

# VALUABLES

Ideas, Systems and Strategies for Managing Family Wealth to Fulfill Your Greatest Values.

## About VALUABLES

Many financial advisors focus on communicating with clients to provide complex analysis of the investment markets and economies. However, we have learned that most clients are not particularly interested in this complex analysis. Most clients hire an advisor for their knowledge of the markets, not for their ability to explain that knowledge. Most want to know what time it is, not how to build a watch.

Experience has taught us that wealthy families care most about using their wealth as a means to a desirable end, which is to achieve a more satisfying, fulfilled and impactful life, and to fulfill their most important Life Values.

**VALUABLES** is a periodic article series focused on the concepts, systems, and habits which we have observed among families who have been successful in this quest to use their wealth as a tool to live a life of significance. The most successful families share a set of habits, systems, and insights which enable them to use their wealth as a tool to fulfill their Values and what is most important to them.

We are naming this article series **VALUABLES**, because it will provide an exploration of those habits, systems, and insights. We hope it will help you to consider your assets and possessions which are most valuable to you, and how you can use your financial wealth to enhance and cultivate your true "Valuables".

## What a World! The Internet of Things

By Erik Strid

*To look at this from a more expansive angle, consider that we now live in a world where Google's autonomous car can cruise our streets safely because of a rooftop sensor called LIDAR – a laser based sensing device that uses sixty four eye-safe lasers to scan 360 degrees while concurrently generating 750 megabytes of image data per second to help with navigation. Pretty soon, though, we'll live in a world with, say, two million autonomous cars on our roads, seeing and recording nearly everything they encounter, giving us near-perfect knowledge of the environment they observe.*

– Peter Diamandis and Steven Kotler from

[BOLD: How to GO BIG, CREATE WEALTH, and IMPACT THE WORLD](#)

### A Positive Focus

In our experience advising families, there is one trait that clearly stands out as critical to achieving a great quality of life and fulfillment, as well as leaving an important legacy for future generations. Families who are able to master the skill of **Gratitude and a Positive Focus** tend to be happier and enjoy a better quality of life, and also to extend their success and legacy over many generations.

Many of our client conversations are centered on the stock market and the economy, and the implications for the outlook for the future of the world. Very often, this leads to a discussion of all of the many problems the world currently faces, and everything that is wrong today in the world of politics, economics, and business. The daily gyrations of the stock market, combined with a healthy dose of media sensationalism, can cause us to become quite fixated on what isn't working in the world. An alternative view is to take a Positive Focus, and consider all of the amazing things that are happening in the world today. Thanks to the internet, the world is literally *bursting* with communication, innovation, and world changing technology right before our eyes. We are living in an era which is unprecedented in the pace of positive change sparked by technology. Perhaps this is the real reason the stock market keeps going up!

### The Internet of Things

We have often heard the term "The Internet of Things" in the last few years, and have been wondering what that means. So this quarter, we found an article that explains how incredibly powerful advances in both connected computer networks, and ultra- sophisticated sensors are changing the way we live our everyday lives in fundamental and exciting ways, including the reality of a self-driving car! As the article below will explain, the combination of expansive networks and ubiquitous sensors are being combined to create a world in which all things are truly connected.

We recently read a wonderful book written by Peter Diamandis and Steven Kotler called [BOLD: How to GO BIG, CREATE WEALTH, and IMPACT THE WORLD](#), in which the authors discuss the powerful combination of networks and sensors. Please enjoy the following excerpt from this excellent book!

### Networks and Sensors

A network is any interconnection of signals and information – the human brain and the Internet being the two most prominent examples. A sensor is a device that detects information – temperature, vibration, radiation, etc – and when hooked up to the network, can also transmit that information. Right now, both sectors are exploding.

There are over seven billion smartphones and tablets in existence. Each of these devices is a mix of sensors – pressure-sensitive touch screens, microphones, accelerometers, magnetometers, gyros, cameras – that are increasing in number with every new generation of technology. Consider capacitive touch screens – like those found in iPads and iPhones. In 2012, the total area covered by these sensors was 12 million square meters, or enough to blanket two thousand football fields. By 2015, that number will balloon to 35.9 million square meters, or enough to overlay half of Manhattan.

And it's not just communication devices. A similar pattern is playing out in all our "things", transforming a world that was once passive and dumb into one that is active and smart. Take the transportation sector. Today there are sensors in our cars to help us navigate, in our roads to help us avoid traffic jams, and in our parking lots to help us find open spaces. Commercial aircraft are also in the mix. General Electric – which manufactures and leases jet engines to all major airline – now puts up to 250 sensors in each of their 5,000 leased engines, allowing their health to be monitored in real time, even in midflight. And if the readings fall outside of prescribed levels, GE can swoop in and do a preemptive fix.

Security-related sensors have also exploded onto the scene. Today's all-pervasive video surveillance cameras, now coupled to databases stocked with 120 million facial images, give law enforcement unprecedented search capability. But beyond looking for trouble, our sensors can listen as well. Take ShotSpotter, a gunfire detection technology that gathers data from a network of acoustic sensors placed throughout a city, filters the data through an algorithm to isolate the sound of gunfire, triangulates the location within about ten feet, reporting it directly to the police. The system is generally more accurate and more reliable than information gleaned from 911 callers.

While transportation and security are sectors primarily dominated by larger companies, this doesn't mean that entrepreneurs have

not taken advantage of these same exponential trends. As a 2012 Wired article pointed out: "Hackers have begun using increasingly inexpensive sensors and open source hardware – like the Arduino controller – to add intelligence to ordinary objects." There are now kits that let your plants tweet when they need to be watered, Wi-Fi connected cow collars that let farmers know when their animals are in heat, and a beer mug that can tell you how much you've drunk during Oktoberfest!

To look at this from a more expansive angle, consider that we now live in a world where Google's autonomous car can cruise our streets safely because of a rooftop sensor called LIDAR – a laser based sensing device that uses sixty four eye-safe lasers to scan 360 degrees while concurrently generating 750 megabytes of image data per second to help with navigation. Pretty soon, though, we'll live in a world with, say, two million autonomous cars on our roads... seeing and recording nearly everything they encounter, giving us near-perfect knowledge of the environment they observe. What's more, ubiquitous imaging doesn't stop there. In addition to those autonomous cars scanning the roadside, by 2020, an estimated five privately owned low-Earth-orbiting satellite constellations will be imaging every square meter of the Earth's surface in resolutions ranging from .5 to 2 meters. Simultaneously, we're also about to see an explosion of AI-operated microdrones buzzing around our cities and taking images down in the centimeter range. Do you want to know how many cars are in your competitor's parking lot in Moscow or Mumbai? Or how about following your competition's supply chain as trucks or trains deliver raw materials to their plant and final product to their warehouses? No problem.

All told, according to a report released by the 2013 Stanford University TSensors Summit, the number of sensors in the world is expected to grow into the "trillions" by 2023. And this is merely the sensor side of the equation. Both in speed and in the number of connected devices, networks are undergoing a similar explosion. On the speed side, consider that in 1991, early 2G networks clocked in at a hundred kilobits per second. A decade later, 3G networks hit one megabit per second. But in February 2014, Sprint announced plans for Sprint Spark, a super high speed network able to deliver 50 to 60 megabits per second to your mobile phone, with a vision of tripling that over time...

On the connection front, ten years ago, the world had 500 million devices hooked up to the Internet. Today, that number is up to

12 billion. “In 2013”, says Padma Warrior, the chief technology and strategy officer of Cisco, “eighty new things were being connected to the Internet every second. That’s nearly 7 million per day, 2.5 billion per year. In 2014, the number reached almost 100 per second. By 2020, it’ll grow to more than 250 per second, or 7.8 billion per year. Add all of these numbers up and that’s more than 50 billion things connected to the Internet by 2020.” And it’s this explosion of connectivity that is building the Internet-of-Things (IoT).

A recent study by Cisco estimates that between 2013 and 2020, this uber-network will generate \$19 trillion in value (net profit). Think about this for a moment. The U.S. economy hovers around \$15 trillion a year. Cisco is saying that over the ten-year period, this new net will have an economic impact greater than America’s GDP. Talk about the land of opportunity.

So where does that opportunity lie exactly? Well, most researchers feel that there are two critical categories worth exploring: information and automation. Let’s start with the former.

Our world of networks and sensors generates enormous quantities of information, much of which is extremely valuable. Take traffic data. A decade back, Navteq built a network of in-road sensors across 400,000 kilometers of Europe. In October 2007, mobile phone giant Nokia paid \$8.1 billion for that network. Fast-forward five years to mid-2013, when Google paid \$1 billion to acquire Waze, an Israeli-based company that generates maps and traffic information, not via electronic sensors, but instead via crowdsourced user reports – i.e., human sensors, generating maps by using GPS to track the movements of some 50 million users, then generating traffic-flow data as those users voluntarily share information about slowdowns, speed traps, and road closures in real time.

Behavior tracking is another fast-growing category. Insurance companies putting sensors in cars and pricing policies according to real-time driving behavior is one example. Another is Turnstyle Solutions, a Toronto-based startup that uses Wi-Fi transmission from smartphones to follow customers around stores, gathering data on where they linger as they shop. Behavior tracking for health care is also growing. AdhereTech now makes smart pill bottles with sensors embedded in them to better ensure patient compliance, while CoheroHealth has combined sensor-enabled inhalers and mobile apps so kids with chronic asthma can track and control their symptoms,

Turning our attention to automation – which is essentially the process of gathering all the data collected by the IoT, turning it into a series of next actions, then then, without human intervention, executing those actions. Already, we’ve seen the first wave of this in the smart assembly lines and supply chains that have enabled things like just-in-time delivery. With the smart grid for energy and the smart grid for water – what’s technically called resource consumption optimization – we’re seeing the second wave. Next up is the automation and control of far more complex autonomous systems – such as self-driving cars.

There are even further opportunities in finding simpler ways to connect decision makers to sensor data in real time. The aforementioned plants that tweet their owners when they need watering were an early (2010) iteration of this sector. A more contemporary example (2013) is the Washington, DC-based startup SmartThings, a company that CNN called “a digital maestro for every object in the home.” SmartThings makes an interface that can recognize over a thousand smart household objects, from temperature sensors that control the thermostat to door and windows sensors that tell you if you left something unlocked to ways to have appliances automatically shut off before you go to bed.

## A Valuable Message

We hope that you enjoyed our message in this month’s VALUABLES, and we love it when you share our articles. So feel free to post this on Facebook, Twitter, or any other form of social media. You might also feel free to email out to a friend or family member who might appreciate it.

At the very least, if you liked this message, do us a favor and visit our blog and “Like” this post to let us know, and be sure to leave a comment or question. We love to hear from people about the issues they are facing so we offer our take and share what we have learned from our time servicing clients and their families.

To like, share or leave a comment about this article, just visit this post on our blog by [clicking HERE](#).

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