

Micro-messaging: A Possible Future For PR and Marketing

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Note: This article focuses on the implications of IPv6 to PR and marketing. I have written about IPv6 once before. The article is here (http://www.online-pr.com/Holding/IPv6_article.pdf).

The use of e-mail and cookies for tailored messaging and marketing online is understood. However, we are approaching an era when it might be possible to target appeals to individual devices, whether cell phones, tablet computers, laptops, desktop computers or any other device communicating on the internet. The possibilities for micro-messaging are infinite.

This future is more theoretical than reality because it depends on a momentous change in how the internet operates, a change slow in coming. The shift is the transition from existing internet addressing to a more expansive one – that is, from Internet Protocol version 4 (IPv4) to Internet Protocol version 6 (IPv6). Until the last block of IPv4 internet addresses were given out in early 2011, few paid attention to IPv6 outside of academia. Now there is a growing sense of urgency. However, since major transitions must take place before the future arrives, many PR practitioners and marketers might be retired before the full micro-messaging advantages of IPv6 are available.

For those confused, or bored, by technical jargon, here is a quick explanation why IPv6 is important. The world is running out of IPv4 internet addresses. An internet address looks like an expanded telephone number and acts like one. It is the number that allows one to access a web page, to send an e-mail, to Twitter or text-message. You might think you are calling web pages by names rather than numbers, but you aren't. A name such as www.online-pr.com is a mnemonic overlay to an internet address number (which in online-pr.com's case is 198.63.47.9). When the internet was invented, engineers picked a huge number of possible addresses, thinking they wouldn't need to do it again. That number in 1977 totaled 4,294,967,296 unique, 32-bit, numerical addresses. In 1977, engineers could not have anticipated the World Wide Web nor its exponential growth. In 1998, with blocks of IPv4 internet numbers rapidly being assigned, engineers devised a new addressing protocol – IPv6. This time they chose a vast limit for addresses. IPv6 uses 128-bit alpha-numerical addresses. The new system provides for approximately 340 billion billion billion billion discrete internet addresses, or hundreds of billions of addresses for every human alive. If there ever is a need to transition to an even larger internet address system, it will be many decades away.

The key advantage of IPv6, however, will be a return to end-to-end transparency. That is, there is one IP address, and one address only, for every device connected to the internet. For technical reasons, that is not the case today. My earlier article predicted some possible outcomes for PR and marketing when IPv6 takes over from IPv4 and end-to-end transparency again becomes the way the internet operates.

- Mobility. Because each device has a unique 128-bit numerical address, it is easy for the system to find and recognize a device even when moved from one network to another or from one country to another. A fully developed IPv6 address system, will allow complete mobility of devices. One can transport computers, printers and phones to a site of an event, for example, plug them into the internet and be operational. PR practitioners will always be in the office even though the physical location of the office changes.
- Multicasting. It will be easy to have a CEO conduct a town hall with live internet video feeds to every computer in a corporation, for example. It will be as easy to do the same for financial analysts and investors during quarterly and annual earnings calls.
- Collaboration and sharing. Computers connecting directly to other computers is at the heart of peer-to-peer networking. In a peer-to-peer network, each computer is its own server without need of a central router. IPv6 makes direct contact to another machine easier to achieve.
- Visible connectivity. Internet devices – phones, laptops, tablets, internet-enabled vehicles, etc -- integrated with GPS, can be tracked to exact locations.
- Monitoring and responding: With unique IP addresses it will be harder for activists and others to masquerade under phony IP addresses or anonymous names. While this can be done today using IPv4, it is not as easy nor accurate.

IPv6 will co-exist with IPv4 until there are more IPv6 networks available and the weight of the new addressing system overwhelms the old. However, major internet providers like Google and Yahoo have already changed their systems to run either IPv4 or IPv6, and software operating systems such as Microsoft Windows are ready today to handle IPv6 addresses.

Few technicians, however, were thinking about the marketing and PR advantages of IPv6 at the time of writing. Rather, they were pondering the headaches of transition. For example, the Internet Society will hold on June 8, 2011, *The World IPv6 Day* (<http://isoc.org/wp/worldipv6day/>) in which major internet service providers will participate. The goal of the 24-hour test is to determine how much IPv6 disturbs the current IPv4 system. Equipment makers

are building new telecommunications machinery capable of handling both IPv4 and IPv6, and Internet Service Providers are slowly installing it. Webmasters are conducting discussions of how to handle blacklisting of bots that send cascades of spam e-mail when IPv6 takes over. The fear is that millions of uniquely identified bots will force creation of an unwieldy database system to patrol them and shut them down. And, of course, those who understand IPv6 are training those who don't. (For a detailed technical review, see <http://pages.uoregon.edu/joe/ipv6-training/>)

There has been little discussion to date of the potential messaging and marketing opportunities IPv6 might offer. But, IPv6 will enable micro-segmentation, micro-messaging and micro-marketing to the scale of individuals and their preferred devices, whether cell phone, laptop, desktop, tablet or something else. (There is one exception to this statement, something called "Privacy Addressing," but it is unclear that many will use it.)

So how does this differ from online messaging and marketing today? It will increase accuracy of individual identification. Although one can send an e-mail today and be assured it will get through, that is primitive by comparison to what IPv6 will allow. IPv6 will permit eventually the integration of information about every individual user's devices and suggest ways to best reach that user because each device is uniquely identified.

But, isn't that what happens now? Yes and no. Today, every web site captures the IP "telephone" address of every individual who accesses that site in a log file. Log files list not only the IP address requesting data but also the date and time of the request, the specific web page requested, time spent on that page and several other elements. In other words, your computer, cell phone, tablet or other device sends its address to the web site and requests the web site to deliver its information. The site then sends the information to you at your device's internet address and logs your request. The web site doesn't know who you are. It only knows your internet address. However, today, under the IPv4 protocol, millions of machines are invisible because they use "sub-addressing." That is, when IPv4 addresses began to run out years ago, internet service providers began to give one master address to a local network. The local network then applied a local routing address to identify the computer or other device connected to it. The web page log file does not capture local addresses.

Let's use an example. You work at a company with a network of 5,000 computers. The web site sends its information to the master IPv4 address for the 5,000 computers. A local network computer then attaches a sub-address to the information and routes it to you. It is like a mail room getting letters addressed to John Smith of XYZ Corporation. Clerks in the mail room then deliver the mail to John Smith in Building 44, floor 3, cubicle 21. However, under IPv6, there is no need for local addressing or routing. John Smith will have one address -- and one address only -- for each internet device he has. Each of the 5,000 computers could have discrete IPv6 addresses, as if they were not linked to a

local network at all. It would mean the postman walking to your desk each day and personally handing you your letters rather than delivering a mail bag to the mail room. This end-to-end transparency is the micro-messaging opportunity for PR and marketing.

Unique addressing, however, creates a messaging and marketing challenge. For example, how do you, the message-sender, know that this 128-bit address belongs to John Smith's cell phone? The giant task for communicators will be to associate individuals with the discrete IP numbers of devices they use.

Sometimes this will be easy because individuals will tell you. Most of the time, they won't. This is where massive database technology will take over. Identifying owners of internet devices and keeping that identification updated will be a continuing challenge. For example, each time a person trades in an internet-enabled cell phone for a new one, he or she will get a new, discrete IP number.

So, what do unique IP addresses mean to PR practitioners? Let's say a New York Times reporter has a discrete 128-bit IP number of `2011:0CD9:BW10:FE01:0000:0000:0000:0000` assigned to her tablet computer. The PR practitioner can trace that alphanumeric number through the product web pages the reporter checks on the company web site and how long she has stayed on each page, the bios the reporter checks of company executives, the 10-K annual financial report the reporter looks into in the investor section and e-mails the reporter has sent to company executives from her tablet. The PR practitioner would know quickly enough how well briefed the reporter is and have a sense of what the reporter might be interested in. This allows the practitioner to custom-tailor a message for that reporter, even before she calls the PR department.

How would a practitioner know this IP number belongs to the New York Times reporter's tablet? The practitioner, in addition to storing the reporter's e-mail address, would store her IP number in the media relations database and not only her IP number for her tablet but also the IP numbers for her desktop computer at the Times, her desktop at home, her cell phone and her IP-configured home phone. Such capture requires the reporter to identify herself purposely or accidentally, but once captured and filed, the PR practitioner can track the reporter constantly through database monitoring and sorting.

One can imagine quickly where this leads in terms of key individuals. A practitioner can build individual profiles over time of media, loyal supporters, constant critics and interested parties. One can track media, reward loyal supporters with inside looks at what the company is doing, anticipate what critics will bash next and nurture interested parties into loyalists. Even if a critic remains anonymous, the PR practitioner may be able to track the IP address of a critical message and whether the critic has used the same device to research the company. PR, in other words, could move to personal focus. Rather than public

relations, it could become personal relations in which one anticipates needs, questions and desires of target individuals.

Marketers do custom message-tailoring today with “cookie” technology but IPv6 will be different because it is simpler and native to each device. To quote Wikipedia, a “cookie” is “a piece of text string stored on a user’s computer by their (sic) web browser. A cookie can be used for authentication, storing site preferences, shopping cart contents, the identifier for a server-based session, or anything else that can be accomplished through storing text data.”

“Cookies” are controversial. Some consider them an invasion of privacy, and users have the option of disallowing them or of cleaning them off their devices. However, one cannot access the web without an IP address. As IPv6 takes over, it is possible that “cookie” technology will diminish because there won’t be need for it. Privacy issues will not disappear, but they will be sublimated into a larger discussion of IP address-sharing among organizations. That is, will corporation X be allowed to tell corporation Y that IP address Z has roamed X’s web site? That happens today with cookies but might not happen in the future with IP addresses. Within organizations, however, there will be little barrier to databasing IP addresses and where they have appeared in the company’s web sites and other online presence. Has the person using this device accessed a web page, sent e-mail to the company, participated in a company promotion, asked a question of the CEO? Sooner, rather than later, a company can build a profile of frequent contacts and eventually associate a name and perhaps, a street address for that contact.

The barrier to micro- messaging is the immensity of it for companies with hundreds of thousands, if not millions, of interested parties. That is why raw computer power and processing are needed. IP identification and tracking will rise as the cost of computing drops, and for companies with hundreds or thousands of interested individuals rather than millions, it will be practical sooner rather than later.

What does this mean for the skill sets of PR practitioners? For one, PR practitioners need to become savvy about web analytics, log files and what marketers do online today to custom-tailor advertising and other messages. The future PR practitioner may be someone with greater database skills than writing skills. Secondly, PR practitioners should be finding ways to integrate log files with at least media relations addressing and eventually, key audiences. The aim is to know when a targeted individual accesses the site and what he or she is doing there. Third, practitioners should find ways to forge working relationships with marketers who control customer online databases in use, if the practitioners have not done so already. Fourth, practitioners should start storing IP numbers of reporters and key audiences and not just domain names. That is rather than johnsmith@example.com, one would store addresses “192.0.32.10 (IPv4) and/or 2620:0:2d0:200::10 (IPv6).”

Is it urgent to start? Not yet. There will be years of transition from IPv4 to IPv6. Young PR practitioners today might be in mid-career before IPv6 is dominant. On the other hand, it is not too early to educate oneself on the differences and potentialities of the new addressing system. Those who do and are capable of exploiting IPv6 will steal a march on those still laboring to understand customized online marketing. Moreover, practitioners who understand the potential should be more valuable as their careers progress, and public relations turns into personal relations.

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