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SENIORS/BOOMERS NEWSLETTER

"THE RETIREMENT EXPERTS"

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In picking the lesser of two evils, I always go with one I haven't tried

Mae West

Investing can sometimes seem like a mysterious series of choices between one thing and another; this thing and that. There are so many variables to examine, where do you start?

Depending on what newsletter writer you're reading, or talking head you're listening to, you'll probably get hundreds of opinions. Well, in this newsletter, I'll give you my two cents.

I begin by asking a rhetorical question. Wouldn't it be great to have a crystal ball to see into the future? Something to give you an early heads-up of what the next, new innovation is going be; the next 'best-est thing'...the next first P.C. computer; the next Microsoft Windows software; the next I-Phone?

With this kind of knowledge, it would make it a lot easier to pick the companies that have the best chance of success offering you **your** best chance of success? Well, you kinda do.

What it is...is following trends. Once you identify a trend, you find the company(s) in the forefront of that trend, drill down on your research and become an early investor.

I have read several fascinating articles written by Dr. Robert Goldman, Co-Founder & Chairman- of Academy of Anti-Aging Medicine. What follows are quick excerpts of what he sees and how these changes will affect us.

There is a lot to absorb with what follows, and although some of it may seem like science-fiction, I have verified anything that is/was verifiable. Science fiction is becoming reality and some of it is down right scary!

Future Predictions: In 1998, Kodak had 170,000 employees and sold 85% of all photo paper worldwide. Within just a few years, their business model disappeared and they went bankrupt. What happened to Kodak will happen in a lot of industries in the next 10 years - and most people don't see it coming. It will now happen with Artificial Intelligence, health, autonomous and electric cars, education, 3D printing, agriculture and jobs. Welcome to the 4th Industrial Revolution. Welcome to the Exponential Age.

Artificial Intelligence: Computers have become exponentially better in understanding the world. This year, a computer beat the best Go player in the world, 10 years earlier than expected. In the US, young lawyers already don't get jobs. Because of IBM Watson, you can get legal advice (so far for more or less basic stuff) within seconds, with 90% accuracy compared with 70% accuracy when done by humans.

Medicine: Watson already helps nurses in diagnosing cancer, four times more accurate than human nurses. Facebook now has a pattern recognition software that can recognize faces better than humans. By 2030, computers will become more intelligent than humans.

There will be companies that will build a medical device (called the "Tricorder" from Star Trek) that works with your phone, which takes your retina scan, your blood sample and you breathe into it. It then analyses 54 biomarkers that will identify nearly any disease. It will be cheap, so in a few years everyone on this planet will have access to world class medicine, nearly for free.

Super Computers Replacing Your Doctor? Supercomputers with artificial intelligence taking better care of you than your Doctor? IBM Watson has partnered with Celgene to better track negative drug

side effects and IBM is applying its cognitive computing AI technology to recommend cancer treatment in rural areas in the U.S., India, and China. For example, IBM Watson could read a patient's electronic medical records, analyze imagery of the cancer, and even look at gene sequencing of the tumor to figure out the optimal treatment plan for a person. The IBM Watson programs are able to instantly scan the world's medical literature data for making a diagnosis and treatment plan, so in the future a nurse or tech may be able to do a more detailed evaluation than even a team of doctors. And coupled with advanced MRI, CT and PET scans, view the inner body in mind-boggling ways and even treat cancers and other issues at the microscopic level. This will turn the medical profession on its ear. (Fortune Magazine)

Agriculture: There will be a \$100 agricultural robot in the future. Farmers in 3rd world countries can then become managers of their fields instead of working all day on their fields. Agropics will need much less water. The first Petri dish produced veal is now available and will be cheaper than cow-produced veal in 2018. Right now, 30% of all agricultural surface is used for cows. Imagine if we don't need that space anymore. There are several startups that will bring insect protein to the market shortly. It contains more protein than meat. It will be labeled as "alternative protein source" (because most people still reject the idea of eating insects).

Longevity: Right now, the average life span increases by 3 months per year. Four years ago, the life span used to be 79 years, now it's 80 years. The increase itself is increasing and by 2036, there will be more than one year increase per year. So, we all might live for a long long time, probably way more than 100.

Education: The cheapest smart phones are already at \$10 in Africa and Asia. By 2020, 70% of all humans will own a smart phone. That means, everyone has the same access to world class education

It is estimated that the doubling time of medical knowledge in 1950 was 50 years; in 1980, 7 years; and in 2010, 3.5 years. In 2020 it is projected to be 0.2 years—just 73 days. Computer power is doubling every 18 months, so massive increases in scope and scale. Get ready for the first complete synthetic human brain, moon mining, chips implanted in our brains, self-driving cars, trucks and planes, robotic moon

bases and maybe even a high-speed rail linking London to Beijing.

Radical Life Extension: Billions of dollars have recently flowed into Anti-Aging Medical research, from the likes of Silicon Valley & Biotech Startups chasing after the 'Fountain of Youth'. They finally realize that Anti-Aging & Regenerative Medicine is the next generation of healthcare -the age of PRACTICAL IMMORTALITY, where lifespans of 120 to 150 in superior health may become commonplace and may be seen as early as 2029.

New Energy Sources: Where we get our energy from will change dramatically. The U.S. military has pledged to get half its energy from renewable resources by 2020, and the Navy whole-heartedly believes it can turn to 50 percent biofuels by then. It makes political sense not to rely on volatile regions for energy, and this push could mean both cleaner vehicle fleets and a major bump in the competitiveness of biofuels in the market. The strangle hold that Middle Eastern oil holds will soon be an ancient memory. Biofuels and renewable clean energy are growth industries of the future. Oil and coal are on their way out.

Water as a Major Asset: With cheap electricity comes cheap and abundant water. Desalination now only needs 2kWh per cubic meter. We don't have scarce water in most places, we only have scarce drinking water. Imagine what will be possible if anyone can have as much clean water as he wants, for nearly no cost. The UN reports that 75 percent of the world's available freshwater is already polluted. Under-investment in water management is exacerbating the problem, causing serious impacts on human health and the environment. A key challenge is the high capital cost, and high energy requirements, of current wastewater treatment and management systems. Desalination plants will spring up worldwide to create massive needed fresh water from sea ocean water. The ability to use biotechnology to extract resources, such as energy, from waste, and the dropping cost of industrial automation, will begin to change our approach to managing water globally. Rather than a liability, wastewater will be viewed as an environmental resource, providing energy and clean water to communities and industry, and ushering in a truly sustainable and economical approach to managing our water resources.

3D Print Your Organs: The price of the cheapest 3D printer came down from \$18,000 to \$400 within 10 years. In the same time, it became 100 times faster. All major shoe companies started 3D printing shoes. Spare airplane parts are already 3D printed in remote airports. The space station now has a printer that eliminates the need for the large number of spare parts they used to have in the past.

At the end of this year, new smart phones will have 3D scanning possibilities. You can then 3D scan your feet and print your perfect shoe at home. In China, they already 3D printed a complete 6-storey office building. By 2027, 10% of everything that's being produced will be 3D printed.

3D Printable Organs are already in process via 3D "bioprint" organ tissues, a process that involves depositing a "bio-ink" made of cells precisely in layers, resulting in a functional living human tissue for use in the lab. These tissues should be better predictors of drug function than animal models in many cases. In the long-term, this has the potential to pave the way to "printing" human organs, such as kidneys, livers and hearts.

By 2020, the goal is to have the technology be broadly used by pharmaceutical companies, resulting in the identification of safer and better drug candidates and fewer failures in clinical trials.

Work: 70-80% of jobs will disappear in the next 20 years. There will be a lot of new jobs, but it is not clear if there will be enough new jobs in such a small amount of time.

The Job Skills Gap and information Gap is the problem and not...that workers are unskilled; it's that workers don't know what skills employers need. Technology is already disrupting existing jobs, and creating new jobs that never existed before. In fact, the top 10 in-demand jobs in 2010 did not even exist in 2004. Change is happening so rapidly that 65 percent of today's grade school kids in the U.S. will end up at jobs that haven't even been invented yet. If you wish to be competitive you must enhance your tech skill levels for future industries not yet mainstream. (Alexis Ringwald, Cofounder and CEO, LearnUp, -World Economic Forum)

The Robots are Coming: Robotics is a rapidly emerging technology which will penetrate every aspect

of business and our daily lives. This will replace massive numbers of manufacturing jobs and manual labor. Japan is expecting one in three of its population to be over the age of 65 by 2030, and one in five to be over 75, creating a major requirement for the care of the elderly. Japan is now using robots to service the elderly. A hotel opened in Japan in 2015 with lifelike robots, called 'Actroids', serving as the check-in staff. Aid assistance in nursing facilities is on the horizon, meaning many of the entry-level jobs in those areas will become obsolete just like bank tellers. Look at the field of Robotics, AI (Artificial Intelligence) and VR (Virtual Reality) technologies for massive growth industries.

Autonomous Cars: In 2018 the first self-driving cars will appear for the public. Around 2020, the complete industry will start to be disrupted. You won't want to own a car anymore. You will call a car with your phone, it will show up at your location and drive you to your destination. You will not need to park it, you only pay for the driven distance and can be productive while driving.

Our kids may never want to get a driver's license and may never own a car. It will change the cities, because we will need 90-95% fewer cars for that. We can transform former parking space into parks. 1.2 million people die each year in car accidents worldwide. We now have one accident every 100,000 km; with autonomous driving that will drop to one accident in 10 million km. That will save a million lives each year.

Most car companies may become bankrupt. Traditional car companies try the evolutionary approach and just build a better car, while tech companies (Tesla, Apple, Google) will do the revolutionary approach and build a computer on wheels.

Insurance Companies will have massive trouble because without accidents, the insurance will become 100 times cheaper. Their car insurance business model will disappear.

Real estate will change. Because if you can work while you commute, people will move further away to live in a more beautiful neighborhood.

Electric cars won't become mainstream until 2020. Cities will be less noisy because all cars will be able to

run on electric. Electricity will become incredibly cheap and clean: Solar production has been on an exponential curve for 30 years, but you can only now see the impact. Last year, more solar energy was installed worldwide than fossil. The price for solar will drop so much that all coal companies will be out of business by 2025.

Driverless Trucks: Driverless trucks will be safer and cheaper than their human-controlled counterparts, but that doesn't mean America's 3.5 million professional truck drivers are giving up to the machines without a fight. Across the US, truckers collectively haul more than 10 billion tons of freight each year, but it's a tough job – the hours are long and lonely, the pay is low and the lifestyle is sedentary. In many ways it's a job ripe for disruption; robots v truckers.

Much has been written about the advent of the driverless car, with rival versions being developed by Google, Uber and Tesla, yet driverless trucks are likely to roll out at scale much sooner. "Individuals can make their own choices about whether they want to get into a driverless car or taxi, but labor-saving technology will be deployed by businesses much quicker," explains Stern, whose book *Raising the Floor* explores the need for a universal basic income as technology replaces jobs. Mining giant Rio Tinto already uses 45 240-ton driverless trucks to move iron ore in two Australian mines, saying it is cheaper and safer than using human drivers. Now the race is on to put driverless trucks on public roads. In May 2015, the first self-driving truck hit the American road in the state of Nevada, and there have been several tests around the world since then including a convoy that drove across Europe to the port of Rotterdam. That convoy used a new automated driving technology called platooning, which connects trucks using Wi-Fi, sensors, GPS and cameras. The leading vehicle dictates speed and direction, while the rest automatically steer, speed up and slowdown in close convoy. In San Francisco, former Googlers have launched a startup called Otto, which promises to retrofit vehicles with driverless capabilities for just \$30,000. The average trucker's wage is around \$40,000 per year.

Morgan Stanley conservatively estimates that the freight industry could save as \$168 billion annually by harnessing autonomous technology – the savings are expected to come from labor (\$70 Billion), fuel

efficiency (\$35 Billion), productivity (\$27 Billion) and accidents (\$36 Billion), before including any estimates from non-truck freight modes like air and rail. It's regulation, and not technology that stands in the way of eliminating people from behind the wheel. Trucking companies are likely to lobby hard for the legal reform so they can save on labor, which represents an estimated 34% of operational costs per mile. Crashes involving large trucks killed 3,903 people in the US in 2014, per the National Highway Traffic Safety Administration, and a further 110,000 people were injured. More than 90% of the accidents were caused at least in part by driver error. What next for drivers? Where does this leave the 3.5 million truckers whose livelihoods depend on the need for a human behind the wheel? Truck Driver is not a profession for the future.

Internet of Things: It's the simplest of terms that is obsessing the tech industry and confusing the public: The 'Internet of Things'. There are currently 13.4 billion things connected in the world — smartphones, smart TVs, computers, tablets and the odd fridge and robotic vacuum. Juniper Research predicts that figure will reach 38.5 billion by 2020. Technology analysts, Telsyte, predict the number of connected devices in the average Australian home will jump from the current figure of nine to at least 24 and the internet-enabled white good will become the norm, just as smart TVs are now standard. This is another career growth area in the tech fields. So, we either prepare for these future high tech/Info tidal waves and embrace them, or be swept away by them.

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Now, this comes down to how to invest. I'm sure I don't have to remind anyone that the ones who made the money during the California gold-rush, were not the miners. It was the pick & shovel manufacturers. Levi jeans came into existence. That's the way to play it.

Once you've latched onto the investment theme that gets you most excited, you don't have to make a bet on the company that you think will be the winner. That's very hard to do. Find an Exchange Traded Fund (ETF) to do the heavy lifting for you.

Good luck!