THE NATION'S CAPITAL AND HP

Social Media: Predicting the Future through Online Analysis

Twitter launched in March 2006 with founder Jack Dorsey's first tweet: "just setting up my twttr."

With about 23 million active users, this torrent of data can be both prescriptive and predictive. A hot political issue, such as health care, or an international event like the 2009 Iran election protests can gain wide notice quickly. But there's also meaning when users are simply describing "What's happening?" Because Twitter posts are largely public, activity at any moment creates a combined real-time evolutionary snapshot of the "hive mind."

In April 2010, two HP researchers demonstrated how social media can predict the future by studying the collective wisdom of tweets. By developing an algorithm based on the data and excitement level contained within 2.9 million tweets from 1.2 million users over three months, Sitaram Asur and Bernardo Huberman of HP Labs were able to predict the opening weekend box office gross of 24 films to 97.3% accuracy. A second algorithm, analyzing the positive and negative tweets connected to each film, allowed the researchers to predict second-weekend grosses to 94 percent accuracy.

Asur and Huberman used movies for this experiment because of the high volume of available information on Twitter and the easily observed real-world verification of box office receipts. By demonstrating that social media feeds can be effective indicators of real-world performance, the research suggests that Twitter, along with other social media outlets like MySpace, Digg, Facebook, and even more specialized homes for microblogging like LinkedIn or Yammer, may have utility for quantitative analysis. By combining the rate of attention a given issue or product is receiving, the polarity of sentiments and the magnitude of distribution of both—while taking into account the demographics of the social media user—there are opportunities to predict product launches, popular culture behavior and even politics.

Applications of this type of research even go beyond predicting social trends. The growth of cloud technologies will continue to increase our interconnectivity, creating new veins of data throughout the public and private online world. HP's advancements in taming wild information can find applicability in other types of research, helping those in business, medicine, education and energy to design systems that find the underlying meaning behind the noise.

The technologies to connect people, businesses, and experiences are growing each year. These connections rise above the constraints associated with traditional applications, integrations and communications, bringing collaboration to daily life. By seeking—and finding—meaning and value behind diffuse information, HP brings new perspective to the power of today's information economy.

HP Efforts to Provide Knowledge, Tools and Resources for Small Businesses

Given its roots as a start up in a garage in California, HP is reaching out to connect with small businesses throughout the nation.
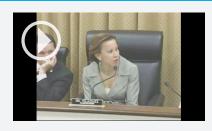
In March, HP and Intel partnered with LinkedIn to form Small Biz Nation, a small business community resource. While every business faces unique challenges—whether attracting investors, finding the best local talent, navigating local government or learning about new technology—every business benefits from knowledge-sharing opportunities. Small Biz Nation allows LinkedIn users to talk with other small businesses and industry experts who can answer questions, helping lead entrepreneurs to the resources and solutions they need to make the right decisions for their businesses.

With our partnership with SCORE, HP is doing its part to provide small businesses counsel to grow. Part of the U.S. Small Business Administration, SCORE mentors entrepreneurs and small businesses, offering face to face and remote counseling, online resources, newsletters, workshops and seminars, as well as guidance toward government grants and other resources.

HP has worked with SCORE to help small businesses learn more about planning for disasters of data loss and the greening of their businesses. This year's eight-city tour focuses on maximizing success through marketing. Topics include including customer segmentation and targeting, marketing in the digital age and driving revenue while operating more efficiently, with lower costs.

Also affiliated with the U.S. Small Business Administration, Business Matchmaking connects small businesses, including minority, women, veteran and disabled veteran-owned firms with clients and suppliers. HP, along with other companies, bring together small businesses with larger companies and government entities for face-to-face selling events, seminars and online training to bolster these firms' business plans, while directing them to grants and other benefits to raise the tide for all boats. In total, Business Matchmaking has set up more than 76,000 seller-buyer meetings—leading to billions of dollars in contracts. Upcoming regional events in California, Texas and Washington, DC this summer and fall will add to the connections, and the growth of small businesses nationwide.

Small Businesses Benefiting from HP Technology

"With the versatility and mobility of HP tools such as the HP Mini our customers are only a click away."

Lindsay Dofelmier,
co-owner of Urban Agent Team

HP customer case study: DVS CEO gains from HP commitment to small business

Two years ago, Paul E. La Vigne, founder and CEO of media firm DVS, took a phone call thinking it was just another sales call, and prepared to politely disentangle himself. It wasn't; it was HP calling to explore whether La Vigne might be interested in serving on the HP Small Business Advisory Council. HP wanted feedback from small-business owners like La Vigne to truly refine its products and services from the customer's point of view. Intrigued, La Vigne joined. At the time, his company owned HP Printers but purchased its PCs from another vendor. Today, having had the opportunity to see HP engineering from the inside, he orders his PCs strictly from HP. La Vigne also is leaving his two-year term on the council with vastly enriched knowledge of technology management and—vitally important—with a wealth of new customer prospects. The HP commitment to small business, he says, is outstanding.

"HP is the most progressive company I know of in giving back to the small-business marketplace," La Vigne says. "You see it in the design and engineering of HP products and services, and the many free offerings such as online business templates and training courses. What's more, HP is a key sponsor of Business Matchmaking, which has opened the door for us to compete for large customers we previously could not reach."

Converged Infrastructure: The Backbone Behind Social Media and IT Services

Electricity prices are rising in most parts of the nation. Greenhouse gas emissions are near the top of legislative agendas worldwide. Meanwhile, IT is growing, with great demand for individuals to put information online, whether through social media, cloud services or IT infrastructure to serve businesses, hospitals and universities.

The pressure is high to build more efficient servers that can operate reliably while using less energy for power and cooling. Advancing data center components and design is at the confluence of public policy, environmentalism, technology and communications. To meet those goals, HP Labs sees a future that creates modular building blocks for hardware, reducing the sprawl that hampers the efficiency of data server technology. Recent advancements and research in server efficiency include:

- POWER MANAGEMENT: HP works with its customers to reduce their power use through temperature-aware scheduling, optimized blade designs and consulting overviews to profile energy use.

- UNIFIED SOFTWARE MANAGEMENT: HP has developed software to manage the internal operations of HP servers. With servers carrying more complex load, from carrying digitized photos and documents to running applications accessed remotely, advanced server software is needed to recognize when to shut portions of a system down to save energy, ensuring as much power is saved as possible.

- SYSTEM ARCHITECTURE AND MEMORY DISAGGREGATION: Each computer has a certain amount of memory for short-term use. By creating a pool of memory within the system, it can be shared among servers and drawn upon when needed, reducing total memory required without harming performance.

- MEMRISTOR: As described in the April edition of The Nation's Capital and HP, Memristor research could lead to a form of memory that merges current short-term memory with disk storage, operating far more efficiently with less power.

- PHOTONICS: HP Labs is developing servers that use optics instead of copper to transfer information. In the future, servers built using optical connections will allow for faster operation with less resistance—and thus, less energy use.

The server industry is higher volume than ever before. HP's advancements will continue to bring seamless performance to consumers, businesses and all who require reliable server infrastructure, while improving power efficiency in our ever-more-connected world.

HP Supports National Lab Day

On May 12, HP announced its support for National Lab Day, committing skilled people, cash donations and HP technology to play an active part in the program. Involvement in National Lab Day fits squarely with HP's broader Science, Technology, Engineering and Mathematics (STEM) transformation goals, aimed at improving education in these subject areas to keep America the worldwide innovation leader. HP involvement will include the donation of skilled resources from HP employees as well as HP retirees, customers and partners.

Beyond National Lab Day, HP is further committed to driving innovation in STEM education through a set of strategic social innovation programs — in the US, and extending across the world. The desired outcomes include increased literacy, improved teaching, and outreach to support underrepresented groups. Examples of HP proactive initiatives include:

- Catalyst Initiative: creating a new global network of education consortia to explore new and more effective approaches to STEM learning.

- HP EdTech Innovators Award: a new global award for education institutions, to recognize pioneering leaders in primary, secondary and tertiary education that have successfully put technology to innovative use inside and outside the classroom

- HP LIFE (Learning Initiative for Entrepreneurs): an expanded training program to support students and micro-entrepreneurs in all phases of the business lifecycle. This supplies IT and business skills training in a blended online/offline innovative approach, for both traditional classroom learning and online game-based simulations.