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TECHNOTRENDS® NEWSLETTER

*The biggest ideas that are
changing everything*

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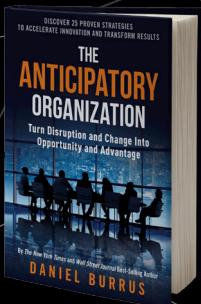
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not being disrupted.

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How to Elevate Trust

By Daniel Burrus, CEO of Burrus Research

Anyone who has heard me speak or worked with me in a consulting capacity knows how much I talk about the transformational impact of technology.

That's certainly true. Since digital disruption and opportunity are accelerating at an exponentially faster rate, it's a topic that's impossible to ignore.

But there's another theme I always address: All the technology in the world is secondary to good relationships between people. And positive, constructive, collaborative relationships between people boil down to a common denominator—trust.

That makes trust a key component of every organization. Here's how to elevate trust—both inside and out.

The Importance of Trust

Good relationships are based on high levels of trust. Research has documented how important trust is to the effective functioning of any group or organization. Researchers at Michigan State University have categorized trust as a “transactional” dynamic that provides a broad foundation for effective relationships and work results. To that end, many companies cite trust on their list of key organizational values.

“Trust comes down to three universal components: honesty, integrity and delivering on promises.”

From my perspective, trust comes down to three universal components: honesty, integrity and

delivering on promises. Why those three? If nothing else, regardless of where you happen to be in the world or the culture in which you're immersed, people hold those three values at an equally high level. Trust is critical, no matter the setting.

In fact, the value of trust becomes particularly obvious when it's been compromised in some manner. Looking at the internal workings of an organization, let's say a company has offered its employees a comprehensive health insurance program for years. It's been a major lure in attracting top talent. One year, in an effort to trim expenses, leadership decides to cut back on certain forms of program coverage—not out of malice, but purely for the financial savings.

Still, the damage is done. Looking back at the three core principles that embody trust, many employees understandably feel that leadership has reneged on a key promise. As a result, many of the most gifted employees begin looking for another place to work, with better coverage. Further, applications from skilled professionals also drop, since a cornerstone of the organization's appeal has been compromised and it's logical to assume other important benefits might change as well.

The same can hold true externally. Let's say this same organization changes its privacy policy. Rather than keeping customer information completely private, it's now selling that data to other companies. The reaction from customers is both predictable and completely justified: “Once, they told me that they wouldn't share or sell my information with anyone else. Now, they're selling it to everyone they can. Not

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TECHNOLOGY NEWS HIGHLIGHTS

Hydrogen-Powered Train

The benefits of hydrogen as a clean alternative to using fossil fuels are well-established.

Environmentally friendly hydrogen fuel cells are capable of producing large amounts of energy with the only by-product being water. Used by NASA since the 1970s to propel rockets into space, they will soon be used to power passenger trains.

The Coradia iLint is the world's first passenger train to be powered solely by hydrogen. It combines clean energy conversion with flexible energy storage and smart energy management to run at speeds up to 140 kilometers per hour. Originally debuted at Berlin's InnoTrans conference last August, successful runs have already been conducted at test sites in Germany and the Czech Republic. The first passenger test runs – on the Buxtehude-Bremervorde-

Bremerhaven-Cuxhaven (Germany) route – are scheduled for early 2018.

The iLint train can travel nearly 500 miles per day with the only sound being generated from the wheels and air resistance. It runs on lithium ion batteries that derive power from a hydrogen fuel system on the roof of the train. The comprehensive solution offered by the manufacturer includes developing the necessary hydrogen infrastructure, which currently utilizes reclaimed hydrogen from industrial processes. In the future, the company plans to supplement hydrogen production with wind energy.

For information: Alstom, 48, rue Albert Dhalenne, 93400 Saint-Ouen, France; phone: +33-01-5706-8000; Web site: <http://www.alstom.com/products-services/product-catalogue/rail-systems/trains/products/coradia-ilint-regional-train/>

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Autism Predictor

Machine learning and artificial intelligence (AI) have become valuable tools for diagnosing illness because of their ability to analyze and correlate huge amounts of data. In a recently published study, researchers have applied this concept to predict whether high-risk infants (i.e., younger siblings of children with autism spectrum disorder or ASD) are likely to develop autism.

In the study, functional magnetic resonance imaging (fMRI) was used to capture the brain activity of 59 six-month-olds, all of whom had an older sibling already diagnosed with ASD. A total of 230 brain regions were scanned, resulting in more than 26,000 neural connections that were analyzed for unique patterns. The data was used to create a machine-learning algorithm that searched for those patterns and compared the results to behavioral tests conducted when the same subjects were two years of age. The algorithm correctly identified nine of the eleven children who ultimately developed autism.

Methods such as this may someday revolutionize healthcare by enabling doctors to develop early preventative interventions for ASD and other diseases or disorders. Identifying risk factors early and with greater accuracy generally results in more positive outcomes. In addition, less invasive diagnostic procedures

can improve accessibility of care in areas of the world where availability of hospitals and healthcare professionals is limited.

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Cooling Bricks

A new 3-D printed brick is designed to cool a room without the need for an external power source. Called Cool Brick, it combines some of the oldest known methods of making clay bricks with the latest in 3-D printing technology to create a structural building material with built-in cooling properties.

To create the bricks, clay is mixed with organic matter and deposited using a 3-D printer to form a three-dimensional, interlocking lattice structure. Upon firing, the organic matter burns away, leaving tiny pores in the brick. When exposed to water, these microscopic holes through capillary action absorb tiny droplets, which evaporate when they come into contact with air. The result is “evaporative cooling” and when it’s multiplied over an entire wall or room, the effect is significant.

The product is currently being exhibited at the

Museum of Craft and Design in San Francisco. Plans to build a full-sized prototype are in the works.

For information: Ronald Rael, Emerging Objects, San Francisco, CA; phone: 510-907-9967; email: design@emergingobjects.com; Web site: <http://www.emergingobjects.com/project/cool-brick/>



Fountain of Youth Revisited

In February, we reported the results of a recent study on the use of teenage human plasma to reverse symptoms of aging in mice. At that time we mentioned that studies were already underway to conduct similar tests on humans, and indeed, a number of controlled clinical investigations are currently being run to assess the effects of young blood on older individuals.

One trial that has received recent attention released some promising preliminary results. However, it is important to note that this particular study has been the target of some controversy due to a lack of peer review and the fact that participants were required to pay \$8,000 to be included.

Approximately 100 subjects between the ages of 35 and 92 were given plasma transfusions taken from donors between the ages of 16 and 25. Blood tests taken before and after treatment revealed an approximately 20 percent drop in carcinoembryonic antigens (a potential indicator of cancer), a 10 percent drop in blood cholesterol

and a 20 percent reduction in the level of amyloids (proteins related to the formation of plaque in the brain) in the blood.

Without a complete medical history, the significance of these findings is difficult to assess. Although positive anecdotal evidence has been reported by some of the participants, without a randomized, placebo-controlled study it is not possible to evaluate the placebo effects. In addition, it appears that the effects may wear off over time, requiring repeated treatments.

Finally, investigators are a long way from being able to determine precisely which mechanisms or pathways are influenced by the young plasma, since inflammatory factors from fat and muscle tissue can also have an effect on brain function.

Once again, it seems as though the more we learn, the more we realize how much we don't understand!

For information: Jesse Kamazin, Ambrosia LLC; phone: 650-714-3163; email: jesskamazinmd@gmail.com; Web site: <https://clinicaltrials.gov/ct2/show/NCT02803554>



Tracking Offline Purchases

Retailers and e-retailers alike are continually looking for ways to maximize their ad expenditures. While online advertising accounts for one-third of marketing dollars, on the whole,

less than 10 percent of total retail sales actually occur online (according to data from the U.S. Census Bureau).

This makes it difficult for companies like Google that are heavily invested in online advertising to justify their services to offline retailers.

Although their service can provide a very comprehensive online profile of the consumer based on cookies and phone location data, bridging the gap between online advertising and offline purchases has been challenging.

But Google recently announced some changes to Google AdWords that will allow retailers to import transactions into their system and correlate them to a user's browsing history using an email address.

The e-commerce giant estimates that it will be able to link up to 70 percent of brick-and-mortar transactions with online exposure, giving advertisers a better idea of which ads are converting into physical sales, and allowing them to fine-tune their marketing campaigns.

All of this, of course, raises privacy concerns for the consumer. Android users in particular have demonstrated their aversion to advertising and tracking by switching off these features.

Ultimately, the balance between privacy and personalization of content will be in the hands of the users.

For information: Google, 1600 Amphitheatre Parkway, Mountain View, CA 94043; phone: 650-253-0000; Web site: <https://www.google.com/about/>

Battery-Free Medical Implants

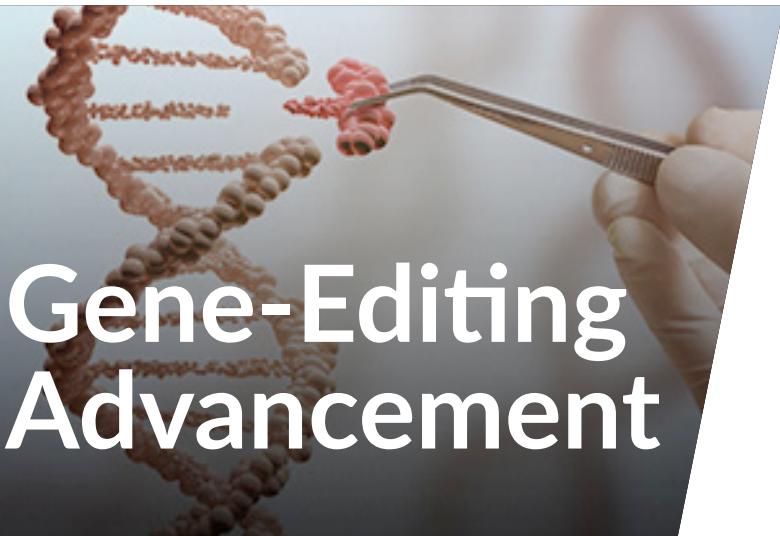
Nearly all of the implantable medical devices in use today have one thing in common – they require some form of battery to function. Over time, these batteries inevitably need to be replaced, necessitating repeat surgeries that can be painful and risky. But researchers have now developed a new type of power source that could eliminate the need for batteries altogether. Known as a “biological supercapacitor,” it harnesses electricity from the electrolytes in biological fluids (like blood and urine) to enable lifelong, battery-free operation of implantable devices such as pacemakers, defibrillators and glucose monitors.

The new “biosupercapacitor” contains a non-toxic, protein-modified graphene oxide electrode while the biological fluids form the electrolyte. The entire structure is only one micrometer thick, yet is strong and flexible enough to withstand the mechanical stresses caused by twisting and turning inside the body. The energy density is comparable to lithium thin film, but it contains none of the toxic chemicals present in traditional batteries.

The supercapacitor is combined with an energy harvester – a device that converts heat and motion into electricity, similar to the way a self-winding watch generates power from the wearer’s movement. Used in tandem, they create a virtually endless source of power that

could be used for a variety of implantable devices.

For information: Islam Mosa, University of Connecticut, Department of Chemistry, 55 N. Eagleville Road, U-3060, Storrs, CT 06269; phone: 860-486-2012; email: islam.mosa@uconn.edu; Web site: <http://chemistry.uconn.edu/>



Gene-Editing Advancement

Up to 20 human clinical trials will soon be underway using CRISPR genome-editing technology. CRISPR (which stands for clustered regularly interspaced short palindromic repeats) works by modifying specific segments within a DNA sequence to disrupt abnormal gene expression and even correct mutations that cause genetic diseases. Conditions currently being studied include breast, prostate, bladder, esophageal and colorectal cancers as well as HIV.

Up until now, CRISPR involved removing cells from the body, disabling specific receptors, and then returning them to the body. But a new study slated to begin in China will attempt, for the first time, to edit cells while they are inside the body. The target will be human papillomavirus (HPV) and the CRISPR mechanism will be delivered via a gel applied to the cervix. The goal is to destroy cells infected by HPV before they become cancerous, while leaving healthy cells untouched.

For information: First Affiliated Hospital of Sun Yat-Sen University, 58 Zhongshan 2nd Road, Yuexiu Qu, Guangzhou Shi, Guangdong Sheng, China 510080; phone: +86-20-2882-3388; Web site: <http://www.sysu.edu.cn/2012/en/index.htm>



A new security solution employs quantum physics to make counterfeiting impossible. Quantum IDs (Q-IDs) use state-of-the-art nanomaterials to deliver a physically unclonable fingerprint for everything from luxury goods to pharmaceuticals.

The devices, which are smaller than the width of a human hair, are available in two versions - electronic and optical. The optical Q-IDs can be scanned using a smartphone and an inexpensive optical filter, making them ideal for supply chain management, product protection and consumer authentication applications. The electronic versions are well-suited for authentication and unique identification of equipment and devices. And unlike most anti-counterfeiting technology, Q-IDs can be turned off or reset in the event a product is lost or stolen.

Pirated goods cost hundreds of billions of dollars in lost revenue every year, and counterfeit medications pose a serious health hazard. New technologies that make it possible to identify forgeries and fakes have the potential to eliminate costly and dangerous threats.

For information: Quantum Base, InfoLab 21, Lancaster University, Lancaster LA1 4WA, United Kingdom; email: info@quantumbase.com; Web site: <http://quantumbase.com/>

How to Elevate Trust

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only does that make me feel as though I've been lied to, what's the next promise they're going to break?" History has shown that moves like this will lead to customers' leaving you and not returning.

Just as important, doubling back and trying to correct a trust misstep takes time, money and will never completely repair the damage. Suppose the organization we're talking about reinstates its health care program or discontinues the sale of customer information. Even though things are back to the way they were, a seed of mistrust has nonetheless been planted. Phrased another way: Sure, they've corrected their mistake, but they proved they're capable of doing it. Who knows what else they might do in the future if they think they can justify it?

From a brand perspective, every brand has a brand promise, even if it is not stated in writing. In a way, the brand promise is the brand. I know what to expect from McDonald's, Hyatt and Amazon. If you undermine the brand promise and the trust that goes with it, you undermine your brand.

The Value of Anticipatory Thinking

In my upcoming book, [The Anticipatory Organization](#), I illustrate the importance of anticipatory thinking and actions that go beyond reacting quickly after a problem occurs (agility) by teaching skills and strategies individuals and organizations of all sorts can employ to, in this case, solve problems before they have a chance to occur. Nowhere might that strategy be more valuable than in anticipating the effect of certain actions and decisions on the level of trust.

It's a fairly straightforward process. Prior to making any sort of significant change or implementing a new policy, first, consider the level of trust you have with the people who stand to be affected by those decisions. Then, think about the ramifications on trust—will the trust level be enhanced by that change, will it be compromised or will it remain

roughly the same?

If trust stands to improve, that's a powerful rationale for moving forward. Even if trust stays where it is, that is good evidence that the decision makes sense. On the other hand, if trust stands to suffer, you should give serious thought to what you could do to change how you implement a change so that trust remains constant, or better yet is elevated.

That doesn't necessarily mean that the change you desire is simply out of the picture from the standpoint of trust. Perhaps a few tweaks would be sufficient to mitigate any negative impact on trust. For instance, in the case of the organization deciding to sell customer information, alter the policy somewhat so it only applies to new customers. With regard to health care coverage, keep the current program in place and apply the less-generous coverage exclusively to new employees. In addition, provide an incentive for current employees to accept the new coverage plan. Granted, those choices may still have a negative impact—new customers may be wary of the new information policy, and your company may not be quite so attractive to prospective employees—but at least you've maintained the same level of trust with the people with whom you already have a relationship.

Trust: Reward the Innovation You Desire

Another core component of my [Anticipatory Organization Model](#) is innovation—more specifically, the imperative that organizations actively encourage innovations of all types and at all levels. Although many may associate innovation with products and services, so, too, can more abstract entities benefit from innovative thinking. That applies to trust.

The question is how to encourage innovative thinking when it comes to the matter of trust—or, for that matter, any sort of innovation. Here, another central Anticipatory Organization principle comes into play: To create the behavior you want, reward it accordingly. If trust is central to your organization's philosophy and activities—and it certainly should be—let your employees know that you openly welcome suggestions and ideas that boost trust.

For instance, let's say an employee suggests implementing flex work hours—rather than set times where employees are expected to arrive and leave, trust them to set their own schedules to complete the work they know needs to get done. Should someone pose that idea, reward that person with a set of gift cards or movie tickets (even better, recognize them so others can see the benefits of the rewards program firsthand). If another employee comes up with the idea of a generous customer reward program, the president might send them a personal, handwritten letter of gratitude, or you could simply offer them a cash bonus.

No matter the specifics of the trust-building suggestions, the formula is clear. If you make it evident that ideas regarding innovation—including trust—can bring attractive rewards, people will inevitably invest the time and energy to at least give them some thought. And that's a mind-set you would do well to encourage, when it comes to trust or most any other sort of innovative thinking.

Elevating Trust: Its Value Cannot Be Overstated

Any core organizational value or policy that's of genuine, long-lasting benefit takes time to put into place and maintain. The same holds true for trust.

Trust doesn't just appear out of thin air. It has to be earned. That means conscious, ongoing attention to the three core components of trust that I cited earlier: honesty, integrity and delivering on the promises you make to both those within your organization and those on the outside. That also means an awareness of the danger of trust that's been compromised—once lost or even watered down, trust can be difficult, if not impossible, to regain.

To that end, here are a few final thoughts that can help build a pervasive environment of trust:

- **Be as Transparent as Possible.** An environment of trust that exists within the confines of secretive leadership is a hard thing to imagine. Understand what employees need to know and keep them informed. Trust is undermined when you are impacted by a change that you didn't see coming.

The majority of those changes that seemed to come out of the blue were there to see if they would have been revealed ahead of time. Encourage a two-way dialogue that communicates the “why” of change rather than just informing about the change (yet another valuable anticipatory organization distinction).

- **Understand that Mistakes Will Happen.** With innovation comes the inevitability of mistakes and outright failure. Rather than criticizing mistakes or treating them as counterproductive missteps, accept them as a constructive part of the innovation process. Not only does that serve to further an environment where innovation is encouraged, it also strengthens a sense that an organization's leadership trusts its people to learn from those mistakes and continue to move forward.

- **Be Consistent.** This may be as valuable a bit of guidance as exists with regard to trust. Trust that's here today only to be compromised tomorrow can hardly even be called trust. Again, even a slight misstep when it comes to trust can plant a hint of destructive doubt in anyone's mind. To that end, make it clear in your mind what trust means to you and your organization and, from there, act on it as consistently as possible every day.

In another [blog](#) I wrote several years back, I made the point that trust will shape your company's future. If anything, I'm more convinced of that than ever. An environment of trust forms the basis for everything you and your organization wish to achieve, be that financial, social or some other objective.

If you have an environment of trust in place, you've set the stage to implement whatever steps are necessary to reach your goals and, quite possibly, exceed them. Lacking trust, progress toward important objectives only becomes hindered, if not simply impossible. Organizations that recognize this reality are already far ahead of those that dismiss it.

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