Social**networking**

Looking ahead... what's next?

I remember when my new year began with buying a new calendar. Now my business calendar is on Google and green. It silently interacts with me online, reminding me what I told it was important for me to do next. My more human calendar is a stream of my social interactions online. My random 2,000-plus Twitter tweets in 2010 are all about "what happened" to me in between appointments, emails, meetings, calls, texts and sleep. Looking back, I realize how the convergence of social media with the internet has changed my daily life. The shift was instantly felt the minute I overcame my fear and sent my first tweet. Looking ahead, I wonder what's next.

Although social media can change in a day, I still see change in years. As if warp-speed change is not overwhelming enough, the amount of social interaction online is staggering and probably on overload. Today, 550 million people are using Facebook and every day 95 million are posting tweets, 90 million B2B users are connecting on LinkedIn, 3 million are checking in on Foursquare and more than 2 billion videos are seen on YouTube.

What is new will be how this phenomenal new volume of interactions and information will change our consumer behavior, workplace environment and social activism. From the outside, all these connected conversations appear as endless social chatter but on the inside, a "trusted" powerful network of friends, family, fans, customers and clients is being created. Within each sphere people share information about where to shop, what to buy (and not buy), where to meet, who to hire, where to eat, visit and travel, what they just learned or read or heard and more about what is important to them in their lives every day.

Quietly our social networking is transforming our access to each other in even a greater way than the telephone did in 1876 when Alexander Graham Bell transmitted this first sentence to his assistant: "Watson, I want you." Today, Bell would be following Watson on Twitter and tweeting about how social networking is revolutionizing communication.

The difference between the telephone and social media is that this is our collective invention. How it works is dependent on how we use it, and how we "use" social-networking tools to connect, communicate information, build relationships, develop trust, make decisions and expand our ability to influence others changes social networking from the ground up. We define the future for them by using them. It's that simple.

Imagine what could happen if we shift our focus and explore the endless possibilities of using these new communication tools. How can they enable us to make a positive difference in our lives and the lives of others? How do they enhance our human experiences? Do they take away from face-to-face interaction? What are the risks involved in public conversations? Can we use them to protect our privacy? Is social media stimulating the economy? What are the rewards for participating? This is your new year to make a difference and find out. See you online.

EMILY MEDVEC

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Our**waterQuality**

Avoid chemicals with membrane tech

Rapid advances in the technology of semi-permeable membranes are closely linked to skyrocketing global demand for desalinating ocean water. And this developing technology is increasingly being used in residential and commercial applications. The membrane processes used in desalination are applicable for hardness reduction and they are becoming particularly prevalent in areas where softeners are being discouraged or banned.

Membrane technology is a viable alternative to softening. It provides the distinct advantages of not using salt (which can be logistically complicated) and not discharging brine into the environment. Although the term "salt-free softening" appears in advertising, the concept is oxymoronic. By strict definition, water "softening" must involve ion exchange, or the exchange of hardness minerals (primarily calcium and magnesium) with a salt. Whether one uses sodium chloride or potassium chloride, both are technically salts, or electrically neutral ionic compounds composed of an acid and a base and consisting of positively charged ions (cations) or negatively charged ions (anions). In softening, calcium and magnesium are exchanged for sodium or potassium.

In pubic water supplies, a critical requirement for membrane longevity is removing chlorine disinfectants ahead of the membrane. Minor amounts of water are consumed in membrane filtration, but this is also true of softening and the highly over-rated, combination backwashing carbon filters and catalytic systems that are often only manufacturer-certified for contaminant reduction. Membrane filtration provides maintenance advantages over softening by not having to store salts and be vigilant about monitoring minimal levels of salt in brine tanks.

Membrane technology is also a viable replacement for anti-scalant media and catalytic systems, which immobilize hardness minerals and prevent them from precipitating out of solution. We have certainly had mixed results with anti-scalant technology, which is highly susceptible to copper and silica fouling. We know from recent regional water-testing programs that copper is present in local aquifer water in only trace amounts. If you have copper in your household water system, it is normally attributable to low pH, improper electrical grounding or, in some cases, by oversized recirculation pumps that cause eroded copper at 90-degrees turns in plumbing.

In addition to the high hardness levels we experience around Santa Fe, we are often beset by high levels of dissolved silica imparted by the silica-rich strata through which flow our regional aquifers. A frequent complaint we hear about is silica staining, which can occur even with softened water. Water in Las Campanas and northwest Santa Fe has particularly high levels of dissolved silica. Independent lab tests confirm dissolved silica levels as high as 75ppm (parts per million). It is generally agreed that silica levels over about 25ppm can cause staining problems. Nanofiltration greatly reduces silica concentrations and resultant staining. There are some simple tests to determine if the scaling you observe is hardness or silica.

The next coarser size of membranes (relative to reverse-osmosis membranes) is proving to be very effective in integrated, on-demand systems which reduce hardness and silica staining. In our pilot testing, nanofiltration also repeatedly eliminated arsenic and naturally occurring uranium, both of which are commonly present in local public-water supplies, although at levels below the EPA's Maximum Contamination Level.

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