The Genius of "One Percenters" Is Their Amazing Command of the Obvious

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* Arkansas merchant Sam Walton opened a store called Wal-Mart to offer people everyday bargains. He focused on under-served markets, expanded his business aggressively and became a billionaire. Why didn't anybody else do these things long ago? We all know people would rather pay less than more.

* The U.S. Post Office doesn't seem to deliver routine mail any faster than it did one or two hundred years ago, yet postal rates keep going up. Why, then, did it take so long for someone – Mississippi-born college student Fred Smith – to do the obvious thing and start pursuing the idea of a nation-wide overnight delivery service in the form of FedEx? He too became a billionaire.

* Swiss electrical engineer George de Mestral loved to hike in the mountains, and he wondered how burrs got stuck in his pants – a phenomenon that almost all of us have seen at one time or another. Mestral studied the burrs and noticed how tiny hooks caught the loops of fabric. He got an idea for a new kind of fastener: tiny hooks on one side and tiny loops on the other. Such a fastener might be more convenient than zippers – just press the two sides together. Although Mestral hadn't been looking for a better fastener, he began to tinker and eventually obtained a patent for what became known as Velcro.

* And what could be a more obvious road to riches than hamburgers! Some people did very well selling cheap, consistently good hamburgers with fast service, but they were content to keep their business local. When Illinois kitchen equipment salesman Ray Kroc came along, he immediately recognized the obvious, that such a business could be expanded nationally and internationally, and he went on to make his fortune. We know his creation today as McDonald's.

These are just a few examples of people who displayed an amazing command of the obvious. They learned to be keen observers of what was happening around them. They observed actively and reflected on the meaning of what they saw – even if it was unexpected. They had intellectual curiosity and were always wondering why things happened as they did. They understood that criticism or failure could be an opportunity in disguise. People with an amazing command of the obvious seem to enjoy being observers in this ever changing world. More examples:

Saratoga Springs, New York hotel chef George Crum reportedly had a customer who complained that his fried potatoes were too thick and soggy. Crum tried slicing the potatoes paper-thin and stir-frying them so they would be crisp. The customer was delighted, and plenty of other people were, too. They became a regular item on the menu, known as Saratoga Crisps. Later, of course, somebody started calling them potato chips.

Greek-born physician Georgios Papanikolaou did research to find out exactly what happened during a woman's menstrual cycle. He studied samples of vaginal fluid under a microscope. After examining many slides, he came across one with recognizable cancer cells. It turned out the patient, in fact, had cancer. Papanikolaou realized that a simple test on a small, easily obtained sample of vaginal fluid could provide an early warning sign of cancer. Hence, the "Pap test" that helps save lives.

English researchers Peter Dunn and Albert Wood were investigating compounds that had potential to lower blood pressure. One of the compounds didn't work as hoped, and the temptation was to cross it off the list, stay focused on the search for an anti-hypertensive and move on to the next compound. But many men who tried the dud drug reported experiencing more erections. Instead of accelerating blood flow to the heart, the compound accelerated blood flow to the penis. The alert researchers realized they might be onto something, although it wasn't what they were looking for. Further investigation confirmed the unanticipated effects of the compound. It was patented and approved by the U.S. Food & Drug Administration for treating erectile dysfunction. Dubbed Viagra, Pfizer's unexpected innovation has generated annual revenues over $1 billion.

When Patsy Sherman went to work as a research chemist for the 3M company in 1952, she was assigned to work on fluorochemical polymers (large molecules with fluorine). "We were trying to develop a new kind of rubber for jet aircraft fuel lines," she explained, "when one of the lab assistants accidentally dropped a glass bottle that contained a batch of synthetic latex I had made. Some of the latex mixture splashed on the assistant's canvas tennis shoes." Sherman and one of her associates Sam Smith found that the mixture couldn't be washed off, even with a solvent. Nor, for that matter, could Sherman or Smith get the tennis shoes dirty, because they were protected by the hardened mixture.

Sherman and Smith weren't looking for something to protect fabrics, but they recognized that's what they had, and it was potentially useful. It went on sale as Scotchgard in 1956, and it became the most widely-used treatment for protecting clothes, shoes, furniture and carpets, among other things.

At Cincinnati-based soap-maker Kutol Chemicals, Noah McVicker came up with a compound for cleaning wallpaper. His nephew Joseph McVicker learned that nursery school children were playing with it, because it could be easily modeled, it didn't stain anything, and it was nontoxic – principal ingredients included flour and water.

Joseph McVicker wondered if there might be commercial possibilities. He and Noah established Rainbow Crafts Company to market the compound as Play-Doh. It proved to be popular, and the McVickers obtained a patent for it in 1965. That year they sold Rainbow Crafts to General Mills. Play-Doh came to be distributed in some 75 countries, with hundreds of millions of cans sold.
In 1933, Ralph Wiley was frustrated by a glass dish with something stuck in it. He was a college student whose job was to clean laboratory equipment at Dow Chemical. Regardless how hard he scrubbed, the material in the dish just couldn't be removed. He called it "eonite," referring to something in the "Little Orphan Annie" comic strip that couldn't be destroyed. It was actually polyvinylidene chloride, apparently the result of some forgotten experiment. Wiley called attention to its amazing strength.

During World War II, Dow Chemical sold polyvinylidene chloride to the U.S. Navy for spraying on airplanes, protecting the metal against corrosion from salt spray. After the war, somebody realized that if it was impervious to salt spray, it might work as food packaging. Impervious to air, it could help prevent food spoilage. Impervious to anything that involved water or oil, the compound could help food retain flavor. It was introduced as clear, clingy Saran Wrap in 1949.

During the late 1950s, medical researcher Dr. Wilson Greatbatch, in Buffalo, New York, met a couple of brain surgeons. He recalled, "They taught me about complete heart block — how a nerve bundle that carries the 'beat' signal from the auricle to the ventricle in the heart becomes nonfunctional." In the barn workshop behind his house, Dr. Greatbatch began work on a device to measure a patient's heartbeat. The aim was to provide an early warning for high risk heart patients. In the event of a heart attack, doctors used a bulky device producing a painful electric shock to get a heart beating again.

When transistors became available, Dr. Greatbatch experimented with them. His circuit called for a 10,000-ohm brown-black-orange transistor, but he mistakenly picked up and inserted a brown-black-green transistor – a million ohms — into his oscillator. It produced a regular electrical pulse that was similar to the pulse of a healthy heart. He realized a pacemaker to assure steady heartbeats would be much more important than a device that merely measured heartbeats.

He spent two years refining a pacemaker and enclosed it in epoxy resin. Electrodes went to the myocardium of a patient's heart. For a battery, he used Mallory mercuric oxide-zinc cells. Dr. William Chardak and Dr. Andrew Gage inserted 40 of these pacemakers into laboratory animals, and they worked. The surgeons inserted pacemakers in 10 patients who volunteered, because their hearts were failing, and again success. Dr.

Greatbatch was granted a patent for his implantable pacemaker in 1962, and he licensed manufacturing rights to the Minneapolis-based Medtronic Corporation. More than 600,000 pacemakers are implanted annually now.

Percy Spencer, an orphan from Maine, never went to college, but he had great curiosity, and again and again he demonstrated an amazing command of the obvious. He started working in a mill when he was 12, became a self-taught electrician, learned telegraphy and everything he could about radio. He got a job with Raytheon when it was a small, fast-growing manufacturer of electronic tubes during the 1920s. This brought him into contact with physicists from MIT. In 1929, he was experimenting with a photoelectric vacuum tube when he noticed a leak. The general practice was to throw away tubes with a leak, but Spencer was curious about the properties of this tube. Its photoelectric quality had increased by a factor of 10, and this turned out to be a step toward the development of television.

During World War II, Spencer supervised production of combat radar equipment for MIT's Radiation Laboratory. The British were desperate for microwave radar to help defend themselves against German bombers, but the production process was slow. A tube was machined from solid copper, which took a week. Spencer managed to get production up to 100 tubes per day, but this wasn't nearly enough. He considered the obvious: that it was far easier to machine a thin sheet of copper than a solid block of copper. Then he came up with a solution: rather than cut a tube out of solid metal, cut cross-sections out of thin copper sheets, then stack them together to form a tube and cook them into a single unit. Production soared to some 2,600 radar tubes per day. One M.I.T. scientist remarked, "An educated scientist knows many things that don't work. Percy doesn't know what can't be done."

In October 1945, Spencer visited a testing lab for magnetrons, as radar power tubes were called, and he felt a peculiar sensation: the melting of a peanut chocolate bar in his pocket. As it turned out, the same kind of thing had happened to others in the Waltham, Massachusetts lab, but nobody thought much of it. Spencer was curious. He had someone go out to get a package of popcorn kernels. When he held it near a magnetron, the kernels soon began popping. He placed an uncooked egg near the magnetron, and the egg exploded – apparently the yolk in the center cooked much faster than the white around it. Spencer confirmed that food could be cooked with high frequency radiation. He went on to design a "radar range" and obtained a patent for it. Initially used in restaurants, ocean liners and railroad dining cars, this became the microwave oven, among the most popular household appliances.

Why do most people often miss the obvious? For starters, we're bombarded with so much information that it's hard to think about everything. Also, there's a tendency to ignore things that are contrary to firmly-held beliefs. For example, during the 1800s, doctors bitterly denounced the idea that they – whose mission was to heal the sick — could be spreading deadly infections, and for decades they resisted the practice of washing their hands between patient visits. Another example: in 1920, the Austrian economist Ludwig von Mises identified the reasons why a socialist economy could never match dramatically

improved living standards that free markets provide for millions and millions of ordinary people, but influential socialists didn't begin to concede the point for seven decades – when the Soviet Union was collapsing.

As Nobel Laureate Albert Szent-Gyorgyi remarked, "Discovery consists of seeing what everybody has seen and thinking what nobody has thought."

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