

Measuring Internet Presence

How Do Massachusetts Companies Compare with the Nation's Best?

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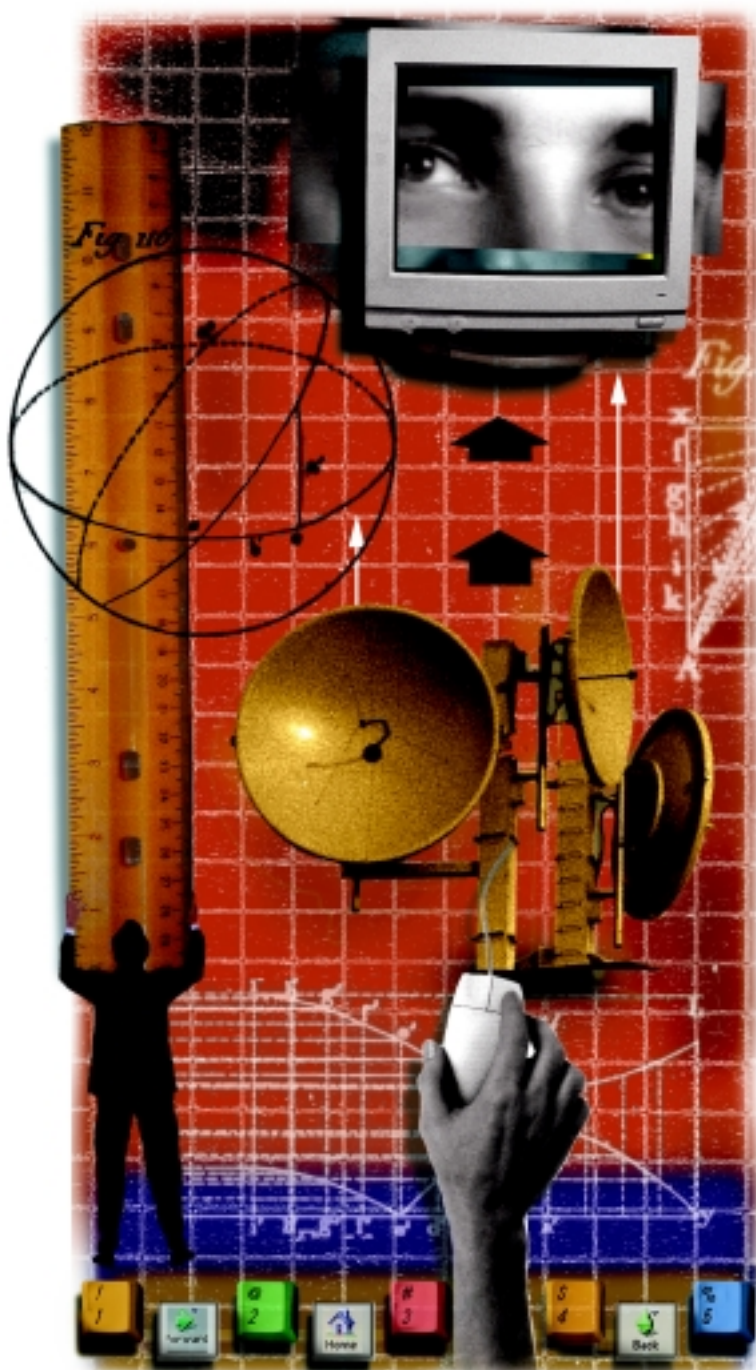


ILLUSTRATION: NAOMI SHEA

There is great potential among Massachusetts companies to become important players in the Internet economy. Two new indices, the Internet Presence Index (IP) and the Relative Internet Presence Index (RIP), help us better understand how well the Commonwealth's companies are competing in this venue. The indices facilitate comparisons of Massachusetts companies with leading U.S. companies across these industry sectors: banking, biotechnology, computers, consumer goods, electronics, finance, industry, retail, services, telecommunications, and utilities. When compared to a sampling of companies across the country, our "in-state" businesses appear to be average—if not somewhat behind—when it comes to holding their own in the Internet economy.

The Massachusetts economy can be viewed through several different lenses. The study presented here compares *The Boston Globe's* top 100 Massachusetts businesses (based on net revenue) to the *Fortune* 100 companies. This provides us with the ability to evaluate the relative Internet presence of companies that have the largest economic impact on the state.

Economic sectors such as education, tourism, and software development are generally not represented in this study, as the companies or organizations are too small to make the *Boston Globe* list. Each of these sectors is dramatically impacted by the Internet, however. Though this is beyond the scope of this study, they represent a portion of the economy that needs to be addressed. This study focuses on how to best measure the Internet presence of those companies that represent the largest portion of the Massachusetts economy.

Indices Analyze Six Important Web Site Qualities

Electronic commerce, use of the World Wide Web for retail sales, is only one component of the new Internet economy. It is, however, the one that gets most of the popular press. Estimates of the significance of electronic commerce in 1998 vary, but a common estimate is that \$7 billion in goods and services was sold to consumers over the Internet in 1998, with a majority of sales occurring in December. Analysts estimate that by 2002, electronic commerce will account for \$160 billion.

The Internet Presence Index (IP) and the Relative Internet Presence Index (RIP) capture the extent to which companies exploit the Internet and compare Massachusetts companies with their counterparts nationwide.¹ The indices provide an analysis of Web-site qualities for companies and corporations in banking, biotech, computers, consumer goods, electronics, financial services, industry, retail, services, and utilities.²

The methodology involves analyzing the Web sites of the top 100 Massachusetts companies and the top 100 U.S. companies, ranked by revenue, across six dimensions (see "How the Web Sites Were Scored"). Preliminary research found these dimensions to be prevalent across organizations' Web sites. More importantly, they reflect the ability of each organization to communicate with key constituencies that determine competitive effectiveness.

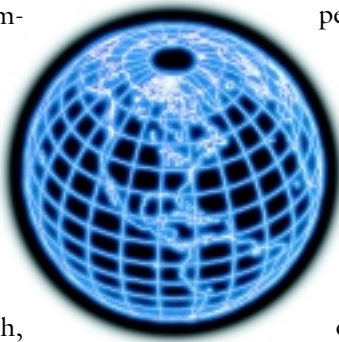
Each Web site was scored on the six dimensions. The scoring system reflects the number of features that were found on the site. Depending on that number, a site received a score ranging from zero to five for each dimension.

A company's Web site then received an Internet Presence score.³ This was a sum of the six dimension scores—with "product/service" information and "captures prospective consumer" information receiving double weight—divided by the maximum potential scores. A sector IP score was the average of companies' IP scores in the sector. (IP scores range from zero to 100 percent.) These scores measure the business use of Web sites, compared to a maximum potential.

Relative Internet Presence (RIP) is the ratio of the Massachusetts-sector Internet Presence to the U.S.-sector Internet Presence. The Relative Internet Presence provides a comparison ratio. Massachusetts companies with a ratio less than 1.0 fall short of national companies. Those whose ratio is 1.0 are on par, and those with a ratio greater than 1.0 exceed their national counterparts. In evaluating Massachusetts companies' Internet capabilities, both IP and RIP should be considered.

Internet Presence: U.S. Companies = 76, Massachusetts Companies = 58

The analysis is based on one important assumption: All companies want to be competitive in the Internet economy. Certainly, a business strategy might reject that assumption. The Internet economy is becoming so pervasive, however, that rejection of this assumption is likely to



result in negative consequences where staying ahead of the competition is concerned.

The model described above is helpful in understanding the impact of the Internet on the Massachusetts economy from a number of viewpoints. Looking at all 200 companies reveals that the national sample had a 76 percent IP, while the entire Massachusetts sample totals just 58 percent. The RIP for the entire set of Massachusetts companies is 0.77. Consequently, our own companies must devote more resources to their Web-based business or they will likely fall further behind.

Another way to view the data is to focus on which industries have the largest presence. Nationally, banking ranks highest, with a rating of 86 percent. Massachusetts banks are also doing quite well with a 76 percent rating and an RIP of 0.88. (See table on pages 20 and 21.)

Consumer goods is the only industry sector that is doing better in the state than its national competitors (RIP equals 1.06). However, this is the industry segment that is doing the poorest overall and has the greatest need for improvement.

Sectors whose RIPs are closest to 1.0 (banking, computers, and consumer goods) apparently best understand the challenges of getting the most out of the Internet and are using it as an integral part of their business planning.

Biotech, retail, services, and utilities are very weak relative to their national competition. All scored between 0.61 and 0.63. To catch up with their national counterparts, these industries must better understand the impact of the Internet on their businesses.

How the Web Sites Were Scored

Provides Product/Service Information A score of 0 indicates that there is no information about products on the Web site. A score of 5 means that the site shows many individual products with detailed information (part number, diagrams, schematics, etc.) and allows the customer to buy on-line.

Captures Prospective Consumer Information A score of 0 indicates that the Web site has no method of capturing consumer information. A score of 5 means that the site uses at least two forms to capture consumer name/address and e-mail address.

"Sticky" Web Site (Keeps Consumer Coming Back) A score of 0 indicates that there is no reason for the consumer to return to the Web site regularly. A score of 5 means there are five or more reasons.

Recruits Employees On-line A score of 0 indicates that the Web site has no mention of potential employment opportunities. A score of 5 means that the site includes lengthy job opportunity descriptions by duty and location, along with the ability to apply on-line.

Provides Investor Information One point is awarded for each of the following: current stock price; 1998 annual report and current SEC filings; historical financial report (annual report and SEC filings); current news releases, including press releases; highlights or summations of current financial data.

Communicates Corporate Social Responsibility A score of 0 indicates that there are no examples of corporate social responsibility. A score of 5 means that there are five or more examples.

Internet Presence

Sector	(N)	Internet Presence (percent)	Relative Internet Presence (MA ÷ US)	SCORES (based on a scale of 0 to 5)			
				Provides Product/ Service Information	Captures Prospective Consumer Information	"Sticky" Web Site	Recruits Employees On-line
Banking (MA)	4	76	0.88	3.75	4.25	2.75	3.25
Banking (US)	6	86		4.17	4.50	4.50	4.67
Biotechnology (MA)	4	54	0.63	3.25	2.75	2.25	4.25
Biotechnology (US)	2	85		4.00	4.00	5.00	3.50
Computers (MA)	13	73	0.89	4.00	4.62	3.08	4.15
Computers (US)	8	82		4.50	3.00	3.88	4.75
Consumer Goods (MA)	15	60	1.06	3.47	3.60	3.00	2.53
Consumer Goods (US)	10	56		2.20	2.70	3.60	2.10
Electronics (MA)	4	65	0.81	3.25	4.50	3.00	3.25
Electronics (US)	3	80		4.33	5.00	3.67	4.00
Financial Services (MA)	7	51	0.73	3.14	2.71	3.14	2.43
Financial Services (US)	11	70		3.91	3.36	4.55	2.73
Industry (MA)	22	61	0.82	3.77	4.18	2.59	1.64
Industry (US)	16	74		4.06	3.69	3.19	3.13
Retail (MA)	10	44	0.62	1.50	3.20	2.70	2.10
Retail (US)	15	71		4.13	3.00	3.80	3.33
Services (MA)	16	49	0.61	3.25	2.69	1.63	2.56
Services (US)	18	80		4.17	3.78	4.83	4.33
Telecommunications (MA)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Telecommunications (US)	8	92		5.00	4.13	5.00	4.25
Utilities (MA)	5	53	0.63	2.80	2.20	2.20	1.60
Utilities (US)	3	83		4.00	4.67	5.00	3.67
All sectors (MA)	100	58	0.77	3.31	3.57	2.60	2.58
All sectors (US)	100	76		4.01	3.57	4.15	3.59

How Do Massachusetts Companies Measure Up?

Provides Investor Information	Communicates Corporate Social Responsibility	Marketing Implications for Massachusetts Firms
4.50 3.67	3.75 4.33	Far exceed national counterparts in providing investor information via the Web. Fairly successful at providing product and service information and capturing consumer information. Poor at providing a sticky Web site, a critical criterion for keeping consumers on the site and selling more services.
3.00 4.50	0.00 5.00	Best use of the Web for recruiting employees, likely a result of the tight labor market and a willingness to use all available channels for recruiting. Falls short in ability to create sticky Web sites. Best of Massachusetts companies sampled, Boston Scientific, had an IP of just 68 percent.
3.92 4.50	0.77 4.63	Very good at capturing consumer information. Web does not appear critical in efforts to communicate corporate social responsibility. Highly likely that smaller companies not on this list would rate better, as they often create products and services for the Internet economy.
3.40 4.00	1.00 3.00	Most successful of the Massachusetts sectors in establishing Internet presence. Far better than the national average at providing product and service information and capturing consumer information. Less successful communicating corporate social responsibility. Given the size of consumer goods in the state, this is very positive for this industry.
4.25 4.67	1.25 1.00	Have not used the Web as well as national sample. Score relatively high in capturing consumer information, an indication that they are collecting information to influence product and service delivery. Provide a reasonable amount of information about corporate social responsibility.
2.86 3.75	0.14 2.36	A large presence in the state. National competitors score better in all categories. In recruiting employees, Allmerica scored best with a low 73 percent rating, suggesting that this sector has much work ahead if it intends to remain competitive in the Internet economy.
3.77 4.31	0.41 3.38	Great job of capturing consumer information and a respectable job of providing information on products and services. Show an interest in using consumer feedback to enhance products. Score low in recruiting employees, an area that could be substantially improved with little cost.
2.40 4.13	0.90 2.73	Some surprises here. Not strong at providing product and service information. As the industry most threatened by e-commerce, some of the best success stories are found here (e.g., LLBean, e-Toy, Amazon.com). The industry as a whole must move quickly to improve communications with their constituencies.
2.81 4.27	0.88 2.89	Strong relative performance in ability to provide product and service information. Poor in ability to create sticky Web sites. As "stickiness" is a proxy for getting and keeping customers, this is an area that needs attention. The best in this sector, Renaissance Worldwide, a provider of information technology services, came through with a weak Web presence of 73 percent.
N/A 4.75	N/A 4.38	
4.20 4.67	3.00 2.67	Poor performance, except in two important areas: providing investor information and communicating corporate social responsibility. All other areas are in need of substantial improvement.
3.42 4.23	0.88 3.22	

Top Companies in the State and in the Nation: The Exemplars of Success

The analysis of Massachusetts business IPs suggests several exemplary companies with regard to maximizing the capabilities of the Internet. These companies provide important benchmarks as a basis upon which others can plan their own Internet strategies. Rather than being Internet-based businesses (Amazon.com, eBay, eToys, etc.), these companies represent traditional industries and have had to adjust to the impact of the Internet.

Merck has been an exemplar for the pharmaceutical and biotech industries for more than 20 years in the areas of research, drug development, and marketing. It is not surprising, then, that it scores 88 percent in Internet presence, making it a leader, also, in the Internet economy.

Banks nationwide have regarded Bank of America for its innovative services. With a 98 percent IP rating, this corporation clearly holds a prominent position in Internet leadership.

In retail, industrial, and service sectors, General Motors (98 percent), Dayton Hudson (98 percent), PG&E (88 percent) and GE (88 percent) are all top performers that should serve as role models for their counterparts in the state and across the nation.

Consumer products scored poorly in both the national sample and the Massachusetts sample. Yet, there are two strong exemplars in Proctor & Gamble and Johnson & Johnson. Both have been industry leaders for years, and both are ahead of the competition on the Internet.

Financial services is heavily involved in Internet business. Both Cigna and Aetna scored very high (98 percent) as they depend on the Web to sell their business products. Merrill Lynch, who recently announced on-line brokerage and other financial management services, currently does well (88 percent) but will be an even more formidable presence in the future.

Using the Indices to Improve Success

The Internet is affecting the manner in which nearly all businesses operate and communicate. One of their greatest challenges is the fact that the measure of excellence in Internet strategies changes as the Internet economy evolves. Self-assessment and comparison to the competition are essential tools for improvement. The RIP index provides an objective measure of a company's IP standing by comparison to the national exemplars in its industry.

Massachusetts businesses, while doing fairly well in the Internet economy, must continually assess their progress and make the changes that are necessary to keep the state economy strong. The RIP index suggests that Massachusetts businesses have plenty of room for improvement in their communications to the constituencies that will ensure their survival. ▮

Exemplar Companies

Highest Rated Web Pages

Industry	Company Name (U.S.)	IP (%)	URL
Banking	Bank of America	98	www.bankamerica.com
Biotech	Merck	88	www.merck.com
Computers	Compaq Computers	89	www.compaq.com
Consumer Goods	Proctor & Gamble	88	www.pg.com
Consumer Goods	Johnson & Johnson	88	www.johnsonandjohnson.com
Electronics	General Electric	88	www.ge.com
Financial	Merrill Lynch	88	www.merrillynch.com
Financial	Cigna	98	www.cigna.com
Financial	Aetna	98	www.aetna.com
Industrial	General Motors	98	www.gm.com
Services	Cigna	98	www.cigna.com
Retail	Dayton Hudson	98	www.daytonhudson.com
Telecom	Bell Atlantic	100	www.bellatlantic.com
Telecom	BellSouth	100	www.bellsouth.com
Utilities	PG&E	88	www.pge.com

Industry	Company Name (MA)	IP (%)	URL
Banking	Bank Boston	98	www.bankboston.com
Biotech	Boston Scientific	68	www.bsbi.com
Computers	Aspen	83	www.aspentech.com
Computers	Progress	83	www.progress.com
Computers	The Learning Company	83	www.learningco.com
Consumer Goods	Stride-Rite	85	www.striderite.com
Consumer Goods	New England Business Service Inc.	85	www.nebs.com
Consumer Goods	Staples	85	www.staples.com
Electronics	Teradyne	80	www.teradyne.com
Electronics	GenRad	80	www.genrad.com
Financial	Allmerica Financial Corp	73	www.allmerica.com
Industrial	Waters Corp	85	www.waters.com
Industrial	Cabot Corp.	85	www.cabot-corp.com
Retail	BJ's Wholesale Club	70	www.bjswholesale.com
Services	Renaissance Worldwide Inc.	73	www.technologyfair.com
Utilities	BEC Energy	78	www.bedison.com

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ENDNOTES

1. These indices are preliminary and will undergo further validation and revision by the authors in the future.
2. No data were collected for telecom companies in Massachusetts, because none were represented in the Top 100 Massachusetts companies.
3. Internet Presence (IP) and Relative Internet Presence (RIP) scores are calculated as follows:

Internet Presence (Company):

$$\frac{\sum (2 \times [\text{Product or Service Information}] + 2 \times [\text{Captures Customer Information}] + \text{Sticky Web Site} + \text{Recruits Employees} + \text{Provides Investor Information} + \text{Communicates Social Responsibility})}{(\text{Maximum Potential Score})}$$

Internet Presence (Sector):

$$\frac{\sum \text{Company Web Presence Scores}}{N}$$

Relative Internet Presence (MA companies):

$$\frac{\text{Massachusetts Sector Web Presence}}{\text{U.S. Sector Web Presence}}$$