAINMENT, Media	\$386.7	\$430.5	\$1,523.7	\$1,093.1	262	\$4,177,620
34	QLOGIC, Technology	\$436.3	\$745.8	\$3,832.1	\$3,086.3	742	\$4,157,608
35	MICROSOFT, Technology	\$32,462.3	\$62,675.0	\$287,734.7	\$225,059.7	54,167	\$4,154,949
36	STUDENT LOAN, Financial Services	\$940.0	\$947.8	\$2,852.0	\$1,904.2	463	\$4,112,839
37	NEUROCRINE, Biotech. and Pharm.	\$80.8	\$336.4	\$1,706.2	\$1,369.8	335	\$4,084,773
38	PROLOGIS, Real Estate	\$670.7	\$3,016.5	\$6,074.2	\$3,057.7	752	\$4,067,876
39	COMSTOCK RESOURCES, Oil and Gas	\$212.9	\$290.5	\$561.5	\$271.0	67	\$4,025,005
40	LIBERTY PROPERTY TRUST, Real Estate	\$633.8	\$1,497.6	\$3,084.9	\$1,587.3	396	\$4,011,788
41	OMNIVISION TECH., Technology	\$157.9	\$156.0	\$950.2	\$794.2	201	\$3,951,111
42	PIXAR, Media	\$245.9	\$957.9	\$3,834.6	\$2,876.7	735	\$3,913,839
43	XTO ENERGY, Oil and Gas	\$1,315.6	\$1,657.6	\$5,851.2	\$4,193.6	1,077	\$3,895,003
44	BOSTON PROPERTIES, Real Estate	\$1,320.8	\$2,498.6	\$5,096.5	\$2,597.9	668	\$3,889,099
45	FOREST LAB, Biotech. and Pharm.	\$2,147.3	\$2,410.9	\$18,966.0	\$16,555.1	4,313	\$3,838,710
46	OSI PHARM., Biotech. and Pharm.	\$32.3	\$250.5	\$1,880.4	\$1,629.9	454	\$3,592,752
47	EATON VANCE, Financial Services	\$569.3	\$412.7	\$2,655.9	\$2,243.2	626	\$3,585,280
48	KILROY REALTY, Real Estate	\$217.9	\$494.2	\$928.2	\$434.0	122	\$3,547,695
49	TRANSATLANTIC HOLDINGS, Fin. Serv.	\$3,352.6	\$2,331.5	\$3,930.4	\$1,598.9	452	\$3,539,999
50	HEALTHCARE REALTY TRUST, Real Estate	\$206.9	\$930.4	\$1,567.8	\$637.4	183	\$3,489,451
51	SPINNAKER EXPLORATION, Oil and Gas	\$229.4	\$750.4	\$998.2	\$247.8	71	\$3,474,234
52	COMM. NET LEASE REALTY, Real Estate	\$114.6	\$679.0	\$857.0	\$178.1	51	\$3,468,825
53	EOG RESOURCES, Oil and Gas	\$1,700.9	\$2,280.4	\$6,129.1	\$3,848.7	1,117	\$3,446,588
54	SONIC, Consumer Products and Services	\$461.1	\$276.9	\$1,280.2	\$1,003.3	292	\$3,439,826
55	ENDO PHARM., Biotech. and Pharm.	\$536.6	\$525.4	\$2,035.7	\$1,510.2	439	\$3,437,592
56	ENCORE ACQUISITION, Oil and Gas	\$226.4	\$376.3	\$812.6	\$436.3	130	\$3,347,468

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pages, you will find the 100 best scorers, as well as profiles of some of the smartest of the smart. Score your own company with our worksheet on page 22.

Pharmaceutical, oil and gas, and technology companies did well in our ranking, but it wasn't just a factor of big sales and relatively small staffs. Giants such as Bristol Myers Squibb, Johnson & Johnson, Exxon Mobil and Chevron didn't make it because, simply, their competitors—such as Genentech in pharmaceuticals and Burlington Resources in oil—outperformed them.

Real estate companies also did well in our ranking. Real estate is hot, of course, and real estate investment trusts can bring in lots of cash with relatively few people, but only if they make good decisions.

CenterPoint Properties Trust, No. 1 in our ranking of 100, is a 22-year-old real estate company that invests in industrial property. It owns, for example, a 50-acre business park at O'Hare International Airport in Chicago and a 2,000-acre train yard in Joliet, Ill., anchored by Burlington Northern Santa Fe.

CenterPoint says one of its most important differentiators, among hundreds of real estate investment companies, is tenant service. It pays bonuses to property managers and staff that depend, in part, on an annual tenant satisfaction survey, administered by an independent polling company. Property managers must visit each tenant at least once every 90 days, to build relationships and check for problems such as tardy trash pickup or complaints about neighbors. The company runs a homegrown application that integrates property management, accounting and administrative data.

Last year, CenterPoint says it achieved a 94% retention rate on its 201 properties by its attention to tenant needs.

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INDUSTRY RANKINGS

TO SEE THE RESULTS FOR SEVEN SECTORS, CHECK OUT: GO.BASELINE.COM/APR06

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Rank	COMPANY, Industry	3-Year Average					Knowledge Value per Employee
		Sales Avg. \$ millions	Financial Value \$ millions	Market Capitalization \$ millions	Knowledge Value \$ millions	Number of Employees	
57	HOUSTON EXPLORATION, Oil and Gas	\$496.2	\$703.7	\$1,224.0	\$520.3	157	\$3,320,909
58	FED. REALTY INVEST. TRUST, Real Estate	\$357.6	\$708.7	\$1,932.7	\$1,224.0	369	\$3,311,962
59	LINEAR TECHNOLOGY, Technology	\$642.1	\$1,802.3	\$11,022.8	\$9,220.4	2,785	\$3,311,144
60	BEDFORD PROP. INVESTORS, Real Estate	\$101.4	\$310.1	\$452.9	\$142.7	44	\$3,268,741
61	REGENCY CENTERS, Real Estate	\$385.9	\$1,333.8	\$2,583.2	\$1,249.4	386	\$3,239,665
62	LEXAR MEDIA, Technology	\$422.7	\$114.2	\$792.1	\$677.9	211	\$3,217,949
63	TURBOCHEF TECH., Manufacturing	\$26.7	\$12.8	\$208.8	\$196.0	61	\$3,213,612
64	BURLINGTON RESOURCES, Oil and Gas	\$4,297.7	\$5,454.7	\$12,186.2	\$6,731.6	2,109	\$3,191,320
65	WASHINGTON REIT, Real Estate	\$163.3	\$357.0	\$1,207.1	\$850.1	267	\$3,187,903
66	XILINX, Technology	\$1,189.8	\$2,112.5	\$10,167.8	\$8,055.3	2,664	\$3,023,379
67	RED HAT, Technology	\$98.2	\$357.3	\$2,231.2	\$1,873.9	627	\$2,988,695
68	CISCO SYSTEMS, Technology	\$19,946.0	\$27,503.7	\$129,711.4	\$102,207.8	34,667	\$2,948,301
69	INTERDIGITAL COMM., Technology	\$102.1	\$97.3	\$1,041.5	\$944.2	323	\$2,923,263
70	DEVELOPERS DIVERS. REALTY, Real Estate	\$517.9	\$1,704.7	\$2,957.0	\$1,252.4	431	\$2,903,533
71	ALTERA, Technology	\$851.8	\$1,170.8	\$7,000.6	\$5,829.8	2,014	\$2,895,137
72	FED. AGRICULTURE MORT., Fin. Services	\$185.0	\$211.2	\$314.0	\$102.8	36	\$2,882,542
73	BERRY PETROLEUM, Oil and Gas	\$195.1	\$210.8	\$594.1	\$383.3	133	\$2,881,709
74	CHARTER FINANCIAL, Financial Services	\$41.7	\$250.7	\$741.6	\$490.9	172	\$2,854,283
75	ICOS, Biotech. and Pharm.	\$80.9	\$174.4	\$1,949.4	\$1,775.1	625	\$2,840,083
76	SILICON LABORATORIES, Technology	\$321.2	\$280.8	\$1,639.4	\$1,358.6	479	\$2,834,284
77	MARTEK BIOSCIENCES, Biotech./Pharm.	\$115.1	\$232.0	\$1,292.3	\$1,060.3	374	\$2,832,533
78	MEDIMMUNE, Biotech. and Pharm.	\$1,014.4	\$1,683.7	\$6,615.1	\$4,931.4	1,744	\$2,828,185
79	ELECTRONIC ARTS, Technology	\$2,388.0	\$1,902.1	\$13,355.8	\$11,453.7	4,100	\$2,793,580
80	SURMODICS, Manufacturing	\$40.6	\$83.5	\$494.4	\$410.9	149	\$2,751,239
81	UNITED THERAPEUTICS, Biotech./Pharm.	\$52.4	\$177.0	\$614.9	\$437.9	160	\$2,736,579
82	QUICKSILVER RESOURCES, Oil and Gas	\$147.6	\$225.0	\$1,035.2	\$810.2	297	\$2,730,967
83	SANDISK, Technology	\$1,132.7	\$1,356.2	\$3,445.7	\$2,089.6	770	\$2,713,712
84	MBIA, Financial Services	\$1,671.0	\$6,110.5	\$7,935.5	\$1,825.0	673	\$2,713,067
85	BIOGEN IDEC, Biotech. and Pharm.	\$1,098.3	\$4,996.5	\$13,105.6	\$8,109.1	2,996	\$2,706,644
86	PENN VIRGINIA, Oil and Gas	\$173.4	\$217.5	\$523.9	\$306.4	113	\$2,703,403
87	NOBLE ENERGY, Oil and Gas	\$1,226.8	\$1,181.0	\$2,766.5	\$1,585.5	589	\$2,693,327
88	BARR PHARM., Biotech. and Pharm.	\$1,133.6	\$858.9	\$4,231.5	\$3,372.7	1,270	\$2,656,356
89	RECKSON ASSOCIATES, Real Estate	\$504.1	\$1,025.9	\$1,798.7	\$772.8	291	\$2,655,693
90	KCS ENERGY, Oil and Gas	\$167.0	\$91.7	\$428.6	\$336.8	127	\$2,652,139
91	SHUFFLE MASTER, Manufacturing	\$69.4	\$37.6	\$667.7	\$630.1	240	\$2,625,488
92	APACHE, Oil and Gas	\$4,022.2	\$6,553.8	\$12,618.5	\$6,064.7	2,318	\$2,616,727
93	HERITAGE PROP. INVEST., Real Estate	\$302.0	\$919.5	\$1,279.4	\$359.9	139	\$2,595,716
94	NETWORK APPLIANCE, Technology	\$953.6	\$1,087.2	\$7,447.4	\$6,360.2	2,490	\$2,554,636
95	JUNIPER NETWORKS, Technology	\$861.3	\$2,995.2	\$8,139.6	\$5,144.4	2,014	\$2,553,883
96	SALIX PHARM., Biotech. and Pharm.	\$64.9	\$73.7	\$428.5	\$354.9	139	\$2,553,048
97	INTEGRATED CIRCUIT SYS., Technology	\$232.2	\$263.7	\$1,587.9	\$1,324.2	520	\$2,544,878
98	ADOBE SYSTEMS, Technology	\$1,375.4	\$1,066.2	\$9,992.1	\$8,925.9	3,568	\$2,501,666
99	GOODRICH PETROLEUM, Oil and Gas	\$32.3	\$53.4	\$157.4	\$104.0	42	\$2,475,397
100	FOUNDRY NETWORKS, Technology	\$369.8	\$565.0	\$2,071.6	\$1,506.6	610	\$2,469,816

ALL FINANCIAL FIGURES ARE 3-YEAR AVERAGES, 2002-2004.

Topline

Tactically, a CIO can offer our ranking to senior executives when defending the technology budget. The typical peer comparison of information-technology spending as a portion of revenue reflects only short-term financial results.

But at the board level, trends in stock-market valuation will always merit more attention because they reflect long-term economics. The CIO is suddenly speaking business language.

In the end, Knowledge Value per Employee is just one more way to

evaluate the job the information-technology department does—and for a technology leader to unearth some insight into how he or she can make the company better, faster, smarter.

Google, by the way, isn't included in our Smartest Companies ranking; it hasn't been public for three years. Using the most recent single year's worth of data, Google would come out with a Knowledge Value per Employee of \$16 million—pretty darn good. Of course, Google is enjoying the limelight right

now, hailed by some as a Microsoft replacement. It's also feeling the heat from Department of Justice lawyers pressing to look at its search data. It will be interesting to see where Google places when we can run a true three-year calculation for our ranking in 2008. Will that \$340-per-share price have paid off?

Let us know what your guess is, and what you think of the Smartest Companies ranking, at *Baseline's* blog (www.projectmanagement.itub.com) or directly at kim_nash@ziffdavis.com. ◀

Do It Yourself!

Here are the steps and financial data you will need to **evaluate how smart your company is**, as well as compare your results to one or more competitors. The calculations below are the basis of *Baseline's* 100 Smartest Companies ranking.

What You'll Need

1. Get your company's and competitors' financial data from annual or financial analyst reports for Rows A, B, D, F, G and I. Get at least three years of data to account for year-to-year differences. Do the calculations described in the left column; then add up years 1 through 3 and compute the three-year average. **2.** For further insights, compare your firm with the closest three competitors, especially those who are gaining market share relative to your firm. The higher the Knowledge Value per Employee, the smarter the company. Numbers below come from two *Fortune* 100 companies.

PART I: Your Company's Costs and Valuations		YEAR 1	YEAR 2	YEAR 3	3 YEAR AVERAGE	YOUR FIRM
A	MARKET VALUE (market capitalization at year-end; in \$ millions)	\$222,949	\$229,589	\$223,686	\$225,408	
B	FINANCIAL VALUE (shareholder equity; in \$ millions)	\$35,102	\$39,337	\$43,623	\$39,354	
C	KNOWLEDGE VALUE (at stock-market prices; in \$ millions) (A - B)	\$187,847	\$190,252	\$180,063	\$186,054	
D	NUMBER OF EMPLOYEES (in 000s)	1,383	1,400	1,500	1,428	
E	YOUR FIRM'S KNOWLEDGE VALUE/EMPLOYEE (C x 1,000 ÷ D)	\$130,290				
PART II: Your Competitor's Costs and Valuations		YEAR 1	YEAR 2	YEAR 3	3 YEAR AVERAGE	YOUR COMPETITOR
F	MARKET VALUE (market capitalization at year-end; in \$ millions)	\$242,270	\$311,066	\$385,883	\$313,073	
G	FINANCIAL VALUE (shareholder equity; in \$ millions)	\$63,706	\$79,180	\$110,821	\$84,569	
H	KNOWLEDGE VALUE (at stock-market prices; in \$ millions) (F - G)	\$178,564	\$231,886	\$275,062	\$228,504	
I	NUMBER OF EMPLOYEES (in 000s)	315	305	307	309	
J	YOUR COMPETITOR'S KNOWLEDGE VALUE/EMPLOYEE (H x 1,000 ÷ I)	\$739,495				

SOURCE: STRASSMANN INC.

Figure out how smart your company is. Go online to WWW.BASELINEMAG.COM/APR06 for a free interactive version of this worksheet.

Calculate the worth of an employee. Go to WWW.BASELINEMAG.COM/JAN06 for a free interactive tool.

100 } Smartest Companies

EBay Portable apps propel online auctioneer.

How does eBay's information-technology staff juggle the company's constant acquisition sprees, surging network demand and more daily transactions than Nasdaq? The key is flexibility and scalability, according to James Barrese, eBay's vice president of systems development. "We not only have to innovate on a regular basis, we also have to innovate at scale," he says, meaning the company's systems and applications must expand and grow as needed. "With 180 million users and new acquisitions, we sometimes need to turn on a dime."

To enable this, developers at the online auctioneer, which ranked No. 13 on *Baseline's* list of the smartest companies, work with portable applications, based on what are called data abstraction layers that are not tied to any particular architecture. Abstraction layers allow developers to write applications for different platforms without having to know the details of the underlying technology—in this case, the type of database or data source.

By using abstraction layers, an application that may have been written to work with the company's internal architecture of Sun Solaris machines and Oracle databases can be quickly ported, if necessary, to eBay's external platform, with its mix of IBM blade servers, Microsoft Windows NT and Java applications. These applications can then find themselves in front of both eBay's 8,100 employees and its millions of online customers, performing more than two billion searches a month and trading \$1,500 worth of goods every second.

Employing these portable apps, Barrese says, saves time, effort and, most importantly, the cost required to duplicate efforts.

These applications also allow the company's operations staff to be more flexible when it comes to balancing loads on the network, he says, giving them the option of reappportioning certain activities without the rewriting or software engineering that would be necessary in a traditional application development environment. In addition, this flexibility allows the company to adjust to rapid growth, whether that involves a newly acquired subsidiary, a traffic spike surrounding a hot new auction item or a 30% rise in customer sign-ups, each of which it has experienced over the past year.

Much of these application solutions tend to be developed in-house. "We use some open-source technology when we can," he explains, "but in some cases, when you have thousands of servers that need to be online 24 hours a day, we need architectural constructs that just don't exist out there yet."

The bottom line in I.T. supporting a rapidly changing company like eBay, Barrese says, is anticipating what may happen next and adjusting your capacity planning accordingly. "We have the standard challenges any I.T. organization deals with," he says. "But for us, scale is key. It has to scale at an extreme level." —*John McPartlin*

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Marvel Entertainment

Tracking the appeal of Spider-Man and other characters powers the bottom line.

More than 4,700 individuals rule Marvel Entertainment, including a 44-year-old man in a red and blue unitard.

Spider-Man, along with the X-Men, Fantastic Four, Wolverine and other comic book characters famous and obscure, are Marvel's biggest asset. But special powers like Spidey's spider-sense and Wolverine's retractable claws aren't what make Marvel No. 33 in *Baseline's* 100 Smartest Companies ranking, and No. 4 among media firms.

Rather, managers all the way up to the chief executive at the \$391 million company analyze such data as audience desires (action heroes or cowboys?) and retail buying patterns (T-shirts or slippers?), along with sales and profits generated by Marvel's past projects. Then, the company's 230 corporate development, legal, creative, marketing and other employees formulate a branding and financial plan for each piece of intellectual property—a character or set of characters—in play. Spider-Man one year, Fantastic Four the next.

The 2002 movie *Spider-Man* was Marvel's first blockbuster, taking in \$822 million at theaters worldwide. From then on, the company has sought to launch one or two carefully chosen character franchises per year.

But to do it, managers at various levels need "actionable" data from inside and outside the company, says Peter Cuneo, vice chairman of Marvel in New York.

Marvel must answer key questions that are sometimes esoteric: Do moviegoers prefer superhuman heroes or martial arts experts? How recognizable is Wolverine compared to Daredevil? Other ques-

tions are direct: How many copies of which version of the Spider-Man video game is Marvel's partner, Activision, selling each quarter?

Every quarter, Marvel's 800 licensees, including toy, clothing, food, video-game and movie companies, send product sales data to the company in all sorts of formats—faxed paper, spreadsheets, text files. The data is then entered into Marvel's Oracle database and financial and enterprise applications.

The goal is to connect quarterly royalty data reported by licensees with marketing information on spending and income by character, so that, for example, Marvel can know down to the stock-keeping unit level the revenue generated by each character, from each licensee.

The Oracle and Excel data help Marvel figure out the right assortment of companies to license each character. For example, the movie *Spider-Man 3* is due out next year. Q ratings, which measure how well a brand is recognized by different cross-sections of consumers, show that Spider-Man is well-known with broad appeal to young children as well as adults. As a result, tie-ins with the new movie will come from toys, games and apparel, and, perhaps, fast-food.

The strategy appears to work. Marvel took in \$230 million last year in licensing revenues, up 7% from \$215 million in 2004, and another \$92 million from publishing, also up 7% from \$86 million.

—*Kim S. Nash*

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