



Be the Windshield,  
... not the Bug

SPLAT!

Creating and Investing in Game-Changers

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**"On the road to the future,  
who will be the windshield, and  
who will be the bug?"**

— Gary Hamel (Competing for the Future)



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## INTRODUCTION



Should you read this book?

DO YOU WANT TO BE RICH?

Do you challenge the *status quo*? Tired of mediocre results?

Are you ready to PLAY TO WIN?



I'm making an assumption, a big assumption — you want to get *rich*!

You want m-o-n-e-y. That's right I said that *nasty* 5 letter word. On Tumblr there's a site called [Billionaire Mogul](#) with the tagline "it's not about the money .... It's about dreaming and succeeding." The fact is money measures accomplishment and it's the scoreboard of business.

DO YOU WANT TO BE PAID FOR RESULTS?

Money-making is all about spirit. It's about getting paid for results. Workers paid for time worked face an uphill battle. Even scrimping their entire lives, they won't be rich. In the end they may *get by* or even live *comfortably*, but they'll never achieve sheer abundance. *Playing to win* means shooting for the stars. Maybe you won't make it all the way, but chances are you won't end up in the dirt either. Look at the [Forbes Billionaires](#) list of the world's richest people. Two classes stand out as the clear winners: Investors and visioneurs (visionary entrepreneurs).

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## DO YOU WANT TO CREATE OR INVEST IN THE NEXT BIG THING?

Do you want to know what the Next Big Thing will be? More importantly, do you want to profit from the fortunes that will be created? If you do, this is the book for you. It will stimulate your mind and let you be a player in the world to come, instead of a mere spectator.

Big thinkers want to harness the power of the future.



Most people live in the world of the microscope. Level-headed thinking prevails. Things are *good enough*. And if change is needed, an incremental approach is clearly the best way. Companies are *managed*. Managers get bogged down in details. They demand long-drawn-out forecasts, extensive market research, and all-encompassing competitive analysis.

Some people use telescopes to bring the future closer. Visioneers dream up *the next big thing* to change the world, and make late-adopters *eat their dust*.

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*Splat!* starts off with the essence of change and ... hyper-change. As our world accelerates at warp speed, it's critical to be able to look ahead and see through the fog. We need to be able to understand the driving forces. We're flat out addicted to the internet. Tomorrow's internet will dig in deeper as apps are replaced with intelligent systems. Machines will replace people and do unimaginable things. As for that 5 letter word m-o-n-e-y, it will still be around, although most of it will be digital.

## Why I wrote this book!

I wrote this book to inspire others; to fire up the spirit of *investors, visioneurs* and other *big thinkers* who want to create and invest in game changers. Visioneurs aim to change the world and financial investors add fuel to the fire. Financial investors can also get bonus points by [shorting](#) the road kill.

I love helping people think outside the box — *way outside the box*. I want to connect with other Big Thinkers who want to empower consumers, not entrap them. Of course, I plan on making m-o-n-e-y, a lot of it ... because money is a reward for a job-well-done.

Investors create markets. Without investors there would be no industry, no economy, no jobs, and no growth. Think of the market as a giant tornado like funnel. At the top of this ferocious, whirling mass of energy are global events and our reactions to them. The vortex spins with supply and demand, interest rates, industry shifts, as well as analyst reports, company earnings, and the public's opinion. Spinning ferociously, all these elements ultimately coalesce into a single point: PRICE.

“Luck has nothing to do with market success because *the market is not a casino*. It's a **test of knowledge, self-control, and patience**, a game where realists win and gamblers lose.”

— Michael Parness, Rule the Freakin Markets

## Visionary Power

“I've missed more than 9000 shots in my career. I've lost almost 300 games. 26 times, I've been trusted to take the game winning shot and missed. I've failed over and over and over again in my life. And that is why I succeed.” — Michael Jordan

Lots of aspiring visioneurs create startups to make money and that's great. However, focusing on the money limits their potential. Visioneurs are in a unique position; they hold the power to shape the world. In the end it's more than just money. Sure money's important, but more important is being part of changing the world.

If you want to become rich, I mean really RICH, then don't focus on the money. Focus on creating something crazy, something that will be a game-changer. Investors also play a key role in that without investors, few ventures reach their full potential.

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## VISIONEURS



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### SEEING A WORLD OF POSSIBILITIES

Why is it great to be a visionary? While entrepreneurs start small businesses, they lack the dream of a visionary; visioneurs are different — they look out at the world and see possibilities.

Visioneurs hate the status quo. Careers stifle their energy and they despise going through the motions, sitting idly, and following the crowd. Most visioneurs are easily bored, always looking for change. How can this be improved? What would make that work better? Sometimes visioneurs are looked at as rebels in traditional workplaces. Being a visionary isn't easy, but for those who are visioneurs, no other life would be fulfilling.

Most industries and businesses are changing. Now is the perfect time to find diamonds in the rough. While chaos and destruction rips apart the world, visioneurs will be able to capitalize, while others struggle. Visioneurs are able to:

- Pursue their passion. This alone is reason enough to cause jealous rage in corporate drones. Doing what you love is rare in the corporate world where employees are confined to cubicles or cages with doors (offices).
- Reinvent the world. Successful visioneurs improve society in some meaningful way. Not being a small cog in a large machine allows them to directly impact the success of the venture. In startups, what visioneurs do each and every day can make or break it.
- Be your own boss (kind of). Visioneurs are in charge of their own destiny. As captains of the ship, visioneurs must work to satisfy not one boss, but many bosses — customers.
- Unlimited potential. Successful visioneurs are richly rewarded financially too. The only cap on a visionary's earning potential is their willingness and ability to adapt to market demands.
- Security. Business is changing. Fast. Employees normally only work one or maybe two jobs. Being let go is catastrophic. Running your own show spreads that risk around. Losing one or even two customers shouldn't be devastating. Visioneurs are in control of their operations. Unlike a large corporate ship, smaller ventures are able to better navigate the stormy seas.

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## AIM TO CHANGE THE WORLD

Visioneers create wealth by selling products (services) to customers that strike hidden desires within the human psyche. Innovations like CNN, the Personal Computer, the Internet, and the Mobile Phone succeeded not because they responded to a current market need, but because they created a need consumers had not yet sensed themselves. The greatest rewards go to companies that create new business models.

Consumers willingly pay a premium for products they love. Think of Apple, Starbucks, or Tesla. These companies offer products that consumers love. Need proof? Just look at people waiting in line, going out of their way to buy the product, or even pre-ordering the product months, and even years in advance.

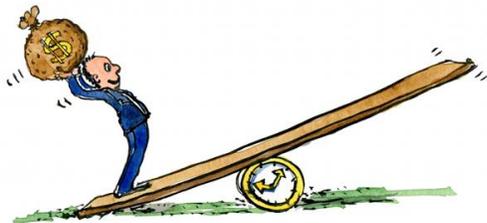
Visioneers push the envelope and raise the bar for would-be competitors. People buying or not buying is what drives the market. It is consumers who ultimately decide which products (and companies) are successful and which aren't. Visioneers providing the best and the cheapest products get rich.

Look at Inc.'s [fastest growing private companies](#) or Fast Company's [most innovative companies](#) for examples of up-and-coming visioneers.

Visioneers built and are continuing to build the world we live in. Acquiring wealth is not only right, it is expected. How else are the many, consumers, going to get what they want, if someone else (namely visioneers) doesn't produce it.

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## INVESTORS – SPINNING THE WHEELS OF CAPITALISM



For years I dreamed of Wall Street. Yet I held back pursuing those dreams. For a long time I struggled with the nobility of being an investor. My mind agonized over the value of being an investor. What investors do is not directly seen by others and at first glance may seem to not add any real value. Traditional companies create and deliver products (services) to customers, but investors — they don't really create anything, or do they? To make matters worse, visioneers are glorified, while investors are vilified.

I rediscovered my enthusiasm for the markets and thought deeply about the purpose of investors and how they add tremendous value to society. Although in these troubling economic times, *capitalism* is under attack, it is capitalism that built the modern world we live in and enjoy today.

In a little over a hundred years, the United States was transformed from a predominately agrarian society to an industrial and knowledge-based society. Thanks to capitalism, our world offers all sorts of luxury and an unprecedented standard of living for the vast majority. The quest for money is not only right; it's what will propel the human race into the future.

While visioners are the ones who dream up, create, and deliver innovative products and services, it's investors who provide the necessary funds that fuel those ambitions. In the financial world, there are *primary* markets and *secondary* markets. Each market adds distinct value and each market supports the other. Public markets serve many purposes. Two that come to mind are:

- 1) Long-Term Investment Capital The stock market both reflects and drives the economy. High-return projects need long-run commitments, but investors in general are reluctant to lock-up their savings for a long period. Therefore, without a liquid market, there is less investment in these projects.
- 2) An Economic Barometer The stock market is also an economic indicator of how well an economy, industry, or company is doing. If investors are confident in the economy, an industry, or company; they will buy stocks. If investors are pessimistic, they will sell stocks.

In the Primary Market, aka going public; visioners, angels, venture capitalists, and other private investors look to the public markets as a key exit strategy, either IPO or corporate buyout. Selling stock to the public rewards founders, as well as private investors for taking the founder's concept from idea to commercialization. Plus, going public typically infuses the company with surplus cash for taking the company to the next level of growth and expansion. In return, investors are given ownership rights — including a share of future profits.

Secondary markets create liquidity which supercharges the value of *primary* markets.

A liquid secondary market:

- Helps increase transparency.
- Constantly assesses the value of assets.
- Reduces transaction costs.
- Sends information/ performance feedback to company managers.
- Allows for performance pay in the form of stock, stock options.
- Helps investors keep management aligned with owner demands.
- Allows companies to use stock for M&A deals.

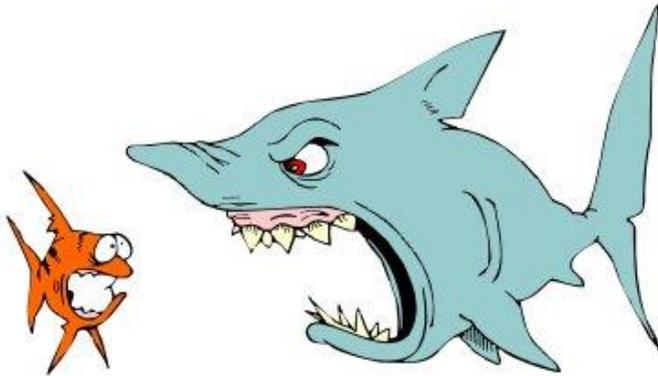
Investors are part of a system that allocates capital resources to their highest socially objective value, not necessarily their philosophically objective value. Without such a system, the business world would turn into chaos. How would business allocate capital — by government fiat? Maybe some higher authority would centrally plan what should be produced, who should produce it, and who gets key resources. Oh yeah — it's been done. Communism killed millions and laid waste to Russia.

So ... why be an investor?

- 1) *To make money!* "You might have the kindest heart, be the greatest person, or have the best work ethic, but at the end of the day, money talks." — Jonathan Hoenig
- 2) To be part of the financial world that supercharges the primary market. As an investor, you'll be part of *capitalism in action*. "A stock market is crucial to the existence of capitalism and private property. For it means that there is a functioning market in the exchange of private titles to the means of production. There can be no genuine private ownership of capital without a stock market: there can be no true socialism if such a market is allowed to exist." — Ludwig von Mises
- 3) Lifestyle as an Investor, you'll be able to:
  - Take control of your own destiny. You and only you will determine your level of success.
  - Be paid for *all* the results you create.
  - Not be at the beck and call of a boss.
  - Not have the hassles of a traditional business — customers, employees, suppliers, etc.
  - Work from anywhere with a laptop and a high-speed internet connection.
- 4) For the challenge. The purpose of the stock market is not to generate wealth for unthinking shareholders. Its function is to *value assets* and *provide liquidity* for the buying and selling of those assets — and that's exactly what investors do. Investors earn every penny. To really make money trading takes a lot more than just being in the market. You need to do serious thinking, extensive research, and take decisive action.

Being an investor isn't for everyone. Much like a start-up visionary, investors may put in long hours — to study and trade the market. Also investors generally require more knowledge, preparation, and discipline than other professionals. Investing in any market is not easy — if it were, lots of people would already be doing it successfully. There aren't any shortcuts or miracle formulas that guarantee success. Markets are irrational because people are irrational. One of the hardest aspects of being an investor is suppressing your ego. Many of the best investors are the ones that learned to tame their egos — specifically the emotions of greed (wanting more and end up betting, and losing, the farm) and fear (not being able to do what it takes to control losses — which are inevitable).

## Sharks Love Fresh Meat!



### SHARKS MAKE THE RULES

Like it or not, Sharks make the rules ... in the ocean and in Business.

Sharks and Big Business are very much alike. Size does matter and he who has the gold makes the rules.

#### *Know the rules*

Before you can be different, you need to understand the Status Quo. Who's doing what? Why? In business, there's untold numbers of unwritten rules that businesses abide by. What will managers say? What won't they say? What forces managers to make their decisions? Are they compelled by Wall Street? Or Private Investors? What will customers accept? Reject? In the end, Investor and Customer pressure is intense, and drive much of what company managers do and what they won't do.

#### *Sharks & Business – a lot alike!*

#### **Sharks**

Hungry  
Aggressive  
Ferocious  
Territorial  
Silent, but deadly  
Take no prisoners  
Kill or be Killed

#### **Big Business**

Never enough customers  
Play Hardball  
Second Place is for Losers  
Market space = Turf  
Silent, but deadly  
It's Business, not Personal  
Make \$\$\$ or Go under

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## SWIM WITH SEALS FLIRT WITH DEATH

### *Swimming with Seals*

Swimming with seals, which is following other competitors — doing the same old thing is dangerous. This is the absolute leading cause of falling into a no profit trap. Look at PC manufacturers and even mobile device manufacturers. Apple and Samsung lead the pack. Others are fighting to stay alive. Automobiles are another no profit zone with auto makers bringing in hundreds of billions of dollars with razor-thin margins. Blood is in the water. VoIP companies bit huge chunks out of traditional phone companies. Then telephone companies co-opted VoIP into their own offerings. AT&T was swallowed by SBC, then turned into at&t.

### *Strong > Weak*

In nature, the strong prey on the weak! Lions prey on sick, weak, and slow animals. Sharks strike seals that swim too slow or lose focus. Crocodiles will snatch a bird falling from a tree. Hyenas will team up to take down large animals. Fresh Meat is irresistible.

Business is the same. Weak competitors will be attacked. The lure of acquiring new customers, talent, intellectual property, and other valuable resources is irresistible. Larger competitors will, if at all possible, drive smaller competitors out of business. Then, they'll buy up what remains at fire sale prices. Even when facing equally matched competitors, the lure of more revenue sparks price wars.

### *Sameness*

Competing in the same way as everyone else is a sure-fire recipe for mediocrity. Do you use the same suppliers as everyone else? Are you chasing after the same customers? Hiring the same kind of people? Even once shining stars are suffering from sameness. Over the last five years, the Computer industry lost billions in market value. Me-too products led the way to the land of diminished profits and unprofitability. En masse, computer companies cling to the past, while ignoring the future of computing. Consumers embraced mobility in a big way, literally changing the when and where of communications and computing.

Fortunately, there is another way. You can stake out new territory.

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## STAKE OUT NEW TERRITORY

In business, there are two types of innovation. Sustaining innovation which perpetuates the status quo and disruptive innovation which introduces truly new products and new methods of doing business. We'll talk more in-depth later.

Swim away from the seals. It's a great big, wide open ocean.

Disruptive Innovation gives new entrants — either startups or spin-offs a competitive edge. Unlike sustaining innovation, which creates better products for mainstream customers, disruptive innovation means thinking outside the box, way outside. Simpler, more convenient, less features. Products that are not as robust as standard offerings. Look for overserved customers and non-consumers. Non-consumers are a huge, untapped market. They offer a gold-mine of insights into creating products (and services) that mainstream customers will never see.

To stake out new territory you need to:

1) Know what customers value. An excellent book to read is [Value Migration](#) by Adrian Slywotzky. Value Migration will show you how to understand where value was, is, and will be. Slywotzky shows how to create a Competitive Radar on pages 80-82. Additionally, in [Blue Ocean Strategy](#), there's the Strategic Canvas (pp.25 - 28) that illustrates critical elements of competition that comprise that status quo.

2) Learn where profits will be.

Value Migration helps here as well. Forces all around us conspire to drive profit out of business. Hungry competitors, Demanding customers, Powerful suppliers, and Governmental organizations aim to squeeze profit out of a business. Profits vary widely along an industry value chain. Suppliers, Manufacturers, Distributors, and Retailers. Each player captures profit differently with different degrees of profitability. Generating revenues is not the only goal. Even creating customer value is not the real goal. The goal is to create exceptional value for the customer and capture as much of that value as possible in the form of profits.

3) Create a business model that creates and captures value.

Once you understand the status quo and where profits will be, it's time to break the rules and create disruptive business models. One of the best books on the subject is Clayton Christensen's [Seeing What's Next](#). Additionally, studying profitability will maximize your ability to create a business that not only turbo charges sales, but rakes in profits too. [Profit Patterns](#) by Adrian Slywotzky is an invaluable resource.

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No matter who you are, competition will make or break you!

Knowing how to compete is the difference between failure, just getting by, and massive success. What you need is a competitive edge — something to set you apart from the hordes that are creating untold numbers of No Profit Zones.

Sharks love fresh meat, so do competitors. You need to face the facts that Sharks Make the Rules. Don't swim with seals either. Being the same as everyone else is too dangerous. Instead, breakaway — stake out new territory by being disruptive.



"There is nothing permanent except change" — Heraclitus

Sometimes we embrace change, yet something inside us fiercely resists it. The ancient Chinese viewed the reality of this with the word *crisis* which is derived from two characters symbolizing *danger* and *opportunity*.

Although change applies to a lot of circumstances, in Splat! I use the term primarily to describe *technology* change.

## THE 5 W'S

### WHO IS AFFECTED BY CHANGE?

Everybody is affected by change, although some experience change much faster or slower than others. Even a Tibetan monk will see technological change, if nothing more than seeing planes in the sky or weird things (we call them phones) practically attached to the ears of strangers. For those of us in the modern world, technology is all around us and over the course of our lives we see great changes in some areas and little in others. Ever since the Industrial Revolution, change is increasingly transforming our life experience over shorter and shorter timespans.

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## WHAT IS CHANGE?

The World English Dictionary defines [change](#) as: *to make or become different; alter*

Change ≠ Progress

Many people mistakenly use the words change and progress interchangeably. While it's true that change always comes from progress, the reverse isn't always the case. Change doesn't always mean progress. In fact, change may end up being the exact opposite. Technology by itself is *neutral* and is neither inherently good nor evil — it just is. We need to carefully look at change all around us and the change within.

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### CHANGE IS ALL AROUND US (EXTERNAL)

"Most change is not what we do, but how we do it" — John Naisbitt ([Mind Set](#), *Reset Your Thinking and See the Future*)

Throughout history, and in all likelihood the future, most life activities remain the same — it's just how we do them that changes. The eight areas below paint a spectrum of life activities. How do we:

- Heal
- Live
- Learn
- Work
- Eat
- Play
- Communicate
- Move

Naisbitt also points out ([Mind Set](#), p.10) that "Whatever information is assailing you, distinguish between real and apparent change ... differentiate between

Basics and embellishment  
Rules and Techniques  
Trends and Fads  
Breakthroughs and refinements"

For the most part *Splat!* will be about external change. The world around us is what most people associate with change. Nevertheless, it's important to recognize that the way we internalize change is also important to success in life.

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## CHANGE LIES WITHIN US (INTERNAL)

[Aman Motwane](#) wrote a compelling book *The Power of Wisdom When You Change How You See The World, Your Whole World Changes*. The reason it's so important to look within is that "Most of us are not aware that we don't see the world as it really is ... We attack symptoms rather than solve the underlying problems. And when our solutions don't stick, we are quick to blame the world around us."

To really capitalize on change, it's critical to look at the world the right way. For example, there's a huge difference in looking at the world from the perspective of being a victim of circumstance vs. being the master of your own fate. Visioneers and Investors who look at the world from a money-making point of view are radically different from those who seek comfort over opportunity. In fact, most of the time, people without a money-making mindset will not even recognize, yet alone see money making opportunities. It is our mindset that opens our eyes.

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## WHEN DO THINGS CHANGE?

So when does change occur? Some say it occurs erratically and it's hard to pin down. Others believe in cycles — some long, others short. Within the realm of technology, Pip Coburn, in the [Change Function](#), took on the challenge of quantifying when change occurs. On page 20 he describes *The Change Function* =  $f$  (user crisis vs. total perceived pain of adoption) which is explained on pages 22, and 25-26. What constitutes a crisis is different for each of us and it resides on a sliding scale depending on the circumstance. Many assume consumers look primarily at price — which governs all. However, price is only one variable. The Total Perceived Pain of Adoption (TPPA) encompasses the entire spectrum of what's involved in buying a product. Personally I invoke what I call the WIMMLE<sup>2</sup> test → *Will it make my life easier or more enjoyable?* Naturally price is important, but so are convenience, ease of use, portability, size, and many other factors. The bottom line is WIMMLE<sup>2</sup>. Consumers will buy products when they reach a *tipping point*, that is at the point where the TPPA is overcome by what he/ she considers to be a *crisis*.

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## OBSTACLES TO CHANGE:

That's *just the way it is* — *culture*, and *entrenched interests* put up stiff resistance to change.

Business as usual creates a comfort zone and as Newton's First Law of Motion states that "a body at rest will remain at rest unless an outside force acts on it ..."

Culture also plays a significant role in the dynamics of change. Sometimes certain ways of doing things become deeply embedded in our lives and even superior methods are cast aside in favor of those far less efficient. Many people still cling to adding machines, when a spreadsheet is clearly superior. Spreadsheets are routinely used as an electronic Swiss-army knife. But, spreadsheets

aren't as good at writing as word processors or capable in creating presentations. Although great at numbers, databases are best when there's a vast amount of information. We get used to doing things a certain way and even when there's a better way, we fight change.

Entrenched Interests play a huge role in keeping change at bay. Fearful of competitors, entrenched interests regularly seek legal protection from legislative bodies, regulators, and court systems. Even though incumbents clearly want to lead the field, the term monopoly, at least in the United States, is avoided at all costs. In fact, companies fight tooth and nail to avoid being labeled a monopoly for numerous reasons. On top of the list is the fact that being labeled a *monopolist* will entangle the company in legal battles and siphon resources away from core business activities which may end up being the kiss of death.

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#### ACCELERATORS OF CHANGE:

To really understand why people change, simply look at incentives. How are people rewarded? What are they rewarded for? Two things motivate human behavior — pain and pleasure. We actively seek out pleasure, especially instant gratification. However, the most powerful motivator of all is pain. When faced with pain, all we want to do is get rid of it. Entire industries are predicated on relieving *symptoms*. Problems don't need to be eliminated; they just need to be managed. Headache? You'll get an even bigger one trying to decide which one to take — dozens of pain pills line the shelves at local pharmacies. Upset stomach? No problem, just pick your favorite anti-acid to cover up the problem. Name any ailment and you're bound to find several medicines to at least mask the symptoms. It doesn't matter if the condition is self-inflicted or not. Eating junk food, drinking too much, and indulging whatever *feels good or tastes good* are favorite past-times. Never underestimate the power of instant relief!

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#### WHERE DOES CHANGE COME FROM? / WHERE DOES CHANGE HAPPEN?

Change is everywhere. It's natural, and it's all around us. Science, in the pursuit of knowledge, continually expands our knowledge of the world around us. And change is driven by the pursuit to solve the challenges (aka problems) we face — be they emotional, intellectual, or physical.

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#### EMOTIONAL

While consumers will deny they didn't think things through when they bought a product, the fact is — emotion drives consumer behavior. We want products that stroke our ego. That's why the entire advertising industry exists — to tell us what's cool, and more importantly, what will make us cool. Just a few of the industries driven by emotion are: Apparel, Art, Jewelry, Perfume, and of course Toys.

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## INTELLECTUAL

Change also comes from stimulating our minds, although not nearly as powerfully as emotion-based decisions. The *education* market is based on our need to expand our minds. And, in the 21<sup>st</sup> Century, that's paramount. Jobs are being automated away and the only way to keep up is to expand our skills. If education isn't pursued proactively, we will seek out learning opportunities reactively, if only from the pain of being unemployed. Technology is laying waste to entire industries. Jobs will be eliminated. In fact, entire classifications of workers will be jettisoned as we move into the future. Education is paramount, lest we toss aside millions of people.

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## PHYSICAL

Healthcare is one of, if not the biggest and fastest growing markets worldwide. Health is the foundation of our very existence. Ill health is something to be avoided at all costs. As a global community we spend trillions of dollars to prevent, and treat disease. Anti-aging is a trillion dollar opportunity that springs forth from our elusive search for the *fountain of youth*.

Change occurs all over the world, although it's highly dispersed. One way to look at where change occurs is to look at *urban vs. rural*.

### **Urban**

All across the world, people are migrating to cities. According to the [World Health Organization](#) (WHO), "urban population in 2014 accounted for 54% of the total global population, up from 34% in 1960, and continues to grow. The urban population growth, in absolute numbers, is concentrated in the less developed regions of the world. It is estimated that by 2017, even in less developed countries, a majority of people will be living in urban areas."

By 2030, 6 out of every 10 people will live in a city, and by 2050, this proportion will increase to 7 out of 10 people."

When you pack millions of people into cities, problems are magnified. Urban areas face diverse challenges such as energy, education, employment, food, health-care, housing, transportation, sanitation and physical security. Of course, in every problem there is opportunity.

Cities are rapidly expanding because cities provide a wide range of social activities, public transportation, and many job opportunities. According to an EY report: [Megatrends 2015](#) "The United Nations (UN) reports that 54% of the world's population currently live in cities, and by 2050, this proportion will increase to 66%." And that "The balance of economic power held by cities will shift eastward, tilting particularly toward China."

## Rural

Rural areas pose a different set of challenges. Living in the middle of nowhere may offer the beauty of nature at its' finest. However, as technology races ahead, many rural areas get left behind. Internet access is typically slow, or even non-existent. Whereas cities are crowded, those living in rural areas, full of wide open spaces, end up traveling long distances (on less than perfect roads) for food (at least the kind most of us want to eat), medical care is far, far away, social activities are limited, and employment opportunities may be virtually non-existent.

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## WHY DO THINGS CHANGE?

Change occurs for two reasons. First of all, the universe is in constant flux. We must adapt to our surroundings. Standing still is not an option. And second, as far as technology is concerned; change takes place because humans constantly fine-tune their environment. Ultimately it's the *pursuit of progress* that drives change. As individuals, we seek to improve our lives. Sometimes we work in opposite directions and at other times we work together. Overall, it's push-pull, a balancing act. Ultimately, if enough people go in the same direction all at once, massive change occurs.

[The essence of life is not energy but ideas](#)



“Technology’s dominance ultimately stems not from its birth in human minds but from its origin in the same self-organization that brought galaxies, planets, life, and minds into existence. It is part of a great asymmetrical arc that begins at the big bang and extends into ever more abstract and immaterial forms over time. The arc is the slow yet irreversible liberation from the ancient imperative of matter and energy.” — Kevin Kelly, [What Technology Wants](#)

## TYPES OF CHANGE

### GRADUAL

Gradual change doesn't really sneak up on us. We may choose to ignore it, but the signs are all around us. In [Who Moved My Cheese?](#) (page 33), "... Hem and Haw arrived at Cheese Station C. They had not been paying attention to the small changes that had been taking place each day, so they took it for granted their Cheese would be there." They were unprepared for what they found — the Cheese was gone.

Benevolent by nature, gradual change is ok if it's anticipated. On page 32 "Since Sniff and Scurry had noticed the supply of cheese had been getting smaller every day, they were prepared for the inevitable and knew instinctively what to do."

Too many people live with blinders on, oblivious to change. Like Hem and Haw, they don't see the changes taking place in the world around them. Globalization and the subsequent outsourcing of factory jobs were slow to take place. Astute workers left the ranks of the factory and moved onto greener pastures. Of course leaving behind years of training and experience is a painful process that few are willing to endure without being forced. Enterprising visioneurs and investors also shifted with the times. Those going with the trend were richly rewarded.

### SUDDEN/ UNEXPECTED

Sudden change comes in two flavors: *generic* and *game-changing*. Both are unexpected by most. Although in reality, plenty of signs are out there — we just need to see them. Even [Big Bang Disruption](#) doesn't occur overnight. Lightning may appear out of nowhere and it does, if we're not looking at the angry black clouds racing over the horizon.

### GENERIC, RUN OF THE MILL CHANGE

Generic change sneaks up on us and strikes — but doesn't level the playing field. With massive resources, compared to smaller players, the status quo is maintained or perhaps even enhanced since smaller players caught off guard aren't able to weather the storm. Larger players may actively seek out Merger and Acquisition (M&A) opportunities to snap up the small players scattered around like driftwood.

For visioneurs and investors, the key is to recognize that the world is a system. And, as a system, it must be seen for what it is. Many never even see the world as a system. Like Neo in the *Matrix*, their eyes were never opened. "Neo: Why do my eyes hurt? Morpheus: You've never used them before." That's why so many get hurt by change. Sudden change may come quickly, but for those in touch with reality — there are ways to mitigate (or even profit from) the damage

created by sudden change. Realism is absolutely critical, as is seeing the subtle signs others simply don't see. Think of the Titanic. Arrogance silenced the critics as the ship was thought to be unsinkable. Not treating the high seas, and especially icebergs, with respect also greatly contributed to the disaster. According to Wikipedia "... she carried only enough lifeboats for 1,178 people—slightly more than half of the number travelling on the maiden voyage..." As a result, well over a thousand people died.

Ultimately success is about paying attention. Keep your eye on the ball! Or else ([lessons from the Matrix](#))

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## PARADIGM SHIFT

"Nothing is so painful to the human mind as a great and sudden change." — Mary Shelley, *Frankenstein*

Paradigm shifts are *game changers*. Jack Krupansky explains [What is a paradigm shift?](#) "A paradigm shift is a relatively abrupt change that brings about a relatively radically new worldview with new rules, such that opportunities are accessible and success can be achieved only to the extent that individuals and organizations adapt their thinking to the new worldview and adapt their behavior to follow its new rules."

Nothing precipitates change like a crisis. After all, it's said that *necessity is the mother of invention*.

To profit from change, we must understand change — especially paradigm shifts. The key is to recognize ahead of time when and where future shifts are going to occur. History is littered with paradigm shifts that literally annihilated the status quo. Here's a short list of paradigm shifts:

- Home/Cottage Industry → Factory System
- Mechanical (Water/Steam) Power → Electrical Power
- Custom Parts → Interchangeable Parts
- Vacuum Tubes → Transistors/ Integrated Circuits
- Print → Internet/Web
- Wired → Wireless

It's paramount to react to potential paradigm shifts. Many engage in sucker bets by deliberately ignoring or hiding from change. Lots of companies — especially larger ones, play dictator with their customers. *You shall buy what we sell, when we decide to sell it, and at whatever price we decide to sell it!* In the short-run, this strategy can be highly profitable. In the long-run, it can be the iceberg that sinks the company.

Future paradigm shifts will likely use the internet as a springboard. Like canals, railways, and highways, the internet is a key infrastructure that will underlie many futuristic products (and services). We've already seen the near total destruction of POTS (Plain Old Telephone Service) which was replaced by VoIP and cellular technologies. Music and video went from LPs to CDs to digital/ streaming. The cloud, both private and public, acts as a powerful conduit for applications. On the horizon are digital manufacturing, digital currencies, and all-knowing mobile applications. Each of these may turn the apple-cart upside down forever.

## DEALING WITH CHANGE

Change is inevitable → It can kick your ass or make you rich!

“We are entering an increasingly dangerous period of our history” — Stephen Hawking. Yet there is hope because as Jane Goodall puts it “We humans are a problem solving species.”

Scientists, Engineers, Innovators, Visionaries, and the Investors who fund them, are working diligently to solve the problems that surround us. J. Craig Venter states that “We can now write software for life.” Which is spot on! Back in April 2013, Wired published [Bioengineers Build Open Source Language for Programming Cells](#). The key words are *Open Source*, which means everyone, or at least those with the skills and motivation, are welcome to take part in creating new forms of life. There's even a [Synthetic Biology Open Language](#) (SBOL). Now, in 2015, Synthetic Biology is becoming mainstream and is taught at many universities. And even individuals are being empowered as the [DIYbio](#) movement spreads around the world.

We must deal with change, and that's exactly what the [Open Source community](#) is doing. They aren't content to leave the future of our world up to academics, or corporations, or even governments. Biological hacking may potentially transform healthcare, solve energy problems, mitigate climate change, and more. Or it could wreak environmental devastation and facilitate horrifying attacks by either individuals or governments.

Other movements are taking place as well, as part of what's called the Maker Movement. Arduino and Raspberry Pi are revolutionizing microelectronics. 3D Printing is tantalizing us with the possibility of personal manufacturing. And, with Bitcoin, we can create our own virtual banks. It is the Makers, the creators that will create the world of tomorrow. Visionaries, investors, and skilled professionals need to recognize that as creators, they will create the world of tomorrow. The question is, do they understand the power of change. On the road to the future, there will be lots of landmines that will destroy those who venture too close.

Dealing with change is simple.

- Make a decision to *understand* change
- *See* the implications of change, and most importantly
- *Capitalize* on change.

See ... that was simple. But, it's certainly not easy. And who would want it to be easy? If it was easy, then profit opportunities would go poof! There would be very little, if any profit opportunity — where's the fun in that?

Understanding change means first and foremost, understanding what drives us psychologically.

## PSYCHOLOGICAL DRIVERS OF CHANGE

“Intelligent people know others.  
Enlightened people know themselves.  
You can conquer others with power,  
But it takes true strength to conquer yourself.”  
— Lao Tzu

While it's important to understand the world around us, it's even more important to understand the driving forces, the emotional forces that lie deep within ourselves (and others) that are the true drivers of change. At the most basic level, four emotional forces lie at the heart of what moves us: Fear, Greed, Envy, and Pride.

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### FEAR

The Power of Wisdom's principle of Duality is this: *Nothing Exists without its Opposite*. Let's look at the financial markets — which are an excellent microcosm of the larger economic world. Two emotions drive market psychology — fear and greed. I list fear first because this emotion is by far the most powerful. When the market turns south, envision the [Running of the Bulls](#) in Spain. In such cases your #1 priority is to not get run over by the bulls. Greed is the flip side of fear — yet it's not quite as powerful because wanting more is simply not as instinctive as our fight or flight DNA. One way of looking at it is — *fear* is about getting away from the stampede and *greed* is about controlling piggishness.

*The Power of Wisdom* will help investors better understand the markets because it helps them to change how they see the world. Visionaries would also do well to at least understand the basics of how markets work. After all, the markets reflect underlying economic conditions. "...stand back for a moment and witness how you perceive a simple coin." When looking at a coin people typically focus on the side facing up, yet both heads and tails are inseparable. Likewise, the

market is comprised of interlocking markets. Stocks, Bonds, Commodities, and Currencies together reflect the world we live in. No market is an island and the value of securities depends in large part to the value of other securities. "...the fastest, easiest, most spontaneous and most natural way to achieve everything you desire is to change how you see the world."

Investors must come to terms that trading is not about being right — it's about making money. If your trade isn't right, then get out! If your trade is right, then don't get too cocky. Bulls make money, Bears make money, but Pigs get slaughtered. Remember this about trading: "It's not personal, it's business." The markets function is to value assets; be it stocks, bonds, commodities, or currencies. The market doesn't care about you and you don't need to care about the market — use it, and be careful not to get used by it! When investing there's only one thing you can control — YOU:

- What *you* trade
- How much *you* risk on a trade, and
- When *you* trade.

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## GREED

“Greed, for lack of a better word, is good. Greed is right. Greed works. Greed clarifies, cuts through, and captures, the essence of the evolutionary spirit. Greed, in all of its forms; greed for life, for money, for love, knowledge, has marked the upward surge of mankind ...”

— Gordon Gekko (Wall Street)

As a word, [greed](#) is often confused with either [ambition](#), which is normally considered to be good, and [avarice](#), which is an insatiable desire — often resulting in extortion, theft, and fraud.

Let's look at a few definitions:

Ambition: An eager or strong desire to achieve something, such as fame or power.

**“Without ambition one starts nothing. Without work one finishes nothing.**

**The prize will not be sent to you. You have to win it.” — Ralph Waldo Emerson**

Greed: excessive desire, as for wealth or power. Excessive! “Who is to determine what is excessive? Society? The individual? An unknowable supernatural entity? A giant purple space goat?” — [DarkWaters](#)

The fact is that “If we want the whole world to be rich, we need to start loving wealth...”

— P.J. O'Rourke

And what would it mean to *start loving wealth*? Would it mean embracing the concepts of freedom and capitalism? Capitalism — yikes! That evil economic system that exploits workers

and consumers? No, that's not capitalism. [Capitalism](#) is "an economic system in which investment in and ownership of the means of production, distribution, and exchange of wealth is made and maintained chiefly by private individuals or corporations." It's also been called [Free Enterprise](#), which is "The freedom of private businesses to operate competitively for profit with minimal government regulation."

As I was looking through my notes the other day, I came across an article called "Freedom Keys" which highlighted [The Gap between the Rich and the Poor](#) which talks about the war against the productive, especially business professionals.

Apparently, according to the powers that be, we (as business professionals) should stop working so hard to make money. Either that, or we should feel honored and privileged to give larger and larger portions of our earnings to Uncle Sam.

Of course, "Politicians never accuse you of 'greed' for wanting other people's money – only for wanting to keep your own money."

— Joseph Sobran

Visioneurs, investors, and highly skilled professionals need to understand that "Wealth may provoke envy, but it seldom provokes the truly venomous levels of resentment provoked by achievement..." — Dr. Thomas Sowell

Personally I feel that Greed (wanting more) = Ambition, and that's good.

- Greed promotes *individualism* instead of collectivism (which is why so many on the left vilify greed, that is wanting more for oneself instead of the collective (the common good)).
- Greed promotes greatness at the expense of equality. Those who produce are rewarded for their hard work.
- Greed rewards action and productiveness, not sloth and laziness.

Contrary to popular belief, the economic pie is not fixed. It can be made bigger. Greedy capitalists (Financiers, Investors, Visioneurs, etc.) help make the pie bigger.

In my opinion, *greed* is only bad when it mutates into *avarice*, involving:

1. Extortion, Threat, or Fraud ... Using force (or the threat of force) violates the rights of others — even if it is a government that does the dirty work.
2. Sacrifices one's own higher values, such as health, for money. Of course this is an intensely personal choice.

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## ENVY

Envy is what whets our appetite, it stirs our inner desires. It's the fact that we want what others own. Material possessions define us, and there's nothing wrong with wanting more. Except, there must be something wrong with wanting more ... let's make it a sin!

Whether the sins originated from the Greeks or Pope Gregory the Great, *envy* was labeled as one of the seven [7 Deadly Sins](#). It's almost as if we should just give up and stop wanting stuff — this would get rid of that awful sin of envy.

Envy, like greed, fuels the spirit of achievement and consumption. One definition is **DESIRE FOR SOME ADVANTAGE, QUALITY, ETC. THAT ANOTHER HAS**. Duh, don't we all want what others have? If you see someone driving in the car of your dreams and you want it, that's a sin.

Visioneurs and investors, just like other highly paid professionals, are human too. Why work hard, take huge risks, if in the end we're supposed to be docile sheep — not wanting **FANCY** things (which we see that others already own). Cars, Boats, Vacations, a larger Home. To want these is bad, the sin on envy — give me a break.

Imagine a world without *envy*! The economy would absolutely crash. People would be content, or worse — comfortable. Why work harder? We already have everything we **NEED**. Who would set the standard of *need*? Is it food, water, shelter? And what constitutes appropriate food and shelter? Is a *favela* in Brazil enough? What about a high-rise condo? Who gets to decide what's good enough?

And what about food? Does a greasy burger and fries qualify? A healthy salad made from organic vegetables? Or maybe it's only a bowl of rice and maybe some vegetables? Who gets to choose? Of course you can forget about a car, we don't **NEED** cars! or boats, planes ... you get the point.

As humans, we envy others wealth. It's how we deal with envy that's most important. Being **RESENTFUL** of what others possess is bad — in that it doesn't help us actually get what we want. On the other hand, envy can be a powerful driver (a painful desire) that propels us to earn the money to buy the object of our affection.

However, Envy is a useful tool in politics for distraction and assigning blame.

“You campaigned against rich people and you got enough envy whipped up in the country and you're gonna get 'em. You're gonna stick it to those rich people. But guess what? You may not get anymore revenue. You may not get anymore economic growth. But you can say, 'I stuck it to the rich people.' — Rand Paul

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## PRIDE

Pride is also considered to be one of the [7 Deadly Sins](#) and may be considered the most serious sin. How in the hell did *pride*, a basic human emotion related to admiring our accomplishments, become a sin?

What is pride? Below are some definitions I found on the web:

Google Definition Search:

- a feeling of self-respect and personal worth
- satisfaction with your (or another's) achievements
- unreasonable and inordinate self-esteem (personified as one of the deadly sins). Which begs the question, who says what is *unreasonable*?

Here's my theory, the Church (interpreter of all that's holy of course) felt that if people started to think well of themselves, they may stray from god, or worse — question the teachings of the church, thereby eroding their power. Therefore, *pride* was listed as a deadly sin to control the masses. Work hard, but not for yourself. Work hard to glorify god, to give to others, but don't get too cocky. After all, what you get really isn't yours ... it's a gift from god. Banning pride is a useful tool for stopping people from trying to do **TOO WELL** in life. The ambitious (or those not giving enough of their stuff away) are accused of *pride*.

To me it seems awfully hard to be successful, yet alone very successful, if a battle rages on inside your head about feeling too good about what you're doing. How can someone, anyone become successful without feeling pride? I don't know. To me it's such a basic human emotion to think *I'm good* or even *I'm great* when you succeed. Visioneurs and investors are both risk takers — plain and simple, and should take *pride* in their accomplishments, just like everyone else.

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“Pride is when someone refuses to bow down, it's when someone does not give up their opinion just because others want one to do so. **Pride is when one does not humbly accept one's role as a servant** to others or to god, but asserts his right to live for himself and his loyalty and open acceptance of himself as a value.” — [ifatart](#)



If you think that we've gone through lots of change recently, I've got news for you: you ain't seen nothing yet! We live in a time of hyper-change. In fact, change is becoming nearly unpredictable. Knowledge breeds more knowledge and our world is shrinking fast thanks to the internet and smart-devices connected to the net. It's not even about Smart-phones any more. I know, they just got here, but already we're moving on to wearable computing — Google Glass (2.0?), smart watches, jewelry, you fill in the blank \_\_\_\_\_. Our world is being turned upside down. 3D Printing aims to revolutionize manufacturing. Open Source Hardware may change the nature of manufacturing. And. It's all becoming [programmable](#).

In 2008, the financial markets crashed all over the world and many economies around the world are still on Central Bank life support. Nonetheless, technology isn't slowing down. Dreamers are still out there in full force. Elon Musk of Tesla dreams of a [Hyperloop](#) that rockets passengers from Los Angeles to San Francisco in 30 minutes? Will railroads be replaced? Will airlines see serious competition?

“The best way to predict the future is to invent it.” — Alan Kay

## Inside the Tornado

Although technological change sometimes seems to crawl, maybe it's an illusion. Our expectations seem to be altered, perhaps out of a need to keep our minds from exploding. It's like we're in the eye of a hurricane. We need a certain level of certainty. We develop filters to slow down the rapidly spinning world of technology. Yet, right below the surface, technology is ripping up the foundations of our world. Businesses used to plan for years, and sometimes decades in advance. Now they worry about the next big bang disruption that rips apart their business in months or a few years at most. Cultural and legal structures do their best to fight the waves of change, but change continues to march on relentlessly.

With the advent of the internet, or more specifically the World Wide Web, in the early 1990's — mankind's potential absolutely exploded. It's not that we suddenly received a brain upgrade; it's just that we started coming together like never before. The world around us shrank. It's now as easy to talk with someone across the world as it is to talk with someone across town. With voice and video communications came the ability to collaborate — not just socially, but professionally. Scientists, engineers, and business professionals are now able to spread their ideas far and wide. Just look at this [map of hackerspaces](#), or [FabLabs](#). There all over the place. With such divergent thinking around the world, the internet helps take our thinking to a much higher level.

There's even a book, [Inside the Tornado](#) that talks about hyper-growth strategies. Hyper-growth markets may seem a distant memory ever since the dotcom boom and bust — even more so with the 2008 financial crash. Yet, many of Moore's principles remain valuable to navigating the treacherous waters that lie in challenging the status quo.

Strategies to Cross the Chasm (shifting away from niche status into the mainstream) differ from Inside the Tornado strategies. While hyper-growth tapered off in many technology industries, many markets are heating up. GRIN, Genomics (biotechnology), Robotics, IT, and Nanotechnologies are about to create a fireball that drastically changes the way we live, work, and play. Tiny sensors, bio[nano]engineered substances, and advanced robotics will pave a new superhighway to the future.

Inside the Tornado is especially valuable for visioneurs creating new ventures. Seed stage technology products must be initially tailored to the psychological and technical needs of the bleeding edge. Technology enthusiasts live in a different world from the majority. Once the product gathers steam, it must cross the chasm to enter the mainstream world. Winds swirl faster and faster as products move further into the mainstream. No longer is the product an entity upon itself. A whole package is needed, which often means complementary products that augment and enhance the initial product (think of the symbiotic relationship of hardware, software, and communications).

Non-technology companies also need to understand (and perhaps learn from) the forces shaping technology companies. Technology sweeps across landscapes like a tornado, tearing up huge chunks of earth. In the 1980's PC's tossed huge advantages to those companies flexible enough to weave decentralized personal computers into their operations. Then in the 1990's, the Internet swept across the landscape — destroying old business models, and creating new business models. In the 2000's, mobility took center stage. Future Technology will do the same. *Wireless Everywhere* will impact virtually all industries, especially retail. Apps will be hype-connected. Robotics and 3D Printing will revolutionize manufacturing. Open source hardware will also force us to rethink today's business models.

## Revolutionary, not Evolutionary

### FAR-REACHING CHANGE

Back in 2005, Joel Garreau wrote [Radical Evolution](#), which talks about the reshaping of our minds and bodies — and what it means to be human. Fast forward to today and you'll see that science fiction is becoming reality. Although the future cannot be predicted, it is created by those most dedicated to creating change. By interviewing today's leading scientists and other thinkers, Garreau shows us the possibilities just over the horizon. Critics are quick to point out that *Radical Evolution* is overhyped and simply too futuristic. Agreed, it may be over-hyped, yet consider this as food for thought:

In 1906:

- Average Life Expectancy in the U.S. was 47 (Today it's about 78).
- Only 8% of homes had a telephone (Now, most of us carry phones in our pocket).
- More than 95% of all births occurred at home.
- The leading cause of death was Pneumonia and Influenza (Today relatively few die of Pneumonia/ Influenza in the western world).
- Automobiles were *horseless* carriages.
- Planes were considered toys, certainly not transportation.
- Radio didn't exist.
- Television was a crazy dream. Travel to the moon? Lock that guy up!

The overriding question is: What's in store for humanity?



According to Garreau (and from the thinkers who are actually out there working on the details right now), humans may soon create:

- Super-intelligent machines.
- Direct connections between human brains and computers.
- Non-aging bodies.

*Radical Evolution* explores both sides of the issue. Utopia or Hell. A world with overflowing food, cybernetic human/machine mergers, and unimaginable prosperity. Or, a world with nano-pollution, super-genetically engineered humans who dominate and enslave regular humans. Not to be entirely dismal, Garreau offers a third scenario in which we selectively choose what radical technologies to adopt and those to reject.

Radical Evolution is almost mind-boggling. Reading it is like sucking in rocket fuel. It will definitely turbo-charge your thinking.

For even more, check out the [Singularity Hub](#), which talks about a lot of what now looks like crazy stuff — yet tomorrow they may become necessities. Think about how automated production is rapidly approaching the point where humans can't keep up. While 3D Printing grabs the headlines, futuristic robotic systems are here today. Someday 3D Printers will match traditional milling, yet seemingly under the radar, advanced automated systems such as those from [Kuka](#) (Germany) or [Amada](#) (Japan) can compete with the finest craftsmen in carving up a block of aluminum. Only for large manufacturers? Ok, but consider [Othermill](#), a portable, CNC mill specifically designed for DIY *makers* that's compact enough to be used on a desk, or even the kitchen table. With Othermill *makers* can produce custom circuit boards as well as engraving and milling 3D shapes for jewelry or mold making.

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#### DRAGGING AN ANCHOR

Naturally certain areas are more resistant to the winds of change. Think *education* and *healthcare*. Yet even these are facing some serious headwinds. As Dwight D. Eisenhower wisely said — “Neither a wise man nor a brave man lies down on the tracks of history to wait for the train of the future to run over him.” [Clayton Christensen](#) (HBS Professor & Disruptive Innovation Expert) wrote a groundbreaking series of books on *disruptive innovation*, clearly outlining how upstarts attack markets, leaving incumbents dazed with confusion on what exactly happened to their once secure markets.

Healthcare is a monstrosity. According to a recent [PWC report](#) DIY healthcare may “...enable consumers to take charge of more of their own care, even becoming co-creators of their personal health plans.” Extreme Tech reports that [Do-it-yourself healthcare is closer than you think](#). With an estimated \$3 trillion spent on healthcare, you'd think we'd be one of the healthiest societies on earth — far, far from the truth.



‘The empires of future will be the empires of the mind.’ — Winston Churchill

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### ACCELERATING CHANGE

The 21<sup>st</sup> Century is a time of accelerating change and the industrial-age is fading away as we thrust forward into a new era driven by knowledge. On the road to wealth, physical strength and resources are quickly becoming washed out secondary roads. Knowledge, skill, and information are the new super highways to success. For those bold enough to seize the opportunity there is massive potential.

Nations, industries, and companies transform over time as they change their condition, nature, or character — permanently. Most of this change occurs incrementally, thus supporting the status quo. However, sudden disruptive change that upsets the apple cart is what radically changes the landscape and offers the most profit opportunities for visioneurs and investors. Here are a few areas that are experiencing significant change:

- Education – Artificial Intelligence, MOOCs (massive open online courses)
- Healthcare – Apps, Synthetic Biology
- Internet of Things – Big-Data, Sensors

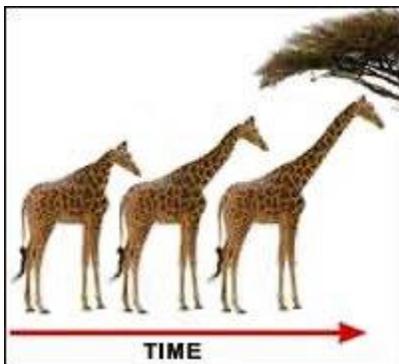
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## SURVIVAL OF THE FITTEST

When Charles Darwin coined the term *survival of the fittest* he did not imply that:

- the strongest will survive
- the fastest will win
- the smartest will succeed, or even that
- the biggest will dominate.

Darwin used the term fittest. By fittest he meant that organisms best *adapted* to their environment will survive. Look around the world and you'll see an incredible amount of adaptability in both the plant and animal world. The simple fact is that plants and animals live where they do because they successfully adapted — the others died.



The same happens throughout the business world. With the exception of government interference, customers say who lives and who dies. Wal-Mart didn't seal the fate of small retailers, customers did.

For visioneurs and investors alike, it's critical to understand whether or not a company will survive or die. Solving problems that don't exist or delivering products that don't meet a need is a sure fire way to crash and burn. Going *long* on a Dodo bird is inherently dangerous, as is *shorting* a soon to be sprinting Cheetah.

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## ONLY THE PARANOID SURVIVE

"Technology happens, it's not good, it's not bad. Is steel good or bad?" — Andrew Grove

The legendary Andy Grove, of Intel wrote [\*Only the Paranoid Survive\*](#). Business is tough. Customers are self-absorbed. Competitors sweep through the jungle, ready to tear you to shreds. And to make matters worse, technology is shaking the ground all around us.

*Only the Paranoid Survive* is a nuclear bomb in the wrong hands — read it before your competitors start to really think. It will help visioneers understand the power of disruption and how to tap into that energy. Investors will also be richly rewarded. Grove shows how 10x change literally blows apart industry-think. Doing business in a different way will kill you.

History is littered with obsolete ways. In ancient warfare the *cross-bow* changed warfare overnight, as did *gunpowder*. Airplanes took battle to the skies. On the business front; industrial machines destroyed old, inefficient ways. The *cotton gin* revolutionized agriculture; the *sewing machine* brought affordable clothing to the masses as it sent hand-sewing the way of the dinosaur. Adding sound to movies destroyed silent movies. More recently, the *personal* computer changed nearly every business imaginable, as did the internet. Now Smart-phones and tablets are displacing PC's. Business models such as Wal-Mart's extreme discounting and Southwest Airlines Point-to-Point system swept through their industries like wildfire.

Within every industry, there are winners and losers... which one will you be?

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## BIG BANG DISRUPTION



Disruptive innovation is now fairly widely known. However, change doesn't stand still — not even for Harvard Professors. Harvard Business Review ran a story on what they call [Big-Bang Disruption](#). Apparently *disruptive innovation* is too slow — so now we have Big Bang moments. At near light speed, bloggers and journalists raced to add their perspective on this new Big Bang Theory.

Deloitte' came out with [Digital disruption - Short fuse, big bang?](#) that talks about "...the magnitude of digital transformation within Australian business and government - the size of the 'bang' – as well as how quickly 18 industry sectors will be affected ...” Also in the report are follow-ons: *Mapping digital disruption*, *Responding to digital disruption*, and *Preparing for digital disruption*.

Inc. Magazine came out with [What a 'Big Bang' Disruptor Could Do to You](#). “A new innovation theory suggests your product could be wiped out suddenly, and swiftly. Here's what you can do about it--and up-and-comers can too.”

Exas Consulting wrote [Is Your Head Still In The Sand? Big-Bang Disruption In The Electric Industry](#) which of course is one of the slowest moving industries around. Utilities just don't move very fast. They're highly regulated and typically plan years and decades into the future. Yet it appears they too are not immune to the Big Bang, although it looks like their moving in slow motion.

According to the Big Bang Disruption Theory there are only two segments: trial users, who often participate in product development, and everyone else. Wow, talk about shortened lifecycle. Consumers are and will continue to be more engaging in the financing, creation, marketing, delivery, and support of products (and services). Think about *open source*, the *sharing economy*, and *3D printing*. Each of these separately holds vast potential, combined they're dangerous to the status quo. Big-bang disrupters don't follow the rules, they re-write the rules. They're undisciplined and are fixated on creating really cool things. Business models are not in their vocabulary, at least in the early stages. To keep up to date, follow their updates on [Twitter](#).

Open Source, once fixated on software, now applies to hardware too.

Frank Frankovsky delivered a [speech](#) on *Disrupting Hardware: The Next Era of Openness* at OSCON. He talked about how *Openness and working together always wins* and used trains as an example. In the early 19<sup>th</sup> century big issues with rails arose. Different rail sizes required lifting up trains and switching wheels when encountering different gauge rail. This of course frustrated consumers who ended up waiting, sometimes for hours while the wheels were changed.

Of course there was *entrenched resistance* as Frank called it —especially from businesses that offered train switching services. Decades later common standards were finally established; and lo and behold — trains moved faster, consumers were delighted not to wait several hours for the wheels to be changed, the number of rail miles shot up, and costs sank dramatically. A more up-to-date example is what we call the World Wide Web. The internet forms a backbone that allows untold number of engaging applications that otherwise would've been delayed many years. Who knows what the *net* would like without common standards. Frankovsky went on to say that there is most definitely a common trend and that's *naysayers*.



The future is anything but clear. You could say it's like driving, or even flying through fog. It really doesn't matter how fast you're going — you could even be in a rocket ship. That won't matter because:

"Rowing harder doesn't help if the boat is headed in the wrong direction" Kenichi Ohmae

Brett Owens did an [interview](#) with Tech Guru *Andy Kessler* where Andy talked about how "...we could look out 18 months or two years, while everyone else was focused from zero months to six months. We could look out into the fog. And if you look out into the fog and you can just make out even the outline of what an industry is going to look like, you can buy companies today that will benefit from these structural changes ..."

Andy goes on to say that you need to look at long-term scenarios and "...apply it to everything you do – any project you get involved in, any startup, any job interview, and any investment..." And in talking about investing, he says that "...all the money is made in the first 5 years. Even for 20-year investment opportunities, the most of money is made in the first 5."

The biggest reason to look deeply into the fog is to catch a glimpse of what's to come. When others are looking at the next quarter, and long-term is considered 12 months, looking out farther can give you a huge competitive advantage. Imagine starting a career or a company in a dead-end industry; or investing in a soon to be extinct dinosaur. Time is the one resource we cannot recover.

"The investor of today does not profit from yesterday's growth." — Warren Buffett

Looking at yesterday's earnings is what the majority of investors do and they wonder why they get so-so results. The future is what the market is all about. Isn't it time to gaze into the future?

The majority are easily led astray. Many business professionals are so obsessed with tactics; they ignore strategy, which is the core of success. Why is strategy so important? Because in this day and age you need something to guide you. Think of strategy as a ship's rudder. Without a rudder, it will be hard, if not impossible to steer a company in the direction of its goals — especially in stormy seas. Technology and globalization are creating unrelenting, almost cutthroat, competition in nearly all industries.

In the market today, products (and services) are either commodities or differentiated. Commodities are a deathtrap and fighting over price is a sure-fire recipe for stagnation — if not outright failure. Only those with the largest economies of scale knowingly tread into these dangerous waters. Differentiated products on the other hand offer distinct value to customers and the waters are much less choppy.

Company founders and senior leaders must lead their companies into the future by identifying and seizing possibilities. Strategy helps them understand the competitive forces within an industry and the strategic steps companies can take to enhance their competitive position. And, of course, investors must identify which founders and leaders are worth backing financially. Will the company be able to adapt to an ever-changing environment. It doesn't matter how much money a company made in the past — how much will they make in the future?

## The BIG Picture / Macro-economic Conditions



Global Forces push and pull entire industries. As such, it's important to understand what drives these global forces. What gives one nation advantage over others? Why do some nations fail or struggle to remain relevant? Michael Porter wrote *Competitive Advantage of Nations* that helps us to answer these questions or at least gets us started on thinking in-depth about how global undercurrents make or break industries.

Why read a book on strategy? Quite simply, to be successful. Technology and globalization culminated in ferocious competition for virtually all industries. To be competitive in today's world, you must understand that all value is derived from the customer. Therefore, you need to delve deep into how value is created for the customer — and that goes double for investors — how much value is or isn't being created for customers?

Competition is becoming increasingly global. Therefore, it is in your best interest to understand how national, international, and governmental issues affect your industry and hence, your company. Third in Porter's landmark trilogy, [\*Competitive Advantage of Nations\*](#) focuses less on industries and companies themselves, and more on how a firm actually gains an advantage over its rivals.

*Competitive Advantage of Nations* consists of four parts:

Part I - Foundations, presents the theoretical frameworks which form the basis for the rest of the book. In Chapters 2, 3 and 4 Porter revisits most of his previous work, such as the five competitive forces, generic strategies, the value chain, and the advantages *diamond*.

Part II - Industries, frameworks of Part I are applied to explain the histories of four industries (German printing press, American patient monitoring equipment, Italian ceramic tiles, and Japanese robotics). Plus the service sector.

Part III - Nations, frameworks of Part I are applied to ten nations. Porter splits these ten nations up in early post-war winners, emerging nations in the 1970s and 1980s, and the traditional business countries (Britain and USA).

Part IV - Implications, Porter discusses the impact of the frameworks of Part I on company's strategies and government policies. In the final chapter Porter tries to answer the question, "What of the future?" According to Porter "the central economic concern of every nation should be the capacity of its economy to upgrade so that firms achieve more sophisticated competitive advantages and higher productivity. Only in this way can there be a rising standard of living and economic prosperity."

*Competitive Advantage of Nations* is an excellent resource to help better understand how firms within industries gain a competitive advantage. Don't be blindsided by the comfort of the moment, prepare for the future now.

PEST, which stands for Political / Economic / Societal / Technological, is an approach for looking at the overall big picture — that is, what shapes industries as a whole.

A PEST analysis will give you insight into the various factors that affect the *ecosystem* in which companies operate. Is the forecast sunny, partly cloudy, or are thunderstorms just beyond the horizon?

Within a given Industry there are many competing forces. For example, Open Source is ripping apart traditional business models. 3D Printing is threatening to rip apart supply chains as inventory becomes a relic. To aid in analyzing these forces, the PEST framework looks at external factors that are usually beyond the firm's control and often present themselves as threats (hence the appropriate use of the term *pest*.)

In creating a PEST model you will need to look not only at the industry, but to those macro-factors affecting (or about to affect) the overall environment in which the industry operates. In doing this you'll need to analyze and document the Political, Economic, Social, and Technological factors. Here is a partial example for the *Software Industry*.

### **Political Factors**

Government funded research; either direct or through research grants, is long-term in nature - often looking forward 10, 20, or even 50 years, well beyond the realm of commercial research. A prime example is the U.S. Department of Defense's Arpanet (1969) which underlies the foundation of today's Internet. Also the legal quagmire created by software patents was created and may or may not be solved through changes in the law.

### **Economic Factors**

By and large, the economy (barring major technological breakthroughs) dictates the demand for software. With continual pressure to achieve competitive advantage, companies in nearly all industries will keep on upgrading their technology — of which software is an integral part. Only through automation will advanced economies such as the U.S. and EU be able to further raise their standards of living. More and more software is being integrated into hardware systems, and therefore increasingly driven by fluctuations in disposable income.

### **Social Factors**

Socially, the world is once again at a crossroad. In the 19th century, much of the world transitioned from farm work to factory work. Over the course of the 20th century, machines relieved mankind of much backbreaking, dirty, and dangerous work. Jobs shifted to factories, and then shifted again to services as automation engaged in full force. As we embark further into the 21st century, technologies will transform society into a new world order where brainpower

reigns supreme. More and more software is offered *free* in the cloud or is integrated into hardware devices. [Freemium](#) is one business model gaining momentum, especially with smartphones and tablets.

## Technological Factors

Our world is changing ... fast! Technology, particularly software, is being embedded into nearly every aspect of human existence. Our homes are wired and unwired, our cars are computer-controlled, and we listen to and watch hundreds of radio and television channels in both high definition and ultra-high definition. The internet, once known only to the privileged few, is now *online oxygen*.

With a PEST analysis in hand you'll be ready to contemplate a most important question — is the *overall* environment favorable or hostile at this point in time? For example, if a government passes (or is seriously considering) legislation that will severely impact the ability of companies to acquire resources critical to their success, then maybe it's in their best interest to sidestep these landmines.

## Industry Assessment

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### PORTER'S 5

The Porter's 5 Industry model originated from Michael E. Porter's 1980 book [Competitive Strategy: Techniques for Analyzing Industries and Competitors](#). Since then, his model became the de facto method of analyzing industry structure and resulting impacts on corporate level strategy. In *Competitive Strategy*, Porter identified five competitive forces that shape every single industry. Such forces help us analyze the various factors that heavily influence whether companies succeed or fail in the marketplace. While it's tempting to disregard Porter's theories as passé, his models still offer valuable insights on how industries work.

The five forces are:

1. Threat of New Entrants - The easier it is for new companies to enter the industry, the more cutthroat competition will be. Factors limiting the threat of new entrants are called barriers to entry.

Traditional barriers include:

- High fixed costs.
- High costs of switching companies.
- Government restrictions or legislation.

2. Buyer Power - This is how much pressure customers can place on a business. Here are a few reasons that customers might have power:

- Small number of buyers.
- Purchases of large volumes.
- Switching to another (competitive) product is simple.

3. Supplier Power - This is how much pressure suppliers can place on a business. Here are a few reasons that suppliers might have power:

- There are very few suppliers of a particular product.
- There are no substitutes.
- Switching to another (competitive) product is very costly.

4. Availability of Substitutes - How likely is it that someone will switch to a competitive product or service?

The main issue is the similarity of substitutes. For example: coffee vs. tea. If coffee prices spike, then customers may switch to tea.

5. Competitive Rivalry - This describes the intensity of competition between existing firms in an industry. Too much competition drives down margins, thereby creating low returns for the industry at large. A highly competitive market might result from:

- Many players of about the same size, no dominant firm.
- Little differentiation between competitors' products and services.
- A mature industry with very little growth. Companies can only grow by stealing customers away from competitors.

## HOW TO DO A PORTER'S 5

Whether you're an aspiring visioneur creating a new startup or a strategic investor looking to find future winners, you must play the role of a strategist. The Porter's 5 model gives you a *fill-in-the-blanks template*.

Before you start, you may want to search the internet for industry analysis reports that already include a Porter's 5 analysis. Sometimes these reports are available at nominal cost, or even free. Take such reports for what they are — a starting point. Doing your own research and analysis is an absolute must in that it will force you to think about the industry at large and most importantly ... how it will change over time, thereby significantly affecting the company's strategy.

Second, pick up a copy of [Competitive Strategy](#). It contains in depth information how to create a comprehensive industry analysis.

Start your analysis by listing out the five forces.

- Threat of New Entrants
- Buyer Power
- Supplier Power
- Availability of Substitutes
- Competitive Rivalry

For each area, ask yourself in-depth questions. For new entrants, you're looking at how easy it is for new companies to enter the industry. Buyer power is simply that — how much does the customer need the product the company creates? And how soon? Supplier power boils down to how much control suppliers have over control of the products the company *needs*. Also, carefully analyze how unique the company's product is (in the *customers mind*). If the company's product price suddenly spiked, what else might customers use to accomplish the same results. Finally, evaluate who's doing what in the industry. Is it highly fragmented with many players? Or is it dominated by a small group of major players at the top?

Acting as a strategist, you may want to rank each of the factors influencing a given competitive force as high, medium, or low in strength. A high force can be regarded as a threat because it is likely to reduce profits. A low force, in contrast, can be viewed as an opportunity because it may allow the company to earn greater profits.

In the short run, these forces act as constraints on a company's activities. However, in the long run, a company's strategic choices may change the strength of one or more of the forces to the company's advantage.

## HOW TO USE PORTER'S 5

Before you jump into any area of business, you may want to carefully evaluate just how attractive the industry will be. As Wayne Gretzky so eloquently put it ... "I skate where the puck is going to be, not where it has been."

A Porter's 5 industry model will offer you deep insight into a company's industry, including whether or not they should enter (or stay in) the industry.

Some of the insights such an analysis will convey are:

- How is the industry perceived by others, both inside and outside industry boundaries? (Is the industry likely to be avoided or are troops being mobilized to attack the industry?)
- What business models are being used to generate sales — now and in the near future?
- What cost structures are being employed to generate profits?
- Who are industry competitors — now, and more importantly — who will be competitors in the near future?
- Who are buyers? How might buyers needs shift over time?
- Who's supplying materials/ resources to the company? What power do they have to pass on higher prices?

All in all, a Porter's 5 analysis will help you (after validating genuine market need) create or identify compelling business models and powerful business strategies. To dig even deeper into competitive strategy, here are a few other resources:

- [Competition Demystified](#), Strategic thinking is about creating, protecting and exploiting competitive advantages
- [Value Migration](#) *How to Think Several Moves Ahead of the Competition*

### Company Level

“Competitive strategy is about being different. It means deliberately choosing to perform activities differently or to perform different activities than rivals to deliver a unique mix of value.” — Michael Porter

Whether you're starting, growing, or investing in a company; it's important to understand the concept of vision. And by vision, I don't mean some well-articulated statement hung up on the wall, I mean what is the *purpose* of the company — why does it exist?

Consumer products and services do one of two things:

- 1) Solve a Problem
- 2) Fulfill an Emotional Need

Why is vision important? I'll give you two reasons: first, it is a guiding light for the company and second, a vision inspires and provides meaning to day-to-day work. An ancient Japanese proverb states, "Vision without action is a daydream. Action without vision is a nightmare." Dreamers let opportunities slip by, one by one, and simply doing is a recipe for going nowhere, fast!

A vision statement is a powerful force that empowers those who work for you. Peter Schultz, former CEO of Porsche, tells a story of three construction workers.

"Three people were at work on a construction site. All were doing the same job, but when each was asked what their job was, the answers varied.

- 'Breaking rocks,' the first replied.
- 'Earning my living,' the second said.
- 'Helping to build a cathedral,' said the third."

It's the third type of worker that will help create great companies and that's what visioneers want to create. And naturally, investing (at an early stage) in great companies is the dream of many investors.

In creating a company's future, two guiding forces are the vision and mission statements. While a vision statement looks to the future, a mission statement remains grounded in the present. A powerful example of vision is Amgen's statement. "...To use science and innovation to dramatically improve people's lives..."

Creating an exceptional vision statement requires four characteristics. It must be achievable, credible, attractive, and future oriented.

A vision statement requires asking thought-provoking questions such as:

- Why was this business started? Or why is it being started?
- Then ask, what will the business look like in 10 years?

With vision acting as a guiding light, you will be ready to seize more opportunities. Bill Gates of Microsoft stated in his book, [Business @ The Speed Of Thought](#), "Business is going to change more in the next 10 years than it has in the last 50." As a visionary or investor you must start thinking differently.

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## SWOT

SWOT is a model that looks at the Strengths and Weaknesses within a company, and then moves on to what Opportunities and Threats face the company.

Strengths and Weaknesses are primarily internal and comprise the company's competitive advantages. It's important to look at a company's weapons arsenal. Weapons may be both tangible and intangible. First up are the company's *financial resources*, *strategic information technology systems*, and exclusive or preferential *supply agreements*. On the intangible side is a motivated (or better yet — *inspired*) workforce, *intellectual property*, and *brand*. All told, these factors create a fortress around a company's competitive advantage.

The strength of these factors determines their classification as strength or weaknesses. By looking closely at competitors you'll be able to compare and contrast the various factors to reach an assessment of how strong each company is and most importantly, the chinks in their armor.

Business is war. Companies must stand up and fight — for their right to serve the customer. In the end it's kill or be killed (bankruptcy). In looking at the battlefield, you need to do three things:

- Size up the battlefield
- Size up individual market players, and
- Seize market segments and niches that competitors have overlooked

In order to capitalize on opportunity you must understand the organizations *core* strengths and non-strengths. In essence, the company's core is a compilation of each person within the organization. What energizes them?

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## HOW TO DO A SWOT ANALYSIS

Whether you're an aspiring visioneur creating a new startup or an investor sizing up a company's potential, you must play the role of a strategist. In assessing a company's SWOT, consider some of these questions:

### *Strengths:*

- What unique resources can the company access?
- Why do others do business with the company? Is it more than just money?

### *Weaknesses:*

- What are competitors doing that makes them so successful?
- What's holding the company back?

Again, consider this from an internal and external basis: What do others (customers, partners, suppliers, etc.) see as the company's weaknesses? Listen deeply to what others say, outside viewpoints offer insights that are easily missed by those too close to the problem.

*Opportunities:*

- Look out 5 yrs. 10 yrs. — what's on the horizon?
- What would be really cool?

*Threats:*

- What's the competition doing?
- What technology would wipe out the market for the company?

In looking at SWOT, be sure to view them in relation to competitors — for example, if all of the company's competitors provide high quality products, then a high quality production process is not a strength in the market, it's a necessity. That's why cost seldom offers a competitive advantage. If the customer's priorities are 1) Reliability, 2) Customizability, and 3) Speed of Delivery, being cheaper is not a strength unless the company can also beat the competition on all of the other factors as well.

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## HOW TO USE SWOT

A SWOT analysis offers insight into numerous possibilities that affect a company. Some of these insights are:

- *Core* strengths may shine bright? Same with weaknesses. Lacking legacy computer systems and entrenched corporate fiefdoms conveys an advantage for start-ups.
- Otherwise stealth opportunities may suddenly materialize.
- Threats, such as those posed by emerging technologies may become opportunities if recognized at an early stage.

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## FINDING OUT WHAT THEY'RE UP TO:

Wouldn't it be great to find out what companies are up to? Well, actually there is a way. Most people don't realize that most of what we think must be secret is right there ... out in the open! Even companies that cook their books — like Enron, disclosed enough information. It's just that investors were mesmerized by greed and thought they could get out in time if things did go wrong. [Open Secrets](#) by Malcolm Gladwell tells the tale of how they did it. Two places to look for information on public companies is the company itself — internal, and outside, external sources.

## INTERNAL – STRAIGHT FROM THE HORSE’S MOUTH

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Investor Relations, on the company’s website is a convenient source of information on the company’s financials which are disclosed in their Annual Report (warning – lots of fluff), as well as the SEC required 10Q (unaudited) and 10K reports. Or, if you prefer, go straight to the U.S. Securities & Exchange Commission ([SEC](#)) for these documents. In these reports you’ll find both quantitative and qualitative assessments of what’s going on in the company. Quantitative data is data that can be measured; while qualitative data deals with descriptions, where data is observable, but not measurable.

Quantitative data may be found in the Balance Sheet, Income Statement, and the all-important Statement of Cash Flows. In these reports, you’ll find all the information you’ll ever want on the company’s assets and liabilities. What are their sales and expenses → and most importantly their profits? Plus you’ll be able to find out if those profits are just accounting tricks or cold, hard cash!

Qualitative data is found in abundance in the Annual Report as company executives vividly deliver a dog and pony show. For a more serious discussion, I’d suggest reading my favorite section → the Management Discussion and Analysis (MD&A) in the 10Q (Quarterly) and 10K (Annual) reports.

## EXTERNAL – THE MARKET KNOWS ALL

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If you don’t really like looking at numbers (I don’t) then another way is to go to websites that visualize financial statement data into cool looking charts. My favorites include:

- [Google Finance](#)
- [MarketWatch](#)
- [Y-Charts](#)

The Market maybe the best source of information since millions of investors put money on the line each and every day. They, unlike most of the talking heads on TV, have skin in the game. Websites that summarize financial and market data include:

- [Google](#), [Finviz](#), [StockCharts](#) (Market Data/ Charts)
- [Motley Fool](#), [StockTwits](#) (Social Commentary)

Also many analyst reports are available. And most aren’t shy about stating their opinion. Just be sure to take what they say with a grain of salt. Analysts may help give you a new perspective — which you can then use in doing your homework. Many of the large consulting companies also openly share their opinions on what they think of the world tomorrow. Consulting groups such as Deloitte, KPMG, and McKinsey often publish reports on the state of various industries. And, Wall Street analysts are always throwing together stock reports peddling why xyz stock is a buy

(mysteriously sell recommendations are like the mysterious *Big Foot*). While certainly biased (isn't everything), these reports may help you think in new directions.

## Business as War

"Business is about war. It's not about better people and better products." — Jack Trout

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### BATTLEFIELD

Business is not a country club, it's a battlefield. Winning on the battlefield means winning the opportunity to serve to customer. Ultimately it's the consumer who strikes the deadly blow to companies. Wal-Mart didn't wipe out small town retailing — consumers did with their decision to shop at Wal-Mart.

Competitors, along with suppliers, and other market players comprise a fighting force. Even government is enlisted in the fight. After all, what better weapon in business than those with real guns which back up laws, regulations, and court orders? Just look at Microsoft which felt the full force of the law breathing down its neck. Consumers mostly benefited from Microsoft's products — in fact they willingly bought Microsoft's products. Yet, Microsoft's competitors, unable to compete in the market, enlisted government to attack Microsoft. Microsoft survived, but now Microsoft is a much weaker player and now plays catch-up in the mobile market.

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### PLAYING BY THE RULES – NOT!

In war, you don't have to play by the rules. American Revolutionaries didn't fight by traditional British custom. The Viet Cong didn't fight face to face with a stronger force — they adopted hit and run (Guerilla) warfare. Even today, warfare is being reinvented. Terrorists use civilian airplanes to strike targets. Civilians are laden with explosives, and even biological agents.

So it is with business. No one says you have to honor long-standing industry traditions (the rules). Rules are made to be broken. So long as you don't violate the law, the rules of engagement are kill or be killed.

"War is a matter of vital importance to the State; the province of life or death; the road to survival or ruin. It is mandatory that it be thoroughly studied." — Sun Tzu

Size up the battlefield: To fight a good fight (or better yet to avoid a fight completely) you must understand what the battlefield looks like. That's why it's extremely important to understand the big picture — which you should study in detail.

The fact is that there are winners and losers in business. The best products don't always win. The best people don't always win, and the best strategies don't always lead to victory.

### *Best Products*

Many managers cling to the fallacy that the best product wins. Wrong! Better products fail all the time. Customer perceptions are much more powerful than illusions of grandeur. Telling customers they're wrong or misinformed is a surefire recipe for losses. Larger, more powerful competitors are always ready to create fear in the mind of the customer. The master of course is Microsoft. For years, Microsoft products were assaulted by competing products — yet Microsoft fanned the flames of [FUD](#); Fear, Uncertainty, and Doubt in the minds of customers. In many cases Microsoft simply floated up the [vaporware](#) balloon to ward off competitor moves. In hindsight it's easy to see that Microsoft is much more a *master of marketing* than it is of *technology*.

### *Best People*

Special Forces may be better trained, more skilled, better armed, and more committed — yet when vastly outnumbered they'll be forced to retreat or be annihilated. *Quantity* trumps *quality* on a regular basis. Yet companies routinely believe hiring better personnel and creating better training programs will magically lead to success. However, statistically speaking it is nearly impossible to create a large workforce that is vastly superior.

### *Best Strategies*

Strategies by themselves are weak unless paired with *resources* and *execution*. Even the most brilliantly conceived strategy must be matched with enough *financial*, *intellectual*, and *organizational* resources — or be doomed to failure. Of course, Strategy + Resources are only 2 out of 3. To be successful, companies need to execute well-thought out and timely strategies. Top down strategies often fail from a lack of communication or mismatched incentives, as in the case of rewarding salespeople for overall sales without reference to profitability of those sales.

[Business Model Warfare \(pdf\)](#), by Langdon Morris is an exceptional resource to study the intricacies of Business Models. In the paper, Morris talks about how “There’s a story behind each of these business successes and business failures. Sometimes it’s a story of a great idea; sometimes it’s one that failed. Sometimes it’s a story of insightful management, or management that failed. But almost always it’s a story about change. Change in the market; change in the economy; change in a particular product or service that transformed a failure into a success, or vice versa.”

Sun Tzu, in the Art of War, says "Strike the Enemy as swiftly as a falcon strikes its target."

Companies face many enemies on the business battlefield. Aspiring visioneers and investors should closely study how companies deal with competitive encounters.

HBR's article from long, long ago (2004) rings as loudly as ever; [Winners in Business Play Rough and Don't Apologize for it.](#) When competitor moves pose a threat to a company, the company may respond softly by posturing — that is letting the competitor know, in no uncertain terms, that such a threat will not be tolerated. The media offers a perfect outlet for such posturing. Then again, a company may need to play hardball. Competitors don't always play fair.

Playing Hardball isn't just intense, it's efficient — it cleanses the market and raises the bar. How companies respond to competitor actions may mean the difference between greatly increased earnings and eroding profits. You need to keep an eye open to spot whether companies are playing softball, or hardball.

Here are several ways competitors attack:

#### *Customers*

Customers are the lifeblood of a company. However, some customers are better than others. And, some customers may even be deadly.

Companies need a tightly focused customer strategy tied to long-term profitability. At the highest level, customers need to be treated with best in class service. Bottom dwellers on the other hand may actually cost the company money. As such, these customers should be respectfully encouraged to do business elsewhere. Also, customers may prove deadly in two ways. First, and most likely, is that customers are silent killers. Silent customers who take their business elsewhere are most dangerous. Feedback must be encouraged and acted upon. Less likely, but still deadly is when customers viciously lash out at the company. In the age of Facebook, Twitter, and YouTube, bad press spreads like wildfire

#### *Government*

Seeking government favor or protection is a time-honored favorite tool of inept competitors. After all, government intervention in the form of legislation, regulation, or court mandate, conveys absolute competitive advantage backed by the full force of the government.

Throughout history, companies of all shapes and sizes sought government favor — to seize competitive advantage, and to deny other players from even setting foot on the playing field. Exclusive rights to land and other natural resources are one such monopolistic intervention. Another, more prevalent intervention is blocking maneuvers, largely on behalf of competitors.

Microsoft's battle with the U.S. Department of Justice and European regulators is a powerful example. When competitors were hurt by Microsoft's success; unable (or unwilling) to compete, such competitors ran screaming to Uncle Sam for help in dealing with what they called a monopolistic bully. In reality, Microsoft played hardball. Others weren't up to playing hardball and instead sought government intervention to avoid such intense competition. A more recent example is [Uber](#), which is facing off against government regulators who clearly favor the existing Taxi industry.

### *Media*

The media is another favorite tool of inept competitors. If government action is not an alternative or if it doesn't work, the media is an excellent medium to spread the word of stronger competitor's misdeeds. Just look at Wal-Mart. It plays hardball and is vilified by the media as an uncaring, blood-sucking mega-corporation. At every turn it enslaves its' employees, towers over competitors, and drives small retailers into the ground.

### *Key suppliers*

Key suppliers hold critical resources essential to a company's survival and success. Companies must always scan the environment for alternative suppliers unless exclusive or strategic agreements are in hand. Even then, it pays to keep one eye open.

Never underestimate competitor's ability and willingness to strike offensively or defensively. Competitors, working with a company's suppliers, may cut off the supply of critical components, including people with specialized knowledge. Resources essential to success must be accounted for in overall business strategies. Such resources must be protected and used to accelerate the development, production, marketing, and delivery of products/ services.

Resources play a pivotal role in corporate strategy. Therefore suppliers must be looked at as a source of competitive advantage or disadvantage. Managed successfully, suppliers can be a powerful weapon.

Business is about playing hardball. Companies should not be afraid to put a shot across a competitor's bow. Competitive responses may be to steal employees, drop prices, add key features without increasing price, or to increase capacity.

Investors should look at companies with a jaundiced eye. Is management soft? Are competitors knocking on the company's door — about to knock it down? Looking at how competitors are slugging it out; in the market, government halls, and in the media is imperative and may vastly increase your chances of betting on the winning (long) or losing (short) team.

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## THREATS/ OPPORTUNITIES

As an unstoppable force, "Technological change is like an axe in the hands of a pathological criminal." — Albert Einstein. Threats are here to stay, as are opportunities.

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## CREATIVE DESTRUCTION

"In the middle of difficulty lies opportunity." — Albert Einstein

Aspiring visioneurs and investors need to look for threats to the status quo. It's been said that *every dark cloud has a silver lining*. And that's absolutely true — the question is ... a silver lining for whom? Threats to one company can definitely be opportunities for other companies, aspiring visioneurs, and investors. There's even a term that perfectly describes the seizing of such opportunity — it's called [Creative Destruction](#).

Although *creative destruction* often causes economic distress in the short-run, it creates new economic order as innovative products are brought to market. Business as usual is the enemy of innovation. The problems facing humanity are huge and *incrementalism* just won't cut it. Yet, that's what most people do. *Slow but sure* is their mantra. It seems as if "Too many people are thinking of security instead of opportunity. They seem more afraid of life than death." — James F. Byrnes.

Creative Destruction re-maps the way we live, work, and play. It's hard to even imagine a world without the Internet — yet less than 25 years ago, few even imagined such a global, earth shattering, way of communicating. Faxes ruled the day — now they're dinosaurs.

More change is on the way. You can either create change or be at the whim of those who do the changing.

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## DISRUPTION

"To be certain to take what you attack, attack where the enemy cannot defend." Sun Tzu

Business is not about making nice. It's about making money by giving customers what they want and stopping competitors from interfering with your plans. As Sun Tzu said, attack the enemy at its weakest point — where it cannot defend. The essence of *disruption* is to seize market segments and niches that competitors overlook.

While disruptive innovation is no longer a secret — witness Clayton Christensen's innovator's trilogy, *Blue Ocean Strategy*, and most recently — *Big Bang disruption*. Disruption is both overused and misunderstood. The vast majority are still clueless on exactly how disruption shapes markets. Companies must start with what customers want deep down. Don't just listen to customers; they'll lead you down the path of mediocrity. Customers don't really know what they want. If you ask them, they'll tell you more of the same — Faster, Better, Cheaper. When in

truth, deep down, they want something entirely different. Instead — watch what customers do with the product. Listen in on conversations among customers and their friends (much easier now, thanks to blogs, Facebook, and Twitter).

Once a company knows what customers want, they can put all their energy into adding value to the customer. It's not just the product; it's the entire experience from acquiring, using, and even disposing of the product. Dig deep, look far and wide. Processes surround creating a product (or service). Some add value, some do nothing, and others actually strip value out of the equation. Dig deep inside the organization to find what actually adds or subtracts value. If a process is not adding value, ask how (don't even ask if) can the process be eliminated? Look at the entire value chain — up and downstream. Who else does the customer come in contact with before, during, and after purchase? What is the customers' experience? How can the process be improved? Can the retailer or manufacturer improve quality, reduce costs, or speed up delivery?

Combined; product need, design, experience, and processes comprise a battle plan on how to attack various market segments left under or even un-defended. Let's look at the basics of Low-Cost, New-Market, and Big-Bang disruptions.

#### LOW COST DISRUPTION

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Disrupters rejoice when companies ignore customers. Customers are always looking for ways to get jobs done. Whether it's cleaning up the house, getting to work, or escaping the daily grind; the job needs to get done.

Many companies are slaves to their business models. With high cost structures, they continually disappoint some customers by offering too much. Companies often compete by cramming as many features as possible into their product, trying to please everyone. In the end, the product becomes too complicated and too expensive. Then the customer looks for alternatives.

Low-Cost disruption typically takes root among an incumbent's worst customers. New markets are not created; however, new growth is created. Examples of low-end disruption are steel minimills in the 1960's, Dell computer in the 1990's, and most recently Open-Source / Web-based software that is literally tearing apart the desktop centric view of the world — just look at Microsoft's stock which looked like a sidwinder for about 10 years.

Here are three keys in creating disruptive, low-end disruption.

#### PRODUCT OR SERVICE PERFORMANCE

The heart and soul of low-end market disruption is performance that is *good enough* to meet customer's needs. To be successful, lower end products must still get the job done. It's pointless to expect customers to change. Instead, lower-end products shave off all the excess baggage from mainstream products.

The key is to identify what is essential and what is only nice-to-have. One way to look for such signs is to watch and listen closely to how customers actually use the product. Often there is a huge disconnect between the product design and actual use.

#### OVER-SERVED CUSTOMERS

Classic signs of over-served customers are people complaining about exceedingly complex products or customers refusing to pay more for new features.

In the end it's all about time, hassle, and dollars. Many customers are frustrated with products with too many features that they don't use. Not only are there too many features, but the features themselves make the product hard to use.

Low-end disruptions require radically different business models. New operating and/or financial approaches must be developed. In many cases, a lower-cost structure will give a competitive edge — as will a structure that accelerates inventory turns.

Ultimately, the key aspect of creating a low-end disruption business model is to change the rules of the game. Don't use the same suppliers. Use different marketing/ sales channels. Outsource, Automate, do whatever it takes to sneak in and steal away customers.

#### NEW MARKET DISRUPTION

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Non-consumers = New Market opportunity! Non-consumers are people who are unable to acquire a given product (or service) because they lack expertise, money, or access to conveniently accomplish the job themselves. Instead they usually hire someone else to do the job for them, or they slap together less than ideal solutions that gets the job done as best as possible.

Signals of new market potentialities are products (services) that help people better accomplish jobs they're already trying to get done. Three ways to tap into the power of *new market disruptions* are: Scanning the horizon, Leading the charge, or Being a fast follower.

#### SCAN THE HORIZON

The first step in creating a new market disruption is to identify non-consumption.

- What jobs-to-be-done are not being done at all because of limited resources?
- What jobs are consumers paying professionals to do — often at great cost or inconvenience?
- What solutions are being slapped together that barely gets the job done?

Think in terms of the hassle, time, and money customers expend on getting a job done. Excessive effort in getting a job done — at work, home, or even at play, is a huge red flag signifying potential opportunity.

## LEAD THE CHARGE

One of the best ways to capitalize on new market opportunities is from the inside — from a change agent within an innovative company.

To be disruptive, you really need to *change the rules of the game*. By their very nature, non-consumers are overlooked or ignored by entrenched players. Commonly non-consumers are not profitable because of the player's cost-structure. That's how Southwest Airlines shook up the airline industry — they rebuffed the hub-and-spoke system. Using a Point-to-Point system and secondary airports gave Southwest a huge cost advantage over traditional airlines.

According to Guy Kawasaki, author of [Rules for Revolutionaries](#), you must "Think different in order to change the rules." And, "By definition, if you don't change the rules, you aren't a revolutionary."

No matter what you do, Change is a killer on the loose. You can either tame the killer and profit or become yet another victim lying on the side of the road.

## BE A FAST FOLLOWER

Companies don't always need to first to capitalize on opportunity. Sometimes they can be a fast-follower — taking ideas and running with them in a different way. Sometimes ideas come from half-way around the world. Other times, they come from across the street. The key is to 1) Act fast, before others can get in on the action, and 2) Do things in a slightly different way, play to core strengths.

Keep one eye on what customers say they want and the other on emerging competitors.

Emerging competitors and new ways of disrupting the market is where the real action will be. It is these emerging competitors who are first to see the real job-to-be done. Customers often fail to fully articulate what they want because they think inside the box. Sure, customers want products that are faster, better, and cheaper. However, they lack the vision to see how new products might radically change the way they get the job done. Some years ago I watched a show on Future Weapons where a new type of gun by [Metal Storm](#) (combining old and new technologies) fires at a rate of one million (that's right 1,000,000) rounds per minute. One of the jobs-to-be done that Metal Storm solves is the age old problem of guns jamming. With electronic ignition, no jamming can occur.

Avoiding change is not an option. For a long time *record companies* scoffed at iTunes, saying that online distribution destroys an albums artistic integrity (whatever that is). The fact is, most people want cheap music — and that means individual songs, not albums. Guess what ... most music is now sold one song at a time or even more disruptive — being streamed.

## BIG BANG DISRUPTION

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[Big-Bang Disruption](#) is a model outlined in the March 2013 issue of the Harvard Business Review.

The authors contend that the traditional strategic model of disruptive innovation has a blind spot. Disruption is assumed to start with lower-priced, inferior alternatives, which serves the least profitable segments; then after sufficient time, it moves upmarket. This process is somewhat slow, giving incumbents' time to create their own next-generation products.

Now there's a new kind of innovation that changes the rules "But now entire product lines—whole markets—are being created or destroyed overnight. Disrupters can come out of nowhere and instantly be everywhere...We call these game changers "big-bang disrupters." They don't create dilemmas for innovators; they trigger disasters."

The co-authors state that there are three characteristics of big-bang disruption:

1. Unencumbered development: You can't see it.
2. Undisciplined strategy: You can't beat it.
3. Unconstrained growth: You can't stop it.

In turn, incumbents need to:

- See it coming. (In a non-traditional way of course).
- Slow innovation long enough to better it.
- Get closer to the exits. Prepare for a fast escape from an affected business.
- Try for a new kind of diversification.

Another article to read is a follow-up by Inc. Magazine, [What a 'Big Bang' Disruptor Could Do to You](#)

Big Bang Disruption is a *must read* article for visioneurs who will otherwise miss many opportunities to attack markets, and investors who would otherwise be blindsided.

### Checkmate!

Checkmate is the position you want to put your competitors in. Avoid it yourself; otherwise you'll be the one out on the street with no job, no business, and no money. Analyze the competitive landscape, look at whole industries, and dig deep into what motivates competitors.

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## COMPETITOR ANALYSIS

Launching out the starting gate, most would-be innovators clearly see target customers. Yet most fail to see the *real* competitive landscape. Suddenly competitors come creeping out of the walls. More often than not, it's not direct competitors. New technologies empower distant, unseen players who sweep in and deliver compelling products to your customers and would-be customers.

Playing in today's rough and tumble business world means continually assessing competitive landscapes. First, you need rock solid understanding of the customer's job-to-be-done. This will absolutely open your eyes to the real competition. Second, you need to dig deep into the competitors' psyche — what makes other players tick.

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## ANALYZE INDUSTRIES AS A WHOLE

Success doesn't happen in a vacuum. What competitors do and don't do has a powerful effect on your success. Rarely does a company succeed without understanding and capitalizing on industry trends. The odds are clearly stacked against those aiming to create (or invest in) the next big thing in Steel, Rubber, anything Analog, or any already commoditized product (service). While Starbucks did it with Coffee, successful strategic moves with commodities are limited.

To create massive success, you need to know the industry as a whole. Who are the players? What is their motivation for being in the game? Fierce competitors with heart and soul in the game are best avoided. Better to play against those who aren't aiming to rip you to shreds for a few market share points. Sidestep the competition by competing differently. Select a different customer scope, use different suppliers, hire different professionals, and employ different capital, financial, and logistic strategies.

Doing a Porter's 5 gives you a solid understanding of the dynamics shaping the industry — Buyers, Suppliers, Rivals, New Players, and Substitutes.

Don't reinvent the wheel. Find and study existing industry reports. Analysts pour over industries in depth (that's their job) and share their knowledge with the world. Research stories in the business press pertaining to your industry. Google Finance, MSN, Reuters, and Yahoo Finance all report and link to a vast array of industry information. What's the overall *industry outlook*?

Are you about to ride a huge wave or is the wave about to knock you off the board? What technologies are competitors employing to their advantage?

Create a list of competitors, public and private - then plot them on a Radar Screen (for detailed instructions, see Value Migration, pp. 80-82). Keep one eye on nearby competitors, and watch out for those pesky not-yet competitors.

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## DIG DEEP INTO COMPETITOR PSYCHE

One of your first action steps to really understand the industry is to plot a historical timeline of the industry. Who created the industry? Why? What needs were addressed and are those same needs relevant today?

Pull up historical charts for leading industry players. What was their greatest moment? Why? When were they in the doldrums? Why? How did they get out the ditch — if they did? Assessing a company's performance gives you insight on the overall corporate culture. Organizations reaction to past change will help you assess their capability to respond to competitive threats and opportunities. Technology changes almost overnight, but people drag their feet and create institutional memory. Past successes and failures shape organizational culture for better or worse.

Look at competitors:

- Board of Directors
- Senior Leadership
- Middle Management
- Professionals and Associates

Are strategies flowing down the pipeline? Do ideas float to the top? Also look carefully for any rifts between *board members* and *top management*. Look at the relationship between the top and the bottom. Great Strategies poorly executed spell disaster.

When the organization is sailing along, how are staff members treated? And, when they stumble — how do they handle adversity? Especially important to note is how layoffs are handled.

Look at the company's annual reports over the last several years. What was management saying? Were managers full of it — looking to sweep problems under the rug, or were they up-front about tackling problems head on.

What are the company's:

- Strongest areas? i.e. R&D, Production, Sales, ...
- Weakest areas? i.e. R&D, Production, Sales, ...

One of the most important assessments is to understand competitor's mindset. When do they bluff? How do they create smokescreens to block your view of their real capabilities!

Whether you're launching, growing, or investing in a company; knowing the competition is just as important as knowing customers. Finding out who the real competitors are is an eye-opening experience.



Serious business professionals need to be like *investigative journalists*, not reporters. Reporters parrot back what they see and hear. Investigative journalists dig deep, look for what's going on behind the scenes, and they ask real questions. Visioneurs and investors need to understand driving forces and where gaps in the market are located.

Investors need to critically evaluate who's running the show at companies within an industry. Do they have what it takes to come out on top? If not, will the company switch gears or will it be run into the ground, to the point where it gets bought for pennies on the dollar or gets liquidated. Unlike Visioneurs, investors get two opportunities to make money ... on the winners and the losers.

To really understand what's driving change, you need to look at both macro and micro forces. Macro forces are what we might call the Big Picture! On the other hand, it's micro forces that sweep through industries or individual companies.

### News

One of the biggest driving forces is the news. Let's face it; the media shapes opinion, which in turn shapes our behavior. [Maria Bartiromo](#) of CNN/ CNBC fame wrote a classic book called *Use the News: How to Separate the Noise from the Investment Nuggets and Make Money in Any Economy*. In the book, Bartiromo shows us how to get our arms around the tons of information floating all around us and shows us how to use that information to be better investors.

Right up front, Bartiromo sets herself apart from many so-called investment professionals by saying that you must understand how the company works. Surprisingly few professionals adhere to this philosophy — otherwise why did so many buy into the dot-com craze or even today continue to recommend buying stocks only after huge price run-ups and seldom recommend selling. In fact sell is a four-letter word on Wall Street, that's why we hear so much about hold, underweight, and neutral — nobody wants to say sell!

Here are just a few points brought out in *Use the News*:

The Three Steps I Take in Deciding Whether It's News or Noise: p. 29 - 41

- "First I Focus
- Next I Ask Questions
- Finally, I Put the Answers in Context"

Gauging a *sector's fundamentals* is as important to a *visioneur* as it is for an investor. Most visioneurs simply don't do their homework and the market is the ultimate study guide. Millions of people lay down billions of dollars every day — they have what's called *skin in the game*, and that's what counts in business.

How to read an earnings report on page 154 is especially important for gauging a company's potential. Bartiromo covers many essentials and highlights red flags to look for when evaluating the earnings reported by a company.

All in all, Use the News is a must-read for investors (and visioneurs) who want a competitive advantage in the marketplace. The book is an absolute diamond mine for insights on what to look for in companies, industries, and economies.

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Headlines routinely shake the world and shape the opinions of leaders in business and politics, not to mention the masses whose lives are shaped by the latest tragedy.

Look at Japan's [nuclear disaster](#) caused by a tsunami. **The world is coming to an end!** Just take a few headlines from the Drudge Report: "Life Among the Ruins..." "NOTHING TO STOP MELTDOWN..." or the Huffington Post: "DEADLY FOR DECADES" "U.S.: 'Suicide Mission' To Cool Plant Must Go On." Well guess what ... we're still here! But ... AI will be the death of humanity ... not!

Today's headlines are about AI, and Robots taking over the world ... or at least taking all the jobs. And, of course, let's not forget the menace known as drones – consumer ones of course. Plus, sex between humans is doomed as we'll all be into [Robophilia](#).

The question to ask is how will this affect the world economy and markets? Throughout history, when tragic events happen, the mainstream calls for the end of the world. Economies will suffer immensely, for years if not permanently. Markets will crash and never recover. But somehow the world doesn't come to an end. Economies move forward, and markets recover and often soar to new heights.

Ultimately, it pays to think like the *smart money* who act contrary to the mainstream media. Baron Rothschild said "the time to buy is when there is blood in the streets" and I think that holds very true today although you need to be careful when attempting to catch a falling knife. Sometimes it's best to wait for the knife to stick in the ground before making major commitments.

## Markets / Crowd Psychology

Markets are more important than most people realize since they are a reflection of what's going on and more importantly — the possible future direction of the economy.

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### MARKETS ARE IMPORTANT

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#### CAPITAL

Stock Markets are essential because business growth is vital to the world around us. Without business growth, people go without jobs, and communities must make due with less and less service. Worse yet, the poor suffer most because charity dries up. As businesses become successful they create more jobs, profits, and pay taxes to governmental entities. In order to start-up or expand, *all businesses need capital to fuel growth*, purchase equipment, open new locations, and hire employees.

There are a number of ways to acquire the capital for a business venture.

Many visioners dip into their savings, take out second mortgages, or cash advances on credit cards, to turn their ideas into a business. Others seek funds from friends and family, or engage in crowd-funding — more on that later. Many more turn to banks. All of these methods have advantages and disadvantages.

But in all likelihood, *to grow beyond lifestyle size, companies must turn to angel investors and venture capitalists ... leading up to the goal of going public* where the company sells shares to the general public. If the initial public offering (IPO) is successful, the business will get the capital it needs to expand its operations, creating new jobs and stimulating the economy.

In order for the shares of the *company to entice investors, there must be a ready market for them*. Investors want to know that they can quickly liquidate, or sell their shares for cash. When shares are perceived to be less liquid, then investors will demand a lower price — if they are willing to buy them at all. The means to create liquidity is the secondary market, i.e. the stock market. For a look at what illiquidity looks like, check out [Africa](#).

Secondary markets give investors a huge advantage in being able to readily sell a stock, often immediately. The investor doesn't have to worry about being able to get out of his or her investment (or taking a huge loss because nobody wants to buy his or her shares). Overall that's extremely important for overall economic growth, which in turn supports a well-functioning society.

## Society's View

To the average person on the street, traders are seen as speculators or gamblers. Even many business professionals don't see the value created by trading. To them it's just shifting money around in a zero-sum game. To them, the markets are like a casino where few win and many lose. For politicians, traders make an excellent scapegoat. Never mind government's creation of asinine laws, complicated regulations, mismanagement, incompetence, and outright fraud — it's not us, it's the *traders* who caused the problem, or at the very least made the problem worse. And, the public screams and shouts when prices are high (it's funny how they never complain when prices are driven lower). The government needs to do something! So, government bureaucrats make promises about clamping down on those greedy traders, and that will make everything right — not realizing that free markets are the solution — not the problem!

## Traders View

Traders by and large are not in the business of charity, nor should they. They don't create wealth either, but neither do lawyers, accountants, or hospital administrators. Traders help the *process* of creating wealth. Think of it this way:

- No Traders, No Investors
- No Investors, No Venture Capitalists
- No Venture Capitalists, Fewer Visioneurs
- Fewer Visioneurs, Fewer Jobs

Traders are like cogs, they turn the wheels of *capitalism* — which in turn creates wealth. As traders buy and sell securities, they create a ready market for the security, let's say a share of stock. Companies are able to reward their employees and executives with *marketable* stock and stock options. Without a public market, employees and executives would be less enthusiastic about getting stock in their company.

When would employees be able to get their money? And at what price? Those are big questions with sketchy answers without a public market. Companies would also be hamstrung to get long-term financing. Banks are leery to loan money for risky projects (even with an expected high ROI). And many projects based on intangibles such as financial products, software, and marketing/ brand building would not be considered by banks. Companies would need equity financing. Yet without a public market, where would the money come from? In the end, the pool of money would be much smaller and more expensive.

Society at large is misguided in their view of what traders do. Academics, the *media*, and *politicians* consistently use traders as scapegoats. In the same way that the rich are responsible

for the existence of the poor, traders are responsible for the economic failings (not the success) of the free market.

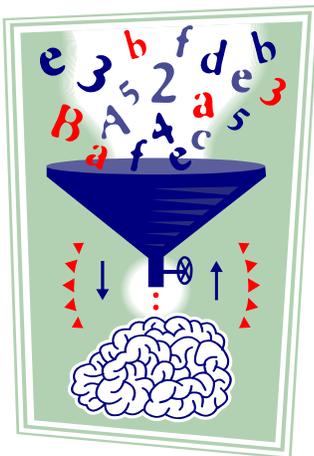
If the market goes up and all is well, the credit goes to the politicians who crafted *fair and balanced regulations*. If it goes down, then traders and evil short-sellers are to blame. Mark my words, if anything goes wrong — the market tanks, the U.S. Dollar collapses, or inflation raises its ugly head — it won't be the president's fault, or Congress, or anyone else in government — the blame will fall on traders (or that other ugly word – speculators) since they're not in it for the long haul, whatever that is.

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## MARKET KNOWLEDGE

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### INFORMATION



Seeing the Big Picture isn't always easy when you're drowning in information. Information attacks from all sides; TV, newspapers, and of course — the internet, which is like a *supernova* that spews a seemingly endless supply of data, and information. They say a picture is worth a thousand words and that's a very good thing, which is where charts come into play. Market charts convey two fundamental pieces of information: price and volume, with price being the most important by far.

Markets also serve as the finest source of information on the state of the underlying economy. Sure, markets fluctuate wildly as fear and greed causes investors and traders to abandon all reason. Yet such irrationality is short-lived. Markets as a whole are great at uncovering the real underlying story. Whatever the fundamentals, the market will climb out of the cellar or fall from the sky in order to restore balance. No other mechanism pulls together information together like the market. Buyers and sellers of stocks, bonds, commodities, and even currencies are highly

motivated to get the right answer because thousands, millions, and billions of dollars will be gained or lost.

"THEY SAY THAT men are visually stimulated, which is likely why I spend so much time staring at stock charts. More than earnings announcements, new product launches or star CEOs, a security's price action, as evidenced by the stock chart, is the data point you simply can't ignore. Every fundamental factor that's known about a stock is reflected in the chart, which is why it's the first thing I look at when evaluating an investment and the single most important criteria I weigh." — Jonathan Hoenig

Let's face it; you'd need a supercomputer to make sense of the Big Picture without charts. Assessing the Big Picture can be as simple or as complicated as you make it. At the end of the day you need to figure out what is driving prices, will those forces continue, and most importantly — are those forces fully priced into the market price. The market functions like a great big auction in the sky and prices are ultimately a reflection of trader psychology. Price will be equal to whatever price sellers are willing to part with their security and whatever price buyers are willing to acquire a security. One way to study the Big Picture is by looking at what's in vogue, what the crowd thinks, and pressure points.

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#### GAUGING THE MARKET

The market as a whole is often referred to as Mr. Market and is seen as manic-depressive. Looking at Mr. Market helps most in timing. Visioneers might look at the market's mood to gauge a sense of what's going on and use it as a starting point to launch an investigation. Every chart tells a story.

#### **Listen to what the Mr. Market is saying.**

1) How scared is Mr. Market?

Look at the [VIX](#), it will help you to understand if investors are complacent, getting scared, or are really scared. Low numbers typify complacency, while high numbers signify anxiety.

2) Is Mr. Market playing it safe?

One way of looking at risk is to compare [Stocks to Bonds](#), e.g. the S&P 500 (SPY) to Intermediate Treasuries (TLT). Stocks are riskier than bonds and if they underperform bonds, investors are playing it safe, thereby pulling money away from stocks.

3) What Mood is Mr. Market in?

[RSI](#) is like the 50-yard line in football.

When RSI is above 50, the Bulls have an edge.

When RSI is below 50, the Bears have an edge.

**Hot and Cold:** When markets get steamy hot, the smart money may already be sneaking out the back door. And, when the market's freezing; savvy traders stealthily buy into the market under the cover of darkness. Most investors/ traders are, as Samuel B. Pettengill states in the Epilogue of [The Art of Contrary Thinking](#), *Slaves to They*, where individuals subjugate their own thinking to focus on what *THEY* think.

Contrary thinking pays off big, especially at the ends — that is at the top (getting out or going short) and at the bottom (going long). The key of course is to look at what's soaring, and what's absolutely tanking, in order to create a starting point as to the underlying story behind the market. An excellent resource to do this is [FinViz's Bubble Charts](#).

Enterprising visioners may also want to look at what's hot and what's not — and ask why? Is it simply irrational exuberance or is there something more deeply fundamental going on?

As you compare and contrast various sectors, industries, and individual securities, you may be able to uncover hidden drivers that are moving the market. In doing so, you'll possess an edge which you can use to extract profits from the market. Right now the market certainly offers a wild ride; so get out there and look for what's really going on — the hidden story.

## Governments

Governments shape the playing field. Through laws, regulations, taxes, and other governmental actions they incentivize or punish behavior. Unfortunately, and all too often, unintended consequences result. In many instances, governments around the world act as agents for special and corporate interests that determine who gets rewarded and who gets punished?

Just like consumers, governments love to spend money. Since governments don't have credit cards, they issue bonds that pay interest. Investors constantly evaluate and compare the interest rates of various nations around the world — it's what makes the bond and currency markets tick. Nations with high real interest rates attract money while those with lower real rates lose money.

Treasuries around the world also print money, some more than others. Print too much money and problems start to sprout up, slowly at first, then the weeds take over the garden. Too much money chasing too few goods is the essence of inflation. However, at least in most modern economies, money is virtual — therefore they let Central Banks pump money into the economy.

Central Banks such as the U.S. Federal Reserve (the FED) set short term interest rates which may stimulate or depress the demand for money. When money is cheap, there's a great demand for money. When short-term interest rates are high, the demand for money slumps.

When short-term interest rates are kept excessively low, then investors, in their search for higher returns, must take on more and more risk — such as stocks instead of relying on the relative safety of bonds. One recent consequence of low rates in the United States was that it artificially

lowered the cost of mortgages, which in turn fueled a rocket called the *housing boom*, which subsequently came crashing back to earth.

When interest rates spike, bonds (especially short-term) become more attractive compared to most stocks. Stocks suffer greatly when interest rates sky rocket. An extreme case of this is Zimbabwe. A more benign example is the United States. From year-end 1964 to year-end 1981, the Dow Jones Industrial Average (DJIA) went up 0.88 points, 1/10 of 1% during a period that was plagued by stagflation and extremely high interest rates (in the late 1970's).



## Individuals

Individuals (consumers / employees) are the ultimate driving force. It's been said that in the United States, 70% of all spending is driven by the consumer. Consumers by definition consume, that's why products are created — to be consumed. Businesses may invest/spend, governments may invest/spend, but in the end, consumers (aka citizens) are the end users. Consumers routinely vote with their feet. If a product (or service) doesn't meet his or her needs, then the consumer simply walks away. E-commerce vendors are even more susceptible to consumer discontent — consumers are literally one-click away from another vendor. And, with *social networking*, even physical retailers routinely feel the disapproval of disgruntled consumers. As an economic driver, consumers sit in the driver's seat.

Taking advantage of consumers is a risky proposition in today's hyper-connected world. It takes just one customer with an attitude to jump online and create a story or video that rips a company to shreds. Going *viral* is a term that strikes fear into executives of companies around the world. Customer complaints must be dealt with head-on because damage-control is way more expensive. Reputations take years to develop and seconds to destroy.

Individuals also comprise the workforce — both civilian and government. In becoming employees — either for someone else, or on their own, they decide individually where to invest their life energy. And once on the job, employees invest different levels of energy to the job at hand. Some do the bare minimum to get the job done on time, whereas others work tirelessly to invent ingenious ways to do the job; faster, better, and cheaper. At a major corporation I worked for years ago, the regional manager pronounced it was all about *discretionary effort*.

Businesses are at the mercy of consumers (or at least they should be barring outside force). Corporations often live in a world of their own — believing they are king, not the consumer. Nevertheless, businesses are powerful economic drivers. Economics is the study of supply and demand. In a never-ending dance; consumers demand products, while companies do their best to understand what's demanded and then go to work to supply products that match consumer wants.

One way of looking at the situation is the *jobs-to-be-done* theory outlined by Clayton Christensen in his book, *The Innovator's Solution*. The theory is quite simple; don't *sell* products, instead help people accomplish their jobs-to-be-done. Christensen in [What Customers Want from Your Products](#) says that "With few exceptions, every job people need or want to do has a social, a functional, and an emotional dimension." And, with that knowledge, companies can identify the job-to-be-done and in turn, develop products that customers will buy.

Corporations are actually state-chartered entities, although they ironically (and unfortunately) control much of what gets passed as legislation today. Instead of creating world-class products and openly competing in the market, many companies instead turn to government to stifle competitors and limit consumer choice. Quotas, tariffs, and other protectionist policies end up driving up consumer prices — yet they remain ever popular by corporations' intent on maximizing profit by any means possible. Profit is what makes markets work so well, and so honestly. Regrettably corporations that use the power of government to skew markets give profit a bad name.

Businesses act as a driving force by actively contributing to political campaigns and engaging in lobbying efforts to *tilt* the game in their favor. Corporations do not like competition, never have, never will. Although they'll go to great lengths to avoid being labeled a monopoly, corporations do everything in their power to dominate markets — which is ok if it means beating competitors with better, more innovative products.

However, more and more companies end up investing their money in lobbying for political action, where the returns on investment are astronomical. In exchange for thousands of dollars, corporations walk away with millions and sometimes even billions in benefits. Regulation or red-tape is often seen as a method of controlling corporations. However, large corporations readily turn a negative into a positive. Two ways large corporations benefit from regulation are 1) with size comes the ability to easily absorb the impact of more complex paperwork — not so with smaller competitors who may be unfamiliar in dealing with arcane procedures and compliance, and 2) regulatory agencies are often *captive*, that is they act directly on behalf of large industry players who in turn staff the agencies. In some cases, even the agency's funding comes from the industry itself.

## Imagination / Game Changers



“Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world ...” — Albert Einstein

Imagination is what expands knowledge and drives the world. It’s the creators that make a difference, not ordinary consumers. Thinkers challenge the way we think and scientists discover underlying principles that engineers (and hackers) turn into real world products. We owe a deep gratitude to all those with imagination.

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### THINKERS

“Many live in the ivory tower called reality; they never venture on the open sea of thought.”  
— Francois Gautier

Thinkers literally help us challenge the way we think. By thinking out loud, we are privy to an ocean of possibilities. For some thinking *outside the box* comes naturally. Others struggle to think beyond the norm. Unfortunately, most in the western world are taught to conform from an early age; first at home and then in school. Religion also plays a role in turning otherwise inquisitive youngsters into more docile creatures of habit and conformity. Rebellious thought, which in reality is any thought not sanctioned by adults, is met with hostility. Yet some kids are able to thwart such conditioning, or are lucky enough to be with parents who encourage independent thought.

Regardless of our upbringing, adults are able to think independently — although environment makes all the difference. Corporations are notorious for stifling creativity. Culture also plays a role in encouraging or discouraging independent thought and is often backed up by powerful governments.

Despite the best efforts of the general public, thinkers do emerge from the *fog of mediocrity*. Often seen as misfits or rebels, society offers a great deal of gratitude to those that challenge the status quo. It is the visioneers and far-sighted investor who emerge from this primordial soup.

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## SCIENTISTS

Scientists study scientific laws to more fully understand the world around us. Basic science creates the building blocks upon which others will build. Essentially they build the foundation. Every invention depends on a huge body of prior knowledge. Biologists, Chemists, and Physicists went through the arduous process of discovering nature's principles long before engineers applied those principles to create the wonderful products most of us take for granted.

Think about electricity, something nearly all of us use without much thought.

Since the dawn of mankind, people looked at the sky and saw lightning — although they did not understand it as a natural phenomenon — instead they relegated such power to the gods. For example, in the Shinto religion, *Raijin* is a god of lightning, thunder and storms. In Egyptian lore, the lord of the desert and god of storms, confusion, and destruction is *set* (or *seth*). Imagine living in ancient times. As you look up to see a flash streak across the sky, no sooner than you start to relax, you hear a loud ... boom! Without scientific knowledge, humans were left to their imaginations and weaved it into broader mythology to explain how the world works. Since lightning and thunder go hand in hand, [many gods](#) were created to understand why the sky seemed to be ripped apart by flashes of light and loud sonic booms.

In ancient Greece, the discovery of static electricity was credited to the philosopher Thales of Miletos. Many centuries later, connections were made, first to lightning, and then electrical currents were harnessed. In the year 1600, William Gilbert (an English physician) coined the term electric, from the Greek *electron* as he made the connection between the attraction of oppositely charged objects and magnetism. Benjamin Franklin is perhaps the name most associated with electricity since he flew his famous kite into a storm in 1752, which was then struck by lightning or so the story goes.

Next came the battery in the late 18th and early 19th centuries. Italian scientists Luigi Galvani and Alessandro Volta both made key discoveries leading to a working battery. Michael Faraday, the English scientist discovered that an electrical current could be induced in a copper wire by a moving magnetic field in 1831 — which led to two crucial inventions: the dynamo and the electric motor. Finally, electricity started flowing ... just waiting to be tapped.

In the late 19<sup>th</sup> century, Thomas Edison perfected the light bulb — although direct current faced significant barriers to widespread adoption. It was Nicola Tesla who developed a new kind of generator that produced alternating current (AC), which is what is commonplace today.

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## ENGINEERS

Engineers turn dreams into reality. Whereas scientists' realm is discovery-based, engineers engage in applied science. After scientists discovered the principles of electricity, engineers industriously applied those principles to the problems facing us. Mentioned before, Edison helped light up the places we live, work, and play. It opened a whole new world, where night was turned into day. In the coming years, electrical principles enabled the creation of vacuum tubes and then transistors — which are deeply embedded into the fabric of modern society. It's hard to imagine a world without computer chips.

Consider the [IEEE](#)'s (Institute of Electrical and Electronics Engineers) mission statement: “IEEE's core purpose is to foster technological innovation and excellence for the benefit of humanity.” And, that's exactly what engineers do — they surf the waves of discovery as they create the products of tomorrow.

Look at what's been called the [Greatest Engineering Achievements of the 20<sup>th</sup> Century](#). Imagine life without these modern marvels — a grim world indeed.

- Electrification
- Automobile
- Airplane
- Water Supply and Distribution
- Electronics
- Radio and Television
- Agricultural Mechanization
- Computers
- Telephone
- Air Conditioning and Refrigeration
- Highways
- Spacecraft
- Internet
- Imaging
- Household Appliances
- Health Technologies
- Petroleum and Petrochemical Technologies
- Laser and Fiber Optics
- Nuclear Technologies
- High-performance Materials

“Any sufficiently advanced technology is indistinguishable from magic” — Arthur C. Clarke

Engineers will continue *pulling rabbits out of the hat* as they create the products that make up the world of tomorrow. The *National Academy of Engineering* lists 14 [grand challenges](#) for Engineering in the 21st Century.

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## HACKERS

“We are stuck with technology when what we really want is just stuff that works.” — Douglas Adams, *The Salmon of Doubt* (2002)

That's why hackers exist. Professional engineers tied to big corporations are hamstrung in their ability to create the impossible. Most corporate research is agenda-driven and lacks the flexibility of thinking outrageously. As mentioned before, we may be facing more and more big bang disruptions — the key is who will create those disruptions and who will end up splattered all over the windshield.

The word hacker, like greed, is a twisted word. Originally, the term *hacker* referred to those in the computer world — typically outside of the traditional corporate structure. Many were part of the free (or open source) software movement. Hacker philosophy emphasizes sharing, openness, as well as disdain for bureaucracy. Hacker goals include accelerating the innovation process and increasing the overall knowledge-base. Their values and belief systems typically oppose the corporate mindset, and in general — hackers are anti-corporate. Hackers come in many different flavors and may be motivated by profit, protest, or challenge.

On the other hand, the term crackers was coined to describe those who get their kicks by destroying things as they attack computer systems with trojans, viruses, and other nasty software bugs. Hackers create, while *crackers* destroy. Yet the mainstream media is oblivious to the distinction, and nearly always uses the term hacker to describe those with evil intent.

Wikipedia offers up a definition for a [Hacker \(hobbyist\)](#) that fits well with what I feel is the hacker ethos. "... a hacker is a person who enjoys exploring the limits of what is possible, in a spirit of playful cleverness... It includes building, rebuilding, modifying, and creating software ..., electronic hardware ..., or anything else, either to make it better or faster or to give it added features or to *make it do something it was never intended to do.*" (emphasis added).

It's these hackers that created *hackerspaces*. As a community, hackers are getting together to take things apart and put them back together in new, cool ways. The hackerspace movement, prevalent in Europe since the mid-1990's spread outward from there to the United States and elsewhere. It's hard to explain exactly what a hackerspace is. In shared spaces such as [Hackerspaces, Makerspaces, TechShops, or FabLabs](#); hackers pool their knowledge, resources, and share ideas on how to make really cool stuff, and make the world come alive.



### What's Happening?

“Always in motion is the future” Master Yoda (Star Wars)

Yoda is most wise! He knows the future is impossible to pin down. But, that only means that *anticipation* (not prediction) is a dynamic process. With the future *always in motion*, we must constantly revise our assumptions — although some assumptions act as anchors.

It's virtually guaranteed that the future internet (unless we get hurled into an alternate universe) will be *wired and wireless*. Just like today, we'll see wired networks that act as a high-speed backbone and wireless devices will tap into the backbone to complete delivery of mega-packets.

LTE wireless networks are becoming more widespread, yet still suffer significant bottlenecks in terms of speed and availability. As time moves forward, wireless will most likely fulfill its' promise of higher speeds and continuous availability. However, such connectivity is relative. In today's world we still seek out Wi-Fi — not only because it saves on our precious *data* allotment, but because it's almost always faster. David H. Deans wrote a piece about how [most mobile data traffic will migrate to Wi-Fi networks](#) because according to Juniper Research, “Worldwide mobile data traffic, generated by all smartphones, feature phones and media tablets, will approach almost 197,000 PB (Petabytes) by 2019 -- that's the equivalent to over 10 billion Blu-ray movies.”

Barring any futuristic leaps in technology, the gap between wired and wireless will remain. What this entails is simply this; wireless networks will be significantly faster than today, yet future advancements will likely still favor wired networks (and limited range access to those networks). Already we're seeing the emergence of 3D web browsers, and technologies like WebRTC. These are bandwidth intensive applications. Combined with network congestion, tomorrow's wireless networks are likely to be noticeably faster, yet frustratingly slow for the more advanced applications of tomorrow.

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## WIRED

Faster, Faster, ... Faster!

“I feel the need. The need for speed.” — Maverick (Top Gun)

Our obsession with speed is why the future internet will be wired, or at least the backbone will be wired. Wireless systems will certainly become faster, yet wireless simply cannot deliver the lightning fast speeds of wired systems. By the 2020's wireless systems may be capable of pumping out gigabits per second. But, wired systems will be measured in terabits. In October of 2014, ExtremeTech reported a world-record speed of [255 terabits per second](#). Of course, all that's theoretical, in the lab! What about real life? In December 2014, Minneapolis, MN (U.S.) launched [10 GBPS internet service](#). Gigabit service is spreading like wildfire across the world.

One engineer, [Milton Feng](#), puts it this way: “Information is not useful if you cannot transmit it.”

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## NEXT GENERATION INTERNET

By 2020 the Net will be Faster, Bigger, and Smarter. And by 2025, it may not even be recognizable.

Whoa ... wait a minute, why should we think so far in the future? The best answer I can give you is that the future has a way of sneaking up on us. OK, not good enough — here's another reason. [Andy Kessler](#) (former Hedge Fund Manager) says that you need to look at the “... long-term scenario and apply it to everything you do – any project you get involved in, any startup, any job interview, and any investment.” And, that “Even for 20-year investment opportunities, the most of money is made in the first 5.”

What will networks (that is what the internet is after all, a collection of networks) look like in the next 10 years or so? Well, for starters, it's almost guaranteed that the networks of the future will be Faster, Bigger, and Smarter. The networks of tomorrow are destined to be:

- Pervasive
- More Global
- About things
- Highly Mobile
- Delay-Tolerant

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## PERVASIVE:

According to the [world population clock](#) and [internet live stats](#), there are approximately 7.3 billion people in the world, and 3.2 billion of them are connected to the internet, which means 44% of the world's population is connected.

By 2020, the [world population](#) is projected to be 7.7 billion, and an estimated 5 billion people will be connected to the internet, meaning that 70% of the population will be connected. Under the current internet structure, this will undoubtedly mean huge traffic jams. Although “The Internet may be hurtling toward collapse under the strain of too much traffic ... Van Jacobson with PARC research is engaged in projects aimed to fix the problem with [Content centric networking](#) and [Named data networking](#). Content Centric Networking focuses on the issue of data retrieval. After all, what we really care about is the data, not where it’s stored.

Multi-terabit backbones would enable networks around the world to keep up, and maybe even get ahead, with the seemingly exponential growth in data, especially video — the fastest growing area of the Internet. Peer-to-Peer (P2P) technology may also help tame the wild beast that sucks the life out of the net. While BitTorrent is most widely known, other alternatives are being explored. For example, [IPFS](#) is called a new peer-to-peer hypermedia protocol.

### **More Global:**

By 2020, the internet will be more geographically dispersed, with Asia playing a major role. More than half the world’s population lives in and around Asia. China and India alone comprise about 1/3 of the world’s people. China’s over ½ billion internet users easily dwarf America’s which totals nearly 50% fewer. And, with only half its population online, China has plenty of room to grow. While the Chinese government still aims to control access to the internet, it’s a slippery road. Only the elite used to be able to access videos of the outside world. Now, more and more average citizens own cheap smartphones and tablets, and are increasingly using the net to tap into what’s going on in the outside world — leading to a technologically savvy populace that actively circumvents government firewalls. As they become more aware of world events, they may ultimately discover what’s really going on in their own country as well. And, it’s not only China. People around the world will also gain new perspectives as walls are torn down that hold back the free flow of information.

Many other countries around the world will gain from the free flow of information. Business thrives when constantly challenged. Scientific knowledge, no matter how well guarded, will find a way onto the open net and scientists around the world will capitalize on that knowledge by unlocking the mysteries of the world that surround us — and with some good fortune, such knowledge will help solve at least some of the world’s problems.

### **About things:**

Computers will play a diminished role by 2020. The Internet of Things (IoT) will do most of the communicating as more and more machines talk with each other instead of humans. Billions of sensors will be scattered all over the place. [IPv6](#) is the latest revision of the Internet Protocol (IP). IPv4, with its 4.3 billion addresses, is reaching its limits, but IPv6 is coming to the rescue. With a 128-bit address, IPv6 gives us a huge, almost incomprehensible number — more than  $7.9 \times 10^{28}$  times as many as IPv4! With IPv6, it will be a long, long time before all the addresses are used up — maybe when it’s the *intergalactic* net.

Applications like [Ninja Blocks](#) that monitor (and report to you) your home security system, doorbell, thermostat, or whatever will dramatically increase internet traffic. I'm sure there are apps for our cars too. And, with all of this traffic comes a boatload of security issues. Nick Farrell wrote in TechEYE that [IoT is a security nightmare](#). There will be major [Security, Privacy and Legal Implications of the Internet of Things \("IoT"\)](#). The fact is that the "IoT is here, and it will revolutionize how both individuals and corporations interact with the world."

Besides security; privacy issues will also surface since every new technology brings a [dark side](#) with it and as in most cases, technology must be controlled by design since governmental legislation typically develops slowly and fails to anticipate future technology developments.

### **Delay-Tolerant:**

Always-on may give way to delay-tolerant networking. NASA and the European Space Agency are working on an [Interplanetary Internet](#) which uses [Disruption Tolerant Networking](#) (DTN). Involved in these projects is the legendary [Vint Cerf](#). There's even a [special interest group](#) dedicated to InterPlanetary Networking. One of the critical features of HTML5 is off-line support. Being able to handle delays in communication and going off-line for extended periods of time will be necessary for quite some time. After more than a century of being electrified, we still need backup sources of power and most of us stumble around in the dark when the power grid goes down.

In less than five short years it will be the year 2020. By then one thing is for sure — the world will be much different— hopefully for the better. Here's some food for thought: [8 ways the Internet of things will change the way we live and work](#).

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## WIRELESS

Over the next 10 years we'll continue to connect faster and faster to the point of *hyper-speed*. [Gigabit Networks](#) are on the horizon and 5G may offer similar speeds for mobile users.

Whether wireless speeds reach 1, 2, or even 10 GBPS, profound changes are in the air. For an inkling of what may materialize, check out [7 mega-trends in mobile technology for 2015](#).

So what exactly will Gigabit+ speeds do to the economy? More of the same or a radically different economy?

Here are some thoughts off the top of my head:

- Telecommunications might just be disrupted (again) with [WebRTC](#).
- After ultra, ultra high definition TV, holographic projection may very well see the light of day, radically transforming our viewing experience (think B&W to Color).
- Cloud computing may become universal. Then again, a counter-trend may rise up and offer up supercomputer *servers* in our pockets.

- Education may be super-charged through real-time, interactive multimedia (on-demand instruction).
- The health-care industry may become more localized through tele-presence and mobile apps.

As I've said many times, the key is to *anticipate* change and then monitor things that might give you a clue. When looking at *disruptive* change, speed makes all the difference.

- If change is rapid, then established businesses are likely to be caught off guard, and risk losing market-share to other, more nimble players.
- If change is slow, then established companies can readily adapt to the new environment — either growing organically or by buying other companies (most notably start-ups).

Next Generation networks are fast approaching hyper-speed. The question to ask is how this will change various markets. How will they change Consumer Electronics, Education, Healthcare, and Retail? Speed kills and creates opportunity. It's the speed of change that really matters, as it ultimately decides winners and losers.

Mobile connectivity will be huge. Wireless will dominate the landscape as more and more people are on-the-go. In 2011, a big shift occurred — there were more smartphones and tablets sold than PCs worldwide and that trend will accelerate until the vast majority of computing is mobile. Touch, and later on, gesture based navigation will open new avenues for consumers to explore. The smart-phone of 2020 will look like a dinosaur compared to today's versions. With supercomputers in our pockets, all sorts of possibilities open up. However, a big variable will be data charges. Unless the cost per gigabyte falls dramatically, connectivity (at least via carrier networks) will languish.

Mobile payments may also replace cash and credit cards too. On the other hand, maybe it won't. History teaches us that culture changes slowly and at the core of cultures in developed economies is money. Money, while not necessarily sacred, is held in the highest regard. It's something that separates us. Most usually don't talk openly about money. How much we earn, bank balances, and our spending habits are for the most part secretive. Losing all, or even a significant portion of our money, strikes fear in our hearts. Therefore, it may very well be that NFC technology will be adopted slowly due to a combination of privacy fears, a desire for anonymity, and resistance from those companies with a financial stake in the existing payment structure.

Imagine the possibilities of merging high speed mobile networks with the power of social networking. We all know that of the millions of product reviews, many are suspect or biased. Filter this through social networks and suddenly we see much more clearly — that is if our friends are real. In the real world, we are only friends with those we know, and as such we trust their judgment. After all, who do you trust more; a thousand on-line Facebook friends (which you don't really know), or the opinion of a few close friends who really do know you? Naturally privacy concerns will need to be addressed, but when the privacy problem become mute, an entirely different world will emerge.

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## CENTRALIZED VS. DECENTRALIZED

A battle rages on; will the future be highly centralized, decentralized, or will it be a hybrid? While cloud computing appears to be a compelling trend, it's not written in stone as to whether or not this trend will fully play out. Also, who will win and lose as time marches on is up in the air.

Today's internet relies heavily on the classic client-server model that's been around since the mainframe. Major players run centralized servers which *serve* data to a multitude of clients such as personal computers and mobile devices. Think of the traditional airline hub and spoke model. Hubs act as central point to which all traffic is routed to and from. That's the client-server model. Now look at the point-to-point model used by the likes of Southwest Airlines; that's a decentralized model that skips the hub.

Comcast Corp. started a [broadband arms race](#) with its' 2 GBPS service to an estimated 18 million users in the U.S. by the end of 2015. Such superfast connections may literally change the web, resulting in a more decentralized internet. Machines that act only as clients today may also be servers.

Centralization's weak spot, small disruption = wide reaching effects.

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## HTML5

For years we've heard that HTML5 will change the web as we know it. However, let's take a realistic look at HTML5 and whether or not it will become a Game Changer.

Here's what some industry professionals say about the state of HTML5 in today's world:

- "...among mobile app providers in emerging markets, [HTML5 emerged as the most popular platform after Android, and the fastest growing.](#)"
- [W3C: The Web will win](#)

HTML5 seems to be in the REALITY phase of the technology hype cycle and it's now time for HTML5 to enter the slow climb to the mainstream. Let's look at the pros & cons of HTML5 in order to assess whether or not HTML5 will be a Game Changer.

### Pros

- HTML5 applications won't require a 3rd party plug-in.
- Major industry players are backing HTML5.
- HTML5 applications, at least in theory, will run across all (we'll at least the major) browsers.

## Cons

- For developers – coding HTML5 is hard work, especially when compared to native apps.
- Native applications run much faster and easily access hardware.
- HTML5 is browser dependent and may be hindered by browser specific code. Flash isn't dependent on the browser and will look the same on all browsers.

So, what does the ultimate referee say? Let's look at [ADBE vs. the Market](#),

Also take into consideration that while Flash is Adobe's cash cow; it's also now making tools for HTML5. More importantly, HTML5 is backed by many major industry players like Apple, Google, and Microsoft. Yet, the real outcome seems to hinge on the future of *mobile* which brings into the question of HTML5 vs. Native Apps, or maybe a hybrid approach — I'll leave this for you to contemplate.

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## WEBRTC

Talking to someone over the internet isn't really that easy. Both parties need to agree to use the same software. PC users may prefer to use Skype, while those in the Mac camp might want to use FaceTime. And what about mobile users — Android, iOS, and Windows aren't exactly known to play well together. Web-based, real-time communications is already here and now — with plug-ins! Again, both parties need to agree on what application to use. Although, in January 2015, AT&T announced it was the [first US carrier to support WebRTC](#). In the end, deciding on what platform to use may take more time than the actual conversation. Is it really worth all the time and effort? Why not just skip all the garbage and pick up the phone.

That's the problem WebRTC solves. As an open standard for video and voice communication, WebRTC uses the browser as a common platform — and if you're on the internet, chances are you're using a browser. The most popular browsers already support WebRTC. When developers tap into WebRTC, making it simple and easy-to-use, the floodgates will open up.

There will be winners and losers — that's guaranteed. Investors and visioneers need to scan this horizon, and anticipate what disruptions will cascade through various industries.

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Game Changers sometimes sneak up on us and are not always easy to spot. The key is to look at both the Pros and Cons, then analyze how (as in the case of HTML5 and WebRTC) the technology will affect different aspects of the ecosystem. For example, software platforms live and die by 1) Developers and 2) Users. Both are critical. Developers must buy into the technology and invest their time and effort to build applications that users will either accept or reject. It's the circle of life. HTML5 centralizes applications on a common platform — the web. If HTML5 apps ever reach near-native performance, native applications will suffer. WebRTC, although standardized on the web, may disrupt traditional (centralized) communications providers. With WebRTC [who needs traditional voice communications](#) — just tap into the web!

Cloud Computing is the future, or is it?

A recent Google search turned up these headlines:

- “The Cloud’s Bright Future “ | Fast Company
- “The Future Of Cloud Computing Is Cloudy” | Movie TV Tech Geeks
- “Cloud computing is the future but not if security problems persist” | Tech Times
- “The Hidden Waste and Expense of Cloud Computing” | Wall Street Journal

A pretty mixed message!

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### FUTURE IS CLOUDY

As a concept, the cloud is awesome. Let somebody else take care of the details, pay only for what you need at the moment, and of course — being able to access your data from virtually anywhere. However, reality is riddled with challenges. First and foremost is always-on connectivity. Even in developed countries with LTE, and soon to be LTE-advanced; connectivity isn’t always guaranteed. Although outages may not happen very often — at least on a large scale, mobile service is typically much slower, and suffers from dead spots — akin to the Twilight Zone where calls go unheard, texts go unnoticed, and the internet just flat out doesn’t work. Plus, centralization requires a huge amount of trust in regards to availability and security.

Cloud computing comes across as a unified label, when in fact the **CLOUD** is actually fragmented. Clouds may be *public* (Amazon, Google, Microsoft, etc.) or *private* (corporations with their own **DATA CENTERS**, or even home servers). Although consumers readily grasp at the shiny lure of **FREE** services from the likes of Facebook and Google, the fact is that the price paid is *information* (about users). Facebook’s and Google’s real customers are advertisers. Also, *cloud computing* may end up disempowering users. Initially, the spirit of *personal computing* was to empower the individual. Clouds, and more specifically public clouds, aim to strip power from end users by centralizing computing power (applications), inspect all unencrypted traffic on behalf of governments (and corporations), and store data in a convenient, secure place — unless they get hacked!

### Keeping Information ... too Private?

In April 2013, the media reported that Apple's iMessage was too much for the Feds. Last fall, Alison Stewart and Julia Angwin on PBS News Hour discussed [encryption on Smartphones](#) and whether or not it was too much for the FBI. And, most recently, the Washington Post reports that [Tech giants don't want Obama to give police access to encrypted phone data](#).

Apparently, iMessage (and I’m sure others work similarly) uses encryption in such a way that when both sender and receiver are Apple device users, the message is very difficult to crack, even for the Feds. Conventional tactics such as setting up telecom/ carrier equipment intercepts simply won't work. As with many new technologies, law enforcement ends up playing catch-up

with the bad guys. A century ago, the police struggled to chase down bank robbers in cars, now the battle's moved on to cyberspace. Naturally governments will push for more *backdoors* with this recent development. However that only opens the door for other bad guys such as cyber-criminals and foreign governments, intent on raising havoc. Real crimes occur in the real world. Physical surveillance still works against criminals, it's just slower, more expensive, and requires more effort.

However, backdoors only stop the lesser skilled and the race will continue on. Governments and corporations will continue to suck up all the communications — privacy be damned. And individuals, most doing nothing more than wanting to keep their communications private, will use technologies such as peer-to-peer (end to end) encryption to do just that. The future of encryption will be full of old technologies (such as PGP) being deployed in simpler forms and of course new technologies will be created that frustrate those looking to create a digital [Panopticon](#).

Globally, a central issue arises, mostly for governments and corporations. Many of the largest public cloud providers are based in the United States — subject to American law. American authorities may breach the sanctity of a so-called secure cloud and tap into or suck out all the data on the basis of (U.S.) National Security, or through other loopholes that may favor U.S. based corporations. Needless to say, businesses and consumers outside the U.S. will be influenced by how their governments portray the United States.

Consumers also face risks. Steve Wozniak (co-founder of Apple) said in 2012 that “I really worry about everything going into the cloud. I think it’s going to be horrendous. I think there are going to be a lot of horrible problems in the next five years.” Furthermore, Wozniak mentioned that “With the cloud, you don’t own anything.” Actually, that’s a great point. Books, Music, and Software are **LICENSED** not sold, which begs the question — what am I paying for? On the subject of cost, cloud services don’t seem to be able to be cost competitive when it comes to storing and accessing terabytes of data. And, the future will most definitely be based on **TERABYTES**, or even more. High-Definition video alone will suck the life out of high speed broadband, not to mention implementation of technologies such as voice recognition and virtual/augmented reality which will push up demand for more computational power.

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#### CLOUD VS. PERSONAL SUPERCOMPUTING

While the cloud seems to be all the rage now, the question to ask is — is it the future? And if it is, who will control that future? Extrapolating the present, we might just say that big, mega-corporate sponsored clouds such as Amazon, Google, and Microsoft will dominate the landscape. On the other hand, there are other possibilities — maybe not even cloud-based in today’s sense of the word *cloud*.

Think about this, mobile phones are becoming more & more powerful. Just a few years ago, quad-core processors were all the rage. Now it’s octa-cores, and [smartphones with 10-core processors](#) are coming in 2016. Do we really need that much power if **EVERYTHING’S GOING TO THE CLOUD**? And the industry isn’t slowing down. Imagine the phone of 2020!

The fact is, how will we use these portable SUPERCOMPUTERS? Will we connect to servers? Or will our phones be considered SERVERS in their own right? Maybe we'll even find a way for all these millions and even billions of devices to talk with each other. Every cell phone is basically just a small radio and it's been said that [The Pentagon Wants to Turn Our Phones Into a Giant Mesh Network](#).

## Super-charged Devices

Technology companies are pushing hard to create next generation devices as we enter the so-called Post-PC World. As each month passes, devices such as Smart-Phones and Tablets get more powerful which is the antithesis of cloud computing. With applications, and processing done in the cloud, lightweight devices are needed — not portable supercomputers! More and more computing power is being crammed into our phones and mobile devices — yet that's a complete waste of resources if the future resides solely in the cloud.

However, maybe the future isn't solely based in the cloud — which is utterly dependent on connectivity. In the cloud-world, the minute you lose internet access, a cloud-device is essentially bricked and may as well be used for a door stop. Look beyond the headlines. Look at what products are being sold, and bought. Apple's iPad with 128 GB of storage seems like overkill if we LIVE IN THE CLOUD. Quad-core processors are the norm today. In the days to come, many more cores will be standard. Intel is working on 48-core chips for smartphones and tablets that look to hit the market by the end of the decade. [Parallela](#) (Kickstarter funded) will help personal supercomputers see the light of day. “The 66-core version of the Parallela board delivers over 90 GFLOPS while consuming only 5 Watts ...”

Be careful not to get fixated on today's trends or possibilities. Look at all of the fallen giants and those significantly underperforming the market. With size comes unique challenges and most giants don't make the leap to the next market. Markets change. Consumer tastes change. And, technology changes — and when it does, legacy systems, and processes make it difficult for giants to embrace new technologies. Andy Kessler (a former Hedge Fund Manager) says that “It's the individual on the edge of the network that drives society.” Disruptive or Radical Innovation rarely comes from the market leader ... so why focus on the leader? Look out at the horizon. For every threat, there's an opportunity — for someone. And investors get a double opportunity — they can short the losers and go long the winners.

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## P2P, HYBRIDS, OR SOMETHING COMPLETELY DIFFERENT

Maybe the future lies with P2P, or a mixture of P2P/ Cloud; then again — maybe it'll be something completely different. Distributed P2P technologies may be implemented in new ways that tap into unused resources, while not creating dependency on a large scale. An interesting article on the subject is [The Server Needs To Die To Save The Internet](#).

BitTorrent already spans across the world, delivering large data files such as movies — many allegedly pirated, but it's also used to legitimately distribute content. In fact, for lesser-known artists, BitTorrent is a powerful platform for delivering content. BitTorrent launched an app

called [Sync](#) that “uses peer-to-peer technology to synchronize personal files across multiple computers and devices.” It should prove interesting.

What will the future hold? Will the cloud sweep over us? Will P2P rise up to reshape the world? No one really knows, but I do know this — the future is full of surprises. Despite all the talking heads, fortune tellers, and technology forecasting, the future is still that — the future. Nietzsche sums it up well: “The future influences the present just as much as the past.”

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Native applications vs. Cloud Computing is what the Cloud WAR is all about. Huge fortunes and losses ride on the outcome. In one corner are the traditional/ mobile-oriented companies such as *device* manufacturers (PCs, Phones, and Tablets), *software* companies, and *telecommunication* companies. In the other corner are *cloud-based* companies such as Google (\$GOOG), Facebook, and Twitter on the consumer side; and companies such as Amazon (\$AMZN), Netsuite (\$N), and Salesforce.com (\$CRM) on the business side.

Cloud-computing pales in comparison when stacked up against today’s desktop-centric behemoths. Google, by far the largest cloud-based company, weighs in significantly less than Apple’s market cap. However, if there’s one constant in the world of technology, it is change.

An earthquake can send a Tsunami half way around the world, and so can disruptive technology. Keep an eye on the horizon to see how companies are dealing with the shifting technology winds. Just look at the past decade. Out of the Tech bubble ashes, sprang to life the likes of Google, Facebook, and Twitter (now household names). Apple, once considered a sinking ship, soared to new heights with its line of i-gadgets and innovative software.

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## DIGITAL DISTRIBUTION

“Digital media has destroyed much of the magic and mystery of the medium.” — John Dyer

### P2P

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Digitization, like it or not, ripped apart the world of movies, music, and video games. Sights and sounds are now shot around the world in an instant. First it was retail record stores that bit the dust. Then movies came under fire from the likes of BitTorrent. Music and video are increasingly being streamed or at the very least — downloaded. Retail media is quickly dying. And now, video gaming is increasingly being **DOWNLOADED** and even streamed in the cloud. Digitization is most definitely a game changer.

Although it’s not talked about often — he who controls the content makes the rules. Amateur production of world-class movies may take some time to significantly encroach on Hollywood. However, music is easily created in home studios and video games simply require talent and a fair measure of computing power which if not available on a home server can simply be **RENTED** from a cloud provider. Naturally the big studios, record labels, and the Big 3 console makers (\$MSFT, \$NTDOY, and \$SNE) are fighting tooth and nail to hold onto the status quo.

Blaming their woes on piracy, they beg governments to enact laws such as SOPA and PIPA which while defeated for now, such measures will rise up time and time again.

Digital distribution changed the way we listen to music, watch movies, and play video games. Media consumption and game playing is now a mobile affair thanks to Apple's line of i-Products and Android's plethora of follow-on products. Traditional middlemen will soon be tossed to the side of the road to make way for new bridges that bring artist and fan together. Artists for a long time were under-compensated, often vastly so — earning a mere pittance while *studios*, *record labels*, and *console manufacturers* raked in the bulk of the profits.

The question investors and visioneurs need to ask is; How do we make money from this industry shift? There are plenty of ways to go long & short various industry players — but I certainly won't tip my hand. Instead, let me share with you some articles that may stimulate your thinking:

#### MUSIC:

- [The music industry's broken business could change in 2015](#)
- [Tech world is blowing music out of the water](#)
- [If you want to use music, you've got to pay for it](#)
- Keep up to date with the [Music Industry Blog](#)

#### MOVIES:

- On the verge of a [new film culture and infrastructure](#).
- A blast from the past, Many Killers Of The Film Industry (3 part series):  
[Part 1](#) [Part 2](#) [Part 3](#)

#### VIDEO GAMES:

- [The Digital Distribution Wars Are On Again](#)
- [Cloud Gaming – Is it the Future of Video Games?](#)
- [Virtual Reality Theme Park Is The Future Of Video Games](#)

#### STREAMING

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Streaming music and video seems like nirvana. Everything — on demand! But is it?

In the past, music and video products were much simpler — they were physical. Music came on records, tapes, or CDs. Video came on tape or DVD. But fans didn't really care about the packaging — all they want is the sound or the moving pictures. The product was digitized into downloadable files, and then streaming media. Media-based music (and even video) is on the edge of becoming obsolete. Will streaming be the future? Questions abound, especially with issues of ownership and control.

New business models are being developed, yet monetization is clearly the key variable. Music artists, especially independents, struggle to make enough money. Even record labels are finding the streaming model makes way less money. In movie-land, a similar experience is playing out. Look at the math: streaming services are cheaper, so there's less revenue generated. Ad-supported streaming just doesn't generate as much income as selling the product itself and consumers quickly adapted to getting free or low-cost media.

Digitization is clearly a Game Changer in that it is changing the creation and consumption of music/ video and the playing of video games. In my opinion, music changed the most and is least likely to provide emergent investment opportunities. Movies and Video Games are more complex, slower to change, and therefore are more likely to offer potential investment opportunities. Look out to the horizon, imagine the possibilities, and then (and only then) will you see what might just be the next big thing.

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The next-generation internet will literally change the way we live, work, and play. Profound affects will ripple across cross industry boundaries such as:

*Privacy/ Security* — It's already a problem. In 2013, Edward Snowden opened Pandora's Box to show us [PRISM](#), a massive system of NSA electronic surveillance. As the internet becomes more pervasive, privacy concerns and security will become even more paramount. Will privacy exist?

A lot is at stake as to whether or not the trend towards centralization accelerates, the implementation of cryptography, and P2P, decentralized networks becoming more mainstream. And, where do you draw the line between *security* and *privacy*? Surveillance is the art of being watched and is extremely subjective. What's acceptable? What's unacceptable? Observation may at times offer up feelings of protection, safety, and security. However, it also stirs up feelings of discrimination, fear; intrusion, mistrust, and violation which may lead to self-censoring and ultimately restraining self-expression.

*Permanence* — When just about everything is *digital* how will information be archived in unalterable format? In the age of photo-shop, we all know that images are readily falsified. With nearly all information digitally created, delivered, and stored — how will we be able to verify the authenticity of information? And to compound this problem is the fact that the amount of information is exploding all around us. We're literally drowning in information.

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## KEY TECHNOLOGIES

Speculating what the internet will look like in the next 10 years or so is like sailing into a dark and stormy sea. A massive storm front is on the horizon. The big question is what's on the other side. The journey will be full of twists and turns. Before looking at any *future* list, keep in mind, it's only food for thought. The future can and will change. And anything you read or watch will be obsolete in the coming days, weeks, and months. All in all, the world is changing too fast to skip doing your own homework. In the end, the goal is to look over the landscape, anticipate what might occur, and then contemplate who wins and who loses under such scenarios.

Here's a list of 5 technologies that may change the nature of the internet and by implication, the way we do things.

- Virtual/ Augmented Reality
- Internet of Things/ Sensors
- P2P/ Self-Organizing Networks
- Digital Currencies/ Bitcoin
- WebRTC

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## VIRTUAL/ AUGMENTED REALITY

"[Augmented reality](#) (AR) is a live, direct or indirect, view of a physical, real-world environment whose elements are augmented by computer-generated sensory input such as sound, video, graphics or GPS data." Blah, Blah ... what can it really do for us? AR is going to be huge. It will change life as we know it, just like Smart-phones and tablets changed our lives. [Google Glass](#) was just a teaser — the tip of the iceberg. Wait until such technology is embedded into normal glasses (or even futuristic contact lenses). Lots of people look at AR as a direct extension of our eyes and ears, but what about robots. AR will enable us to experience robots in a whole new way. First person, point-of-view will be really cool when robots do the exploring, taking us along for the ride! [With the emergence of the IoT, remote telepresence is taking on a new persona.](#)

Two areas that look ripe for AR innovation are 1) Gaming — always on the cutting edge, and 2) Communications. For a long time we've been staring our bleary eyes at 2D television. [Oculus Rift](#) VR raises the bar on what we expect in a virtual reality experience. As future generations of Oculus are brought to market and new products from innovative competitors appear, VR will be a viable alternative to the real world and a means to explore our wildest imaginations.

Communications will also be impacted as we no longer talk to a flat screen. We'll be able to interact on much deeper, personal, and even intimate levels.

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## INTERNET OF THINGS/ SENSORS

"Equipping all [objects in the world](#) with minuscule identifying devices could be transformative of daily life." IPv6 will be instrumental in slapping an IP address on everything in sight. But then again, we might not even need IP addresses.

PC's and then the internet radically changed the world of information — movies, music, and video. Yet most of the world remains *dumb*. Even Smartphones aren't very *smart*. What's called the Internet of Things (IoT) aims to transform dumb objects into smart objects. By slapping on or embedding sensors into everyday objects, the way we interact with the world will be much smarter. All of the independent systems in and around our homes will talk to each other and ultimately to us, either directly or through our Smartphones, watches, or other mobile devices we end up wearing. And these devices will talk to our friends and family — and maybe even strangers — yikes! Eventually cars will even talk to each other. We're in for a wild ride.

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## P2P/ SELF-ORGANIZING NETWORKS

"A [peer-to-peer](#) (P2P) computer network is one in which each computer in the network can act as a client or server for the other computers in the network, allowing shared access to various resources such as files, peripherals, and sensors without the need for a central server."

As discussed earlier, decentralization is a key trend that unlocks lots of possibilities. The [P2P Foundation](#) lists a large number of areas where P2P may significantly impact, and maybe even disrupt the status quo. Peer to peer appears as a radical shift because it threatens *centralized* power structures. Centralized entities act as gatekeepers who consumers must go through to get to the other side. Most of our world operates on the centralized, gatekeeper model. Banks safeguard & distribute our money. Doctors filter information, and prescribe treatments. Publishers and Retailers act as middlemen between creators/ manufacturers and consumers.

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## DIGITAL CURRENCIES

Digital currencies come in two flavors: those endorsed by government entities and alternative currencies not endorsed by central authorities. Think of the former as an extension of business-as-usual. Smartphone based applications that tie into the existing banking system is an example of such a system. Alternative currencies such as Bitcoin exist independently of traditional financial systems and may operate with or without centralized infrastructure. Bitcoin is the most radical because it is a fully decentralized currency operating completely outside traditional financial boundaries. We'll talk more about digital currencies in chapter 7, Cyber-Finance.

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## WEBRTC

"[WebRTC](#) is a free, open project that enables web browsers with Real-Time Communications (RTC) capabilities via simple Javascript APIs. The WebRTC components have been optimized to best serve this purpose. Our mission: To enable rich, high quality, RTC applications to be developed in the browser via simple Javascript APIs and HTML5." Wow ... that's technical!

In simpler terms, WebRTC holds vast potential to turn every browser into a communications platform. WebRTC may lead to a fundamental shift in the [Democratization of Telecom](#). Think of the possibilities of something like a P2P version of [Periscope](#) (owned by Twitter).

### Who's Behind it all?

As you plot out the various players within a space, an excellent idea is to look at the situation from the perspective of multiple stakeholders to get a feel for how (and when) things will play out. Looking up and down the value chain you'll find numerous players — although some players are being cut-out of the picture. Take consumer electronics (CE) as an example. Within the CE ecosystem, you'll find hardware manufacturers, software developers, and content publishers. Also think about how each product reaches the consumer. Each of these players is moving in a certain direction based on current perceptions of the market and will win/lose based on how trends play out.

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## TECHNOLOGY HEAVYWEIGHTS

Each industry is different and ever-changing. Rather than simply give you a snapshot which will be obsolete by the time you read this, let's look at an example of an industry heavyweight.

In 2011, much was said about *mobility* and *cloud computing*. A WAR was (and still is for that matter) being fought for the Cloud. Some stragglers at the time were Blackberry (RIMM, now \$BBRY), and WebOS (\$HPQ), the real battle was being fought by the likes of Apple (\$AAPL), Microsoft (\$MSFT), and Google (\$GOOG).

Let's fast forward to 2015:

- [Apple's Many Competitive Feuds at Home and Abroad](#)
- [Apple v Microsoft in the technology boxing match of the century](#)
- [Google Is Facing A Strong Threat To Its Core Digital Ad Market From Facebook](#)
- [Google versus Facebook](#)

Our world is changing fast and technology is driving much of that change. Let's use Google as example. It's key to study the company for insights on what the future of tomorrow will look

like. While some investors may be able to dodge in and out of \$GOOG, my personal feeling is that the most important reason to study Google's [Battlefield](#) is that it offers insight into other (smaller) industry players. What side of the battle will they find themselves? Will they be on the winning side? Or, will they be trapped behind enemy lines? For investors, the first case presents long opportunities, while the latter offers up short plays.

Something to think about ...

[In the digital economy, your competitors aren't your only competition.](#)

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## VISIONEERS

Visioneers commonly fail to study what's going on in the markets, which is one of the reasons why most fail — or worse yet, end up in an industry with little if any profits (like the airlines).

While visioneers certainly don't need to dig deep into the numbers, it's a really good idea to know what the big picture looks like, and what major players in the industry are doing. A quick glance at the major financial markets will go a long way to helping them launch at the wrong time. And, they'll be able to gain insights on other market players and that will help them know what the box looks like — so they can think outside the box!

Visioneers are all over the world and in today's digital marketplace —they may be competing with others half-way around the world. Let's take a trip around the world and look at what visioneers are doing in America, Europe, and Asia.

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## AMERICA

America's Silicon Valley is synonymous with innovation. Communities all over the world seek to replicate the success of the *valley*. Here are some rankings by major publications that will give you an idea of what's going on:

- Looking for the 'Next Big Thing'? Check out ['Unicorn 100' Top 100 \\$1bn+ Startups](#)
- [TiE50](#), Silicon Valley's most enterprising startups.
- [50 New York Startups](#)

One of the major reasons for the United States being the top spot for entrepreneurship is the mindset of Americans. America is seen as the Land of Opportunity and that spirit runs deep. Being a successful entrepreneur is held in high regard — after all, it's part of the American Dream. Entrepreneurs for the most part are thought to be hard workers and that is highly respected. They *earned* their money. While social equality plays a large role in Europe, the United States is more focused on equal opportunity, even though this resulted in more wealth disparity. American's legal system also is more fine-tuned to entrepreneurial success.

Hiring new employees cost significantly more in Europe because of added social costs. The overall working environment in Europe is also more heavily regulated than the U.S. or Asia. According to [The Culture Map](#) by Erin Meyer, "National Culture trumps Organizational Culture"

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## EUROPE

Europe is not exactly what you'd call a hotbed of innovation, or at least applied innovation. For a multitude of reasons, the continent falls significantly behind America and Asia in creating startups. [Why don't more Europeans want to be entrepreneurs?](#) points out that "A majority of Europeans (58%) would prefer to work as an employee rather than risk starting their own business."

Some of the major problems facing Europe from an entrepreneur's perspective are that larger European countries avoid dealing with small entities, capital is difficult to acquire, and regulations are stifling. Perhaps worst of all though is the aversion to risk. In America, and to some extent in Asia, failure is seen as a routine part of doing business. However, in Europe, a business blow-up is stigmatizing. Also the European Union is well integrated financially, but in the real economy — cultures are very different and language barriers can pose problems.

There's certainly hope for Europe to rise up the entrepreneurial ranks as demonstrated by the [Hottest European Startups](#) 2014 (Wired UK) which highlights Europe's hot digital cities and rising companies and founders.

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## ASIA

In [Cultural differences in Entrepreneurship across Europe, the US and Asia](#) Maximilian Greschke said that "One thing European and American start-ups can learn from Asian start-ups is something that entrepreneur Paul Graham called "ramen profitability." ... being frugal and resourceful." Funding in Asia is more difficult than in America and Europe, yet where there's a will, there's a way. Asian entrepreneurs are quite adept at starting on a shoestring, which is a huge plus in reaching profitability.

With its huge resource base, Asian entrepreneurs can tap into a plentiful supply of labor at low cost — which helps to get things off the ground quicker. In contrast with U.S. start-ups, Asians tend to focus less of international ambitions, which may be in part due to their already large home markets. Greschke says that "In Asia, materialism has a much higher place than in western societies from my experiences." And he heaps high praise on Singapore, stating that it's "probably one of the greatest places on earth to start a company."

Here are some resources that will help you understand the Asian region:

- A look at [RedHerring Asia Top 100](#) startup list
- [TechInAsia](#) is an excellent news site.
- [A different perspective to Southeast Asia's startup ecosystem.](#)

And

[A Crash Course Into the Startup Ecosystems of Asia](#)

Note: Other regions are not deliberately excluded; it's just that less information seems to be available on other regions — especially in English).

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## SCIENTISTS, ENGINEERS, HACKERS, HOBBYISTS

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### SCIENTISTS/ENGINEERS

Scientists and engineers working at universities and companies around the world are instrumental in bringing forth next generation products and services. As an example, look at how Xerox PARC's (Palo Alto Research Center) engineers developed many foundations for today's computing experience — Ethernet, the mouse, etc. in the 1970s. Now [PARC](#) is aiming to reinvent the internet as we know it. A networking technology dubbed Content-Centric Networking ([CCN](#)) is a technology that focuses on the data itself, not necessarily where it's located. Thus, packets of information may end up travelling shorter distances across the network and content may be more secure as well.

Leading universities and labs around the world are where great scientists and engineers ply their trade. One way to track down leading researchers is to look where their main tool is — the supercomputer. Officially, the World's Fastest Computer (June 2015) is the Tianhe-2, a supercomputer developed by China's National University of Defense Technology with a performance of 33.86 petaflop/s (quadrillions of calculations per second). But that will change, quickly. It's better to just do a search on “world's fastest computers” or visit the [Top 500](#).

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### HACKERS AND HOBBYISTS

Will future change be driven by Mega-Corporations, or will the Makers rise up? Hackers and hobbyists make up what's called the maker movement. According to [Wikipedia](#) “the maker subculture is a contemporary subculture, representing a technology-based extension of DIY culture. Typical interests enjoyed by the maker subculture include engineering-oriented pursuits such as electronics, robotics, 3-D printing, ...”

Mega-corps certainly hold immense power. En masse they control much of the financial, natural, and technology resources around the globe. With trillions in wealth, vast pools of patents and copyrights, plus cozy relationships with governments — are they destined to control future technology trends? And, are they destined to grab the lion’s share of profit from technological change?

Although *makers* are at the other side of the spectrum, they (as with many smaller entities) possess more creativity, innovative energy, and entrepreneurial spirit. Makers are fascinated with creating cool things, and openly sharing with other *makers*. While money may arise from their creations, *makers* are more concerned with creating kick-ass products. And in the process, *makers* tend to openly engage users in the design process. Obviously, there’s nothing wrong with making money — that’s what business is all about!. The problem arises in how profit is pursued. Engaging in short-term (short-sighted) profit generation often causes unforeseen damage, whereas the creation of longer term value creates a winning scenario for all involved.

Over the past few years, the DIY movement really took off. While traditional PCs lose ground to tablets and smart-phones, *makers* brought forth the likes of Arduino, Raspberry Pi, and even a supercomputer board — Parallela. Through new, innovative funding platforms such as [Kickstarter](#) and [Indiegogo](#), makers are delivering cutting-edge products such as Ouya (open-source video game console), Pebble (Smartwatch), and even what may be the next generation of video gaming (Oculus Rift/ Virtual Reality).

To peek inside the maker community, check out [Make](#) magazine, as well as hackerspaces around the world.

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## GOVERNMENTS

Governments all around the world are involved in the future of the internet. In fact, it was the U.S. government that conceived the internet’s predecessor Arpanet. In 1969, DARPA unveiled Arpanet which connected just a few computers. From those humble beginnings sprang today’s internet.

One of the biggest issues of a globalized internet is answering the question of who (if anyone) gets to control the net. In December 2012, the International Telecommunication Union (ITU) [summit broke down](#) after the U.S. and other democracies refused to sign a treaty giving the U.N. agency more authority over how the Internet is managed. Monitoring communications and outright censorship are huge issues with countries all around the world. Some like China are quite domineering, taking harsh measures to control content contrary to government policies. Technologies such as [Deep Packet Inspection](#) are often employed to block undesired or

forbidden content. Other countries are less controlling, or at least employ surveillance under the radar. In the end, it's about [Internet Censorship](#).

Fast forward a few years. In May 2014, the U.S. announced that it plans to relinquish remaining control over the Internet (ICANN) and as of June 2015, [the U.S. plan to cede Internet domain control on track](#). Where this takes us is anyone's guess. Will the net become more fragmented?

a) Secretive governments such as Iran and North Korea are looking into ways to cordon off their citizens from the rest of the world. And, China, with the largest number of internet users is known for its' Chinese firewall.

b) Even more open governments fear the [Dark Web](#) which may avoid taxing authorities, harbor criminals, and worst of all — thwart efforts of the MPAA/RIAA.

Tim Berners-Lee puts it simply ... [People will always try to control the internet](#).

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## SPECIAL INTERESTS

Special interest groups, typically NGOs (non-governmental organizations) lobby governments, boycott companies, and stir up the media. Although overall, the internet is liberating — its free flow of information exposes us and opens our eyes in untold ways. Think back to life before the internet — *close your eyes* for a minute. How was it? In the past 20 years or so, our way of life has completely changed. The way we live, work, and play are completely different. Even something as simple as getting together with friends required significant prior planning or lots of phone calls.

Where I went to high school, there were mostly white, Caucasian students. Only a small percentage was Black, Hispanic, or Asian. I don't even remember hearing any other languages, except in Spanish class. My experience with other cultures was pitiful. Then I went into the United States Army. Talk about a wakeup call. One of my drill sergeants was a black man — maybe 6'8, 250 lbs. He commanded instant respect! Many of my fellow basic trainees were from other cultures. I was shell shocked, but I quickly adapted. Living in such close quarters, you learned to get along quickly. In *basic training*, one of my best friends was Asian — I didn't even know any, and only remember seeing a handful of Asian kids in high school — oh, what a sheltered life.

Now imagine the whole world shell shocked. Boom! The internet smashed through barriers and opened people's eyes to the good, the bad, and the ugly. Some opened their minds. Others became indignant, immediately launching counteroffensives which sought to censor or even ban the web. To this day, societies around the world fight hard against this intruder called the world-

wide-web and achieved limited success until the smart-phone came along. Then, mobile connectivity ripped another hole in the fabric of cultures around the world.

Different people are interested in different ways of life. Many are curious about other cultures and embrace the *World Wide Web*. Some are dead set on maintaining closed societies, apart from reality. Others are willing to let their members at least peek into the outside world.

### Ripple Effects?

Change is a *dynamic* process. The future is a *great big puzzle*, a collection of twists and turns, blind spots, hopes and fears, and most of all *possibilities*. Although we can't accurately *predict* future internet capabilities, we can *anticipate* some of the possibilities and adjust our course accordingly. Capitalizing on change is like sailing on the open sea. We can't control the *wind*, but we can adjust the sails. Over the next 5, 10, 15 years —the world will change ... big time!

The question is will you *capitalize on change* or will you be *run over*?

Most of the materials I've come across on 2<sup>nd</sup>, 3<sup>rd</sup> order effects and scenario planning are way too limited to apply to finding and capitalizing on disruptive technology. My recommendation is to look at futurology as a catalyst. While some of, if not most, of the predictions are outlandish, it will give you a glimpse at the radical changes that will take place. Compare the virtually limitless possibilities of science fiction and compare it to what scientists, engineers, and hackers are doing today.

As a starting point, check out:

- [Futurology, Reddit](#)
- [Singularity Hub](#)
- [Global Change](#)
- [Next Big Future](#)
- [Futurist Speaker](#)
- [Imagining the Internet](#)

To really kick-start your efforts, think about:

#### **Who will be the Winners/ Losers?**

- What – the “Technology”
- When – Timing.
- Where – What nations, industries, companies.
- Why – Technology (Mind of its own).
- How – Disruptive, Big Bang. Fast/ Unexpected.



## WHAT'S HAPPENING?

“When a distinguished but elderly scientist states that something is possible, he is almost certainly right. When he states that something is impossible, he is very probably wrong.

The only way of discovering the limits of the possible is to venture a little way past them into the impossible.

Any sufficiently advanced technology is indistinguishable from magic.”

—Arthur C. Clarke:

In times past, machines augmented humans or at most, replaced his physical abilities. For nearly a century, automated machines called computers augmented human brainpower. There was a clear line between computer and human activity. Now that line is blurring. In the 1990's the World-Wide-Web jumpstarted a new revolution that will continue with Things, 3D Printing, and Autonomous Systems (Thinking Machines).

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### INTERNET OF THINGS / AUGMENTED REALITY

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#### BRIDGING THE GAP

Today the virtual world and physical world are separate entities. We use PCs, laptops, tablets, smart-phones, and even smart-watches to tap into the internet through the web or apps. We (humans) feed the beast. Tomorrow, the beast will feed itself. By 2020 it's estimated that 4 billion people will be connected to the internet, but tens of billions of sensors and other *things* [will be connected to the net.](#)

[Physical Objects Are About To Become As Programmable As A Computer](#) and that will radically change our world. Imagine static objects being a thing of the past. Inanimate objects will change shape and form, as well as responding to the environment. In essence, it will turn the

world upside down. Add in artificial intelligence and it may borderline on creepy. This is the stuff of science-fiction.

Tomorrow's internet will be highly programmable as more and more objects swarm together. With the switch to IPv6, the number of devices, both owner-operated and autonomous will skyrocket. Will the future be full of houses with attitude? With the advent of cheap microcontrollers, such as [Arduino](#), projects are popping up all over the place. It's becoming common for plants needing water to send a tweet so the whole world will know this all too important piece of information. And, let's not forget toasters that tweet when bread is toasted or washing machines that tweet when the clothes are clean. The internet is full of just plain weird things. Machines already can tweet; the next step is to [connect Twitter to the Internet of Things](#).

Several factors are converging to create this Internet of Things. Mobile computing seems to be the primary driver, acting as the controlling device or interface. Then there are a number of cheap microcontrollers such as [Arduino](#) and other more powerful [credit-card sized micro-computers](#) such as Raspberry Pi. [Open Source](#) offers a formidable challenge, but odds are that proprietary solutions will rule the day — then again that's up to consumers. Cheap sensors are also adding to the mix and as they talk to the ever present cloud — a perfect storm is brewing.

Jacob Morgan (among many others) says that the [Internet of Things Will Change Everything](#). Well, maybe everything is an exaggeration, but IoT will change the world as we know it — just like the World Wide Web did in the 1990's and into the early 2000's. Think of all the things that will end up being connected in the next 10 to 20 years. Driverless cars will certainly need to talk to each other. As will drones that fly in the skies above. Plus emerging markets with significant infrastructure issues are finding innovative ways to overcome obstacles and connect to the IoT, such as the [BRCK](#) being used in Africa to handle power/ internet connectivity blackouts.

[50 Connected Devices - How Mobile and the Internet of Things Will Affect You](#) shows us the tip of the iceberg.

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## AUGMENTED (VIRTUAL) REALITY

The concept of [augmented reality](#) is decades old. Ever so slowly we gained ground on merging our dream (virtual) world with the real world. However, the media paid scant attention to the world of augmented reality until Google unveiled its [glass](#) wearable computing product. When word got out about *glass*, the media went wild. Like the word *windows* in years past was synonymous with Microsoft, the word *glass*: is now synonymous with Google.

Many competitors aim to take on Google, yet most products don't match up well. Nevertheless, the market for wearable computing is huge and there will be a market for more than just one company — especially in light of Google's withdrawal of *glass* from the market. One of the more interesting products is [Recon Jet](#) which is targeting hardcore sports athletes, such as those engaged in snow sports and cycling. When glass finally hits the mainstream, will it be *cool*

enough? Sony is also working on [Smart Eyeglasses](#) which will be “lightweight, binocular eyewear that enables true augmented reality experiences.” [Other players](#) are also in the race, including Microsoft.

As a consumer product, companies need to prioritize design. For better or worse, wearables are by their nature *fashion* products. They need to look cool. If they don’t, no amount of marketing in the world will help. And they need to be simple and work as-is. The augmented reality industry is only in its infancy. To keep up, check out the [Augmented World Expo](#).

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## CRYSTAL CLEAR

Like the iPhone before it, [Google Glass](#) (and by extension the AR industry) is likely to be a catalyst for a [vast apps marketplace](#) with far-reaching effects. Let’s look at how Glass will affect several industries:

- Advertising

Advertising and sales of products/ services may undergo radical changes when Glass or any other always-on, hyper-connected device is widely used by consumers. Advertisers are still clinging to *interruption* model, where *ads* are targeted at consumers — mostly in a blind fashion due to privacy concerns. Internet marketing firms are notorious for tracking consumers as they surf the web. Opt-out is the *modus operandi*. To not be tracked, consumers must go to great lengths — especially in light of the advanced techniques being employed. Cookies, loathed by consumers may be going away. However, a far more insidious tracking tool called [digital fingerprinting](#) may be its replacement.

Until advertisers and consumers reach a consensus as to what’s acceptable, and what’s not — each party will be at odds and advertisements will routinely be generic, not personalized. Even more so, advertising will be resented, not accepted. Consumers still want information on products — the problem is in the delivery. Ads on Glass could be highly personal, but only if advertisers work to resolve privacy issues. With these issues resolved, i.e. opt-in and transparency, a new wave of innovative marketing may emerge.

On the sales side of the equation, we already see retailers struggling to cope with smart-phone price-comparison apps that take show-rooming to a whole new level. Imagine consumers not only tapping into price-comparison apps, but next-generation social networks that enable us to ask our friends in real time what they think of the product under consideration. Consumers may opt to record and share videos socially about their real-world shopping experiences — what products and brands they like, good and bad customer service, and the overall reputation of the product’s usability, durability, etc. Products that fail to live up to expectations might end up going viral. And, with consumers hyper-connected to their friends, a visualized, first-hand experience will be priceless to consumers. That’s a fact that retailers will need to face head-on.

As more and more of us seek the guidance of our friends, the classic advertising model may need a major overhaul. With a wide range of informational sources and the trusted guidance of our friends, twisted messages with hidden undertones will struggle to remain relevant.

- Education

The education market is facing major challenges to say the least. In the 21<sup>st</sup> century, education is more important than ever. Yet, college is becoming more and more expensive — pricing out many in need. Student debt is at an all-time high, with many calling it a bubble. Along comes the [Massive Open Online Course](#) (MOOC), led by well-known and respected universities. MOOCs may force lesser-known universities and colleges to revamp the way they deliver education. In today's world, knowledge and skills are more important than ever. With the internet, distance education was revolutionized. Now, it's growing exponentially. Many universities may ignore the threat from MOOCs, after all — they don't deliver a face-to-face experience. That's a major mistake. In classroom experiences are decidedly different from [on-line education](#). Nonetheless, major change is in the air and it may occur much faster than anticipated — just ask Kodak about digital photography. Clayton Christensen says that “In 15 Years From Now Half of US Universities May Be in Bankruptcy.” Even if this is an overstatement, the [Future of College](#) will be quite different from the way it is today.

YouTube and other on-line learning tools are already compelling. With Glass, learning will be more fun, interactive and accessible. Teachers may be conventionally trained, be a professional in the industry, or simply those with passion who love to share what their knowledge. Anyone can be a teacher and through video streaming the world is their stage.

Glass in the classroom also poses major implications. Lectures might be open to where outside experts are integrated into a professor's lecture. As the world becomes more and more specialized, knowledge will need to come from many sources. Students may also become part of an ad-hoc system where students learn from each other. The traditional education model overlooks the expertise locked inside the student. This is even more so in advanced study programs, where students may know more than the professor — at least in certain aspects of the subject. Also, when real-time language translation becomes available, imagine the hidden knowledge base that will be unleashed.

- Entertainment

Glass will certainly revolutionize the entertainment industry. Video games will become more immersive. It opens up both the virtual world, and an augmented world. In the virtual world, Glass gives new meaning to first-person shooter games and other games that depend on point-of-view. Put on a pair of glasses and boom — you're up close and personal as you take on the enemy, or aliens, or whatever is targeted.

Sports will also be revolutionized. With glass, you'll be able to really *get your head in the game*. Whether its team sports like baseball, basketball, or football; or sports requiring more direct engagement, watching sports will be transformed. Instead of being a passive viewer, you'll be able to watch from all sorts of angles and actually feel like you're part of the action.

Now picture extreme sports. Sharing first-person POV videos will be incredible. Wouldn't it be cool to watch a friend scuba dive, or ski down a black-diamond? And, Glass will transform the way we play sports. We'll be able to get coaching and tips from instructors or a helpful friend.

Role-playing games (RPGs) will also benefit from Glass. By overlaying virtual reality with location-specific information, the physical world becomes the playing field. Today's geocaching and treasure-hunting will look ancient compared to the possibilities opened by Glass. Outdoor enthusiasts will be able to share their knowledge with others, as well as absorb other points of view into their experience. The only limit will be the human mind — will it adapt or suffer information overload. Most likely, some sort of *artificial intelligence* will be needed to help keep information from becoming overwhelming.

Hollywood may never be the same again. Glass will usher in new ways to make movies — both professional and amateur. And, it will certainly offer up tantalizing ways to consume video, to the point of immersion.

Hollywood is divided on the use of *Glass*. On one hand it's a method to advertise with trailers and other short-form formats. Plus the possibility to augment the viewing experience exists. However, Hollywood clings to the model of releasing movies on the big screen and postponing the release to DVD. Movie executives are afraid of digital piracy, as if the theater experience isn't compelling enough on its' own.

- Healthcare

Surgeons will undoubtedly use Glass for real-time updates of a patient's vital signs and other critical information during surgery. Also medical schools may use them to help train the doctors of the future. However, one of the things Glass will do exceptionally well will be to monitor a patient's health as they go about their lives. Patients will benefit from fewer doctor visits. With more and more things being embedded with sensors, our temperature, blood pressure, etc. — will be uploaded via Glass and it will be easy to see our chart at a glance.

More proactively, Glass will give us real-time information on our eating and exercise habits. Also, as we shop, we'll be able to see what all those ingredients mean — and this is where some artificial intelligence would really help. I remember shopping at a local Kroger and looking at the ingredients in A&W Root Beer. Since I don't do the shopping very often, I was surprised to see a new ingredient, Quillaia Extract. Huh ... what's that? So I pulled out my smart-phone and proceeded to look it up. At first glance I didn't like

what I saw. It said something about it being a *humectant*. So I decided not to buy it. Later, on my laptop I searched for the ingredient and found out it may be ok. And, just to let you know — that scary looking term (at least to me), humectant is a substance that is used to keep things moist.

Glass also may help us keep track of any medications we need. And, not just prescribed medicine, but OTC and herbal products as well. Side effects from prescribed medicines are studied in depth. However, in the real world, we take other OTC and herbal remedies that introduce unknown effects. Plus, the food we eat may also affect the nature of side-effects.

- Retail

Imagine being able to go into your local grocery store and Glass highlights — through optical recognition and store-map overlays — the location of all the items on your grocery list. What a time saver. Also the system should be able to handle coupons or offer competitor coupons, if you're in the mood to substitute for another product. And what about that product, Glass may be able to offer up information from the manufacturer and more importantly, your social network.

Other stores may also offer similar experiences. Consumers will be well armed when they go shopping. With manufacturer specs and our friends' opinion at hand, we will demand much more of sales staff. They will need to be exceptionally versed in the pros and cons of competing products. In a *Who Wants to be a Millionaire* fashion, we'll have a lifeline — reaching out to a friend to help us sort out exaggerations and outright lies about products and services. Customer service will need to be a key differentiator for retailers — especially brick & mortar players who, with the added expense of storefronts, simply can't compete on price alone.

Many more applications will spring from Glass. As an information central hub, it will empower us as we live, work, and play. Integrated GPS means we'll be better able to keep our eyes on the road. As we work, step by step instructions will float in front of our eyes — no more cumbersome paper manuals. And, if we run into trouble, we can summon help from a variety of sources. Augmented reality will change the world as we know it. Shopping, News, Communicating, and sharing information will never be the same again. Think about life before the internet, before email — yikes. [Socially Unacceptable/ Awkward behavior](#) will rise to new levels, and guess what — we'll adapt.

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#### 1984 - FASHIONABLY LATE

There is, as with all technology, a dark side to the *augmented reality*. A lot's been written about how *augmented reality* will change society for the better. It's true that it will make a lot of wonderful things possible, but *augmented reality* will also allow for an even greater amount of

surveillance than there is today. John C. Dvorak with PC Magazine says that The Internet of Things is a [Surveillance State in Disguise](#). The Internet of Things gives the governments and corporations that follow our every move something they don't yet have: eyes and ears. George Orwell may just be fashionably late with his book [1984](#).

As I see it, information comes three forms; Secret, Private, and Public. Secrets are what others don't know. They remain exclusively within an individual or entity— outsiders are excluded. As an example, my dreams — unless I tell others, are secret information. Coca Cola's secret formula is just that, a secret. Although several people may know the formula, as long as outsiders don't know, it's a secret. That's why governments consider highly sensitive information to be "State Secrets" whose disclosure would cause serious harm to national interests. Private information is that which may be shared at the individual or entity's discretion. If I share a secret with a friend, it's no longer a secret — it's private. And, as such I expect him / her to keep the information away from others. Information given to companies gets tricky in that as perpetual profit seekers, information given to them in confidence ends up being traded and sold to other profit seeking entities with the information becoming de facto public information. Information readily accessed by anyone seeking such data is considered public. My phone number may be private information, until it's published in the phone book — then it's public.

Glass (or Glasses — I will use the word interchangeably) is by no means as privacy invasive as the media hypes. However, it is a wake-up call as to what technology may be coming down the pipeline. Humans, for better or worse, are becoming cyborgs. Smartphones already look surgically attached to some individuals who never seem to stop talking, texting, or surfing the web. We carry them wherever we go. Over the past week, I've seen several gym members using their Smartphones on treadmills, in the steam room, and even in the hot tub. However, Smartphones are quite noticeable, and that's what makes wearing Glasses so disruptive. Think of them as version 1.0. It won't be long afterward before future versions are released by Google, and others.

Right now augmented glasses look strange, it makes people take a second look, and it gives you pause, because it's different. And, when you're recording a video, there is a red light that comes on, just like many other cameras. But guess what, that won't always be the case. As cameras get smaller and smaller — privacy concerns will grow exponentially.

Swiss researchers developed the world's smallest-ever complete [vision system on a chip](#) that's less than one cubic centimeter. Cameras will get even smaller, maybe even microscopic. Many will say that will never happen! But, what if it does? What are the implications? Who wins? Who ends up losing? If secrets become harder and harder to keep, and private information spontaneously becomes public, what are the ripple effects?

[Privacy](#) is complex by nature. Essentially it means individuals or groups are able to selectively reveal information about themselves. With emerging technologies such as Glass and drones —

especially micro-drones, privacy may become harder and harder to achieve. Corporations, Individuals, Governments — and Criminals will use and be impacted by these technologies. In the end, the world may end up in a surveillance state, anarchy, or something entirely different. What's guaranteed is that the world of tomorrow will look nothing like the world of today. Let's look at each respective area and anticipate possible outcomes of, what shall I call it — how about shadowing.

## Corporations

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Corporations are likely to embrace consumer shadowing. As profit generating entities, corporations stand to profit from mining the data explosion for insights on consumers. At the very core of the search giant Google, and social networking site Facebook, is advertising. That's just how they make money, and to continue growing, their thirst for data is insatiable. In the early days of search and social networking, users voluntarily gave up lots of information about themselves in exchange for free service. That wasn't enough. Corporations sought out new ways to track web surfing to more deeply invade (err ... understand) consumer's lives. There's a fine line between [convenience and privacy](#). Now the digital and physical worlds are merging.

Imagine the possibilities with up close, personal information that comes directly from the consumer's *shadow* or is spotlighted by friends, family, or even acquaintances. Invasive, perhaps, but — a juicy pile of revealing information is too tempting to pass up. Just think of the insights gained by shadowing a person as they work, play, and live. Naturally privacy advocates will scream and shout, laws will be passed, and the consumer will end up oblivious since the laws were written in close consultation with the very corporations handling the data — at least that's the way things materialized in the past. Once can always hope (or is it dream) that government puts some distance between it and those it regulates. Although, even with the best of intentions, data has a nasty habit of escaping — either through error, or outright sabotage. We'll talk more later about how databases may be *hacked* and used for nefarious purposes.

Shadowing is a double-edged though. Corporations are more than happy to shadow and pry deep into the lives of consumers, all in the name of offering a better product or customer experience of course. Yet, corporations guard their data closely, fearing that others will find out what they're up to. And find out they will — thanks to the same shadowing technologies they use on consumers. You see, technology is neither good nor bad — it's neutral. Companies do their best to keep secret what goes on inside the corporate walls. However, employees, especially in the digital age, feel the urge to share. We're taught at an early age that sharing is the nice thing to do — and it is, except for information on upcoming products, pricing, and the like. With shadowing however, it will be harder and harder to keep information confidential. With conversations recorded and uploaded to who knows where, companies (like consumers) will find it increasingly difficult to protect private information. And, that's just the tip of the iceberg. Competitors, foreign and domestic, naturally want to take a peek at what's inside those forbidden corporate walls. And, corporate/ industrial espionage will take on new meaning.

As said earlier, privacy is complex by nature. Boundaries will be continually pushed by individuals in society on what will and what won't be accepted. [Advertising's](#) been around for a long time. "Egyptians used papyrus to make sales messages and wall posters. Commercial messages and political campaign displays have been found in the ruins of Pompeii and ancient Arabia..." Commercial enterprises always want to know about what buttons to push that will get consumers to buy their products. For a long time this was a guessing game full of trial and error.

After centuries of print, along came *radio* and *television* which facilitated mass advertising. Radio and TV pumped out messages far and wide. Even with advances in the science of psychology, advertising was still very much trial and error. Then along came the personal computer that soon connected to interlinked networks. Before long, the internet was commercialized. Advertisers drooled at the possibilities of *interactive advertising* which theoretically allowed advertisers to get inside the consumer's mind. Consumers flocked to search engines, free email sites, and social networking venues. Google profits immensely by selling keywords and to a lesser extent, so do others. Social sites like Facebook and Twitter get consumers to fill in the blank with their life stories.

The era of Big Data is here. Consumer's *likes* are being tracked and surfing the web sets up secret *shadowing* with cookies and other hidden bugs. And that's just the beginning. Online advertising companies are just getting started. Imagine the shadowing possibilities when they pool large blocks of data in the on-line world with what's available in the real world. Combine on-line personalities (e-mail/ smartphone) with real world activities (debit/credit cards) and the sky's the limit. But why stop there. Let's use Facial Recognition to *shadow* consumers.

The [future of retail](#) is already here, including facial recognition that will track consumers. How will it change the way we live? In public we've already acclimated to being shadowed by surveillance cameras. Now stores are now taking this to the next level where cameras "not just see what people do, but know who they are." Tracking companies use software, combined with sensors, to estimate gender, age and other variables. Of course "No personal information is collected. No images are saved or recorded." Further down the line, it's not hard to imagine companies matching real-time photos to those on sites like Facebook to positively identify consumers. Going down this road is full of pitfalls for consumers who prefer not to be in the spotlight.

Of course laws will protect consumers. Maybe, maybe not? "EU privacy law states that prior consent must be given before issuing a cookie or performing tracking, unless it is necessary ..." but that [isn't stopping Facebook](#). Besides stores, plenty of others will also use shadowing technologies for mischievous or outright malicious purposes. To give you a taste of what's

coming; look at apps such as [SceneTap](#) which lets you "view information on how many people are at a place, the male to female ratio, and the average age of everyone inside." Just think how curious teenagers and peeping toms will use this technology. Then there's the issue of intentional harm, ranging from ID theft to stalking. It's not just companies and governments that want to know more about people — criminals do too. When persons are positively identified and linked to a location, criminals will know where they are and where they're not — for example not being at home. Women especially will be targets of shadowing. The app "Girls Around Me" drew a lot of unwanted attention in a privacy backlash and was pulled from the market. But, this will not be the end of such applications. In fact, location-based privacy will be the next frontier in the privacy wars.

## Governments

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Even if laws are passed that protect privacy, *shadowing* will still be done — in the name of protecting us. Governments, as lawmakers, exempt themselves. And if the data is collected, it may be used, misused, and even hacked — thereby releasing the information into the wild. One of the problems is vague laws (seldom-prosecuted or not) that open the door for prosecutors to go after people because the government doesn't like them. The [EFF's](#) (Electronic Frontier Foundation) mission is "Defending Your Rights In The Digital World" and they've got a huge job to do.

Vague in nature, laws potentially criminalize the innocent behavior of average citizens for breaking *rules*, or terms of service that harm no one and for disclosing information that embarrasses those in power. Now imagine all of the tens of thousands and maybe even hundreds of thousands of laws all around the world. By stripping privacy, and being able to shadow otherwise innocent citizens — governments will be able to more easily crack down on those who disapprove of their political positions. In many countries, simply disagreeing with those in power is a crime.

New *shadowing* technologies are clearly on a collision course with the inherent need for people to not be under a microscope. Being watched changes people's behavior. They avoid criticizing openly, instead choosing to let emotions fester — which ultimately may cause violence and mayhem. Shadowing modifies emotional experiences. The sense you are being watched and followed everywhere you go is indeed most troublesome psychologically; just think about children raised by over protective parents. Taken to the extreme, the children grow up psychologically damaged.

The battle for privacy is often an issue of freedom versus control.

Quis custodiet ipsos custodes?

"Who watches the watchmen?"

If we get into massive surveillance states around the world, what happens if the tables are turned? [Sousveillance](#) is the opposite of Big Brother. What happens when those *shadowing* are instead shadowed themselves? Watchers don't like to be watched. How will they react if and when they themselves are placed under constant shadowing? In the United States, a taste of what may be to come is the fight between those who want to actively *record* police in public and those in power who don't like their day-to-day activities exposed to public scrutiny. Two organizations testing these waters are [CopBlock](#) and [CopWatch](#). Old wiretapping laws applicable to the pre-digital age are being used in various states to prosecute citizens for daring to record police, often involving misconduct or police brutality. With new technologies like *Glass*, Sousveillance may very well flood the streets. We may soon see the implications of a full blown war between Big Brother and Little Brother.

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## 3D PRINTING

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### IN THE BEGINNING

3D Printing has been around since the 1980's, known as *additive manufacturing* — although today that term is often used to refer to the more high-end, industrial uses of the technology. For our purposes here, the term 3D Printing (3DP) will refer to technology that creates finished, consumer goods. 3D Printing is a process of building up, instead of tearing down. Traditional methods of manufacturing rely on what is referred to as subtractive manufacturing. Conventional methods start with a block of material(s) that will be machined (cut, drilled, lathed, etc.) until the final shape emerges. Plus, the pieces may need additional assembly. 3D Printing works differently; it deposits (or fuses) material layer by layer, millimeter by millimeter to build up the shapes(s) that ultimately print the product.

3D printing is a process that starts with a digital 3D model. 3DP uses virtual blueprints (from CAD software) to relay instructions to printer heads that deposit (or build up) material in successive layers. A term from Personal Computing's early days — WYSIWYG — might be used to describe the process where the virtual model and the physical model are almost identical. Right now the 3D printing industry lacks standardization, however, some file formats are emerging as standards such as the STL, VRML, or WRL file formats.

3D Printing actually uses several technologies listed below:

**Extrusion** processes such as fused deposition modeling (FDM)

**Granular** processes such as direct metal laser sintering (DMLS), Electron beam melting (EBM), or Selective laser sintering (SLS)

**Laminated** processes such as Laminated object manufacturing (LOM) or Digital Light Processing (DLP)

That's a tip of the iceberg explanation of 3D printing. Volumes of information are available on the internet. So rather than reinvent the wheel, get out your keyboard and surf away:

[3ders.org](http://3ders.org) (an industry news aggregator) offers a nice overview of 3D printing. To learn even more, just go to your favorite search engine, such as [StartPage](#) and type in 3D Printing Basics. Also you can go to [YouTube](#) and do the same.

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## CHANGING THE WORLD

3D Printing promises to change the world, and it just might. The big questions are how and when? Let's start with how. 3DP applications range far and wide. However, the list isn't too long for consumer goods. Off the top of my head, here are 5 areas where 3D Printing will change the consumer landscape.

- Apparel
- Food
- Gadgets
- Health
- Toys

### **Apparel**

Clothing is a natural fit for 3D printing. Fashion is fast paced, always changing, and style is of the essence. For far too long, consumers settled for ill fitted; mass produced, standardized *one size fits all* clothes. Even specific sizes vary from manufacturer to manufacturer — it's time for size *me* and it's coming sooner than most think.

#### *Clothing*

- [3D Printed dress](#)
- [Fashion](#) @ i.materialise
- [Fashion](#) @ Cubify

#### *Shoes*

- [Continuum Fashion](#)
- [Shoe industry](#)

### **Food**

Guess what? 3D printed food is here, at least crudely. From raw ingredients, specialized 3D printers are able to process food, such as chocolate and sugar. And [more](#) is coming.

3D printers are getting more sophisticated, smaller, and cheaper. Inevitably, some form of printer may join that other indispensable appliance in the kitchen — the microwave oven.

## Gadgets

Think of this category as a catch-all for all sorts of products (or add-ons) that consumers use in their daily lives around the house, in the car, or on the go.

- Cases for [mobile phones](#).
- [Home Décor](#)
- [Other gadgets](#)

## Health

Healthcare offers huge potential for 3D printing. On the high end is bio-printing, which is beyond the scope of this book. However, with consumers taking more control of their healthcare, many products are coming out of the woodwork.

Glasses, tired of frames that just don't fit?

[Make Eye Wear](#)

Or, [Print you own](#)

And, there are many creators that are making DIY medical products:

- [Can/Bottle Holder for Crutches ☺](#)
- [Flexy-Form Insole](#)
- [Open Hand](#)

The sky's the limit. Soon, all of us may be able to be designers. In fact, [Biohacking, Body Modification, and 3D Printing Will Change the World](#). Plus, [DIYbio](#), Synthetic Biology, and 3D printing open up a new world of possibilities.

## Toys

3D Printing is really hitting its stride in creating toys. Kids get bored all too quick and pets chew them up. This is a perfect application for 3D printers. Just recycle the materials and make something new.

- [3D printed toy industry news](#)
- [Cubify](#)
- [Legos](#), lots of possibilities here

Or just do your own [personal manufacturing](#).

As you can clearly see, 3D Printing technology is going to rip industries apart. Established players will either adapt to the new competitive environment and deliver what consumers want, or they will go splat! on the windshield. How established players adapt will send ripples through the industry. Looking back in time, without fail it seems, current players fight tooth and nail to discredit new, upcoming technologies. Many will choose to battle in courts instead of in the competitive marketplace. 3D Printing is no different; Intellectual Property battles are already underway. However, 3D printing poses unique challenges, even more so in the consumer market.

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## BARRIERS TO ADOPTION

Although costs are coming down and performance is going up, 3D Printing faces a number of issues before becoming mainstream with consumers or even small businesses.

- **Cost.** In the current state of the industry, the total cost of a 3D Printer is spread across the initial purchase price, consumables, and other hidden costs such as finishing or even assembly of multiple parts due to printer size restrictions. Also maintenance must be considered. Printers also periodically require both scheduled and unscheduled maintenance. And spare (mostly non-standard) parts must be considered. Design costs also factor into the equation.
- **Complexity.** CAD software requires mastering the art and science of working in three dimensions, which is no easy task. Many commercial products are on the market as well as free, open-source applications such as [Blender](#) and [FreeCAD](#). Here's a list of even more [design software applications](#).
- **Materials.** Although the range of materials is quite broad, it's fairly limited in the overall world of manufacturing. Typical 3D printing materials such as ABS and PLA are quite weak, limiting them to a tight range of applications. On the high end, the [Objet1000 Plus](#) printer is able to handle over 100 materials — yet even with this broad selection, applications must be carefully planned out. Naturally, in the coming years, prices will drop to more affordable levels. For consumers, printing their own creations can be quite exciting. However, there's a long way to go. It's one thing to print a coffee mug or some interesting jewelry and quite another to print more critical parts such as a replacement part for an automobile or maybe a household appliance.
- **Accuracy/Finish/Full Color.** 3D Printers aren't yet as accurate as many traditional manufacturing processes, although it's a hurdle likely to be leapt over in the not too distant future. The same applies to needing additional finishing. Full color is also another hurdle that needs to be overcome.
- **Killer application.** Right now, 3D printing is mostly a hobbyist endeavor. Consumers aren't terribly excited by 3D printing, but they will be. What's needed is a killer application, like VisiCalc (spreadsheet), or e-mail, or SMS texting. Someday, in the not too distant future, something will come along that sets 3D Printing on fire — and when it does the world will change forever.

## INTELLECTUAL PROPERTY (IP)

In response to IP, safety concerns, and *entrenched interests*; governments around the world will do their best to control what's 3D Printed. In the digital world of today, the MPAA and RIAA are fighting a losing battle in a desperate fight to save an obsolete business model. And that's just movies and music. Imagine when the manufacturing world turns upside down. A world where physical products are easily scanned, digitized, and sent around the world in a matter of minutes. Traditional manufacturers will compel governments to clamp down on this evil technology and return manufacturers to their rightful place! Commercial enterprises, fewer in number and with multiple interactions, are much more vulnerable to government regulation. Nevertheless, even then large swaths of the commercial world operate outside the regulatory world. [The American Interest](#) did an excellent piece last year which talked about how “The informal economy is a global phenomenon that exists in rich and poor countries alike, currently employs almost half of the world’s workers (about 1.8 billion people), and totals to economic activity of around \$10 trillion. If the informal economy were an independent nation, it would be the second-largest economy in the world ...”

Michael Weinberg wrote an excellent white paper "[It Will Be Awesome](#) if They Don't Screw it Up: 3D Printing, Intellectual Property, and the Fight Over the Next Great Disruptive Technology" that "examines how intellectual property (IP) law impacts the rapidly maturing technology of 3D printing, and how incumbents who feel threatened by its growth might try to use IP law to stop it." Digital Rights Management (DRM) may end up in some 3D Printers. However, it won't end up in all 3D Printers. And, even those printers that do you use DRM, the threat of it being *jail-broken* is a real possibility. Manufacturers, like recording studios and Hollywood, will fight back, there's no doubt about that— it's just to what degree they will co-opt government in the effort to cling on to dying business models.

Undesirable Products are another area that will drive regulation. When news broke of [Defense Distributed](#) creating a 3D Printable gun, gun-control advocates went crazy. Media reports told greatly exaggerated stories about guns being *printed* and how everybody would soon roam the streets — armed! The Wiki-Weapon project halted temporarily after Stratasys confiscated their rented printer. Over all the Wiki Weapon Project plans to 1) Develop a fully printable firearm, 2) Adapt the design down to cheaper 3D printers, and 3) Become the web's printable gun wiki redoubt. Overall they hope "This project might change the way we think about gun control and consumption. How do governments behave if they must one day operate on the assumption that any and every citizen has near instant access to a firearm through the Internet? Let's find out."

And, that scares a lot of people who will clamor for regulation to clamp down on the ability to print guns, as if by the mere fact that guns can be printed en masse — they will be printed and mobs will rule the streets. Another area of contention is drugs. Backdoor Pharmacist wrote that [3D-Printed Drugs Are Coming](#) and that “We cannot stop the winds of change ...”

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## AUTONOMOUS SYSTEMS

Search the news for the word “layoffs” and you’ll see lots of companies laying off people.

Search the news for the words “unemployment” and “robots” and you’ll see lots of stories about how machines are taking all the jobs.

The fact is, machines are taking away a lot of jobs — jobs that are routine. Human activities that are routine, step-by-step, will be done by machines, leaving a trail of unemployment in its wake.

Here’s a short list of automation taking the place of humans:

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## INTELLIGENT/ SMART DEVICES

Wal-Mart’s Scan & Go experiment aimed to replace Cashier. However the app was pulled for now. It will try again, the savings are too compelling. Smartphones (and tablets) will ultimately [kill off the cash register](#) which reigned supreme for nearly a hundred years and cashiers will go the way of the dinosaur. Real people may still be around, it’s just that they’ll do more than ring up sales — machines can do that much faster.

And, we’re in the early stages of mobile technology. Americans increasingly are doing things themselves — banking, cashier, restaurant order taker, medical researcher, etc.

Even all this will most likely seem to be only the start of something much bigger. As apps become smarter and the distance between consumer and manufacturer shrinks, it will usher in previous unheard of levels of customization and personalization.

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## JOURNALISM

[Narrative Science](#) offers software that essentially replaces reporters, at least those simply rehashing what went on. Hard-hitting, investigative reporting will still need humans at the helm. Martin Ford recently wrote a book: [Rise of the Robots](#) which talks about the “threat of a jobless future.”

It’s not all doom and gloom though. Technology holds out an olive branch — more creative, innovative jobs may be created by the rise of the machines. Paula Newton asks: [Will The Robot Economy Push Us Into More Creative Jobs?](#) Look at it this way — 200 years ago, 70 percent of American workers lived on the farm... Today, the vast majority of us are doing jobs that no farmer from the 1800s could have imagined. The fact is we as humans must adapt to a future of robotic manufacturing, 3D printing, and things we can’t even fathom today. If we don’t move forward, we face the real possibility of sliding backwards and nobody really wants another Dark Age.

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## Robots:

Robotic systems are already well on their way to replace thousands, maybe even millions of human workers around the world. [Rethink Robotics](#) created Baxter: “A new era of manufacturing has begun. The long-standing idea of robots as caged, complicated and inflexible has given way to a new model of collaboration between workers and machines.” [Fetch Robotics](#) created Fetch and Freight designed to work together and alongside humans in warehouses.

Working in a warehouse may be a job from hell; but even these jobs are being replaced. Mother Jones did an entertaining piece: [I Was a Warehouse Wage Slave](#). Robots are pretty good at finding products, it’s just that “[picking them up off a shelf remains a far greater challenge](#) for the machines.” But they will get better in time and humans will get replaced.

Well, those are just low-end jobs you say — not so fast! Robotic systems are now replacing high-end, professional jobs.

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## HEALTHCARE

Healthcare isn’t necessarily safe. [Pill-pick](#) and [ROBOT-Rx](#) aim to replace many pharmacists. [Anesthesiologists](#) are on the chopping block. [VenusPro](#) is automating phlebotomy. With a worldwide shortage of nurses, Japan is leading the way in developing [robots that can assist nurses](#). Robots can also do things which are dangerous for humans ... like treating [Ebola patients](#). Even Doctors and Nurses are at risk. Doctors, especially lesser experienced, are at risk of being displaced by technology.

IBM's Watson—the same machine that beat Ken Jennings at Jeopardy is learning to make diagnoses and treatment recommendations. Also doctors will face the continued acceleration of mobile healthcare apps that lessen the need for otherwise routine doctor visits. Most consumers appear to be open to virtual doctor visits. While this still involves human doctors, who’s to say where those doctors might be located and how long before AI systems are available and accepted, at least for routine questions. There is a difference between doctors and nurses, and that’s ultimate *responsibility*.

Nurses may be replaced by smart systems such as health apps on smart-phones used by patients at home that monitor, collect, and send data directly to doctors (or automated systems). Also, with hospital or clinic environments, robotic delivery and monitoring systems will vastly increase the efficiency of human nurses. To see the future of robots in healthcare, look to Japan. With an aging population, a reluctance to bring in outside healthcare workers, and an obsession with robotics, they are on the bleeding edge of technology.

Technology also may reduce the demand for healthcare entirely. Driverless vehicles hold the potential to greatly reduce the number of automobile accidents which send victims to hospitals in

droves with serious injuries that require expensive surgeries. Also will real-time sensors, proactive healthcare may eliminate more expensive medical care by spotting problems early.

Ultimately patients will still demand human doctors and nurses because they want a human relationship. The question is, how many will be needed?

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## AUTONOMOUS NAVIGATION

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### DRONES

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Drones already play a huge role in the military, and are gaining ground in law enforcement circles. Over the next several years, they'll begin impacting the market for civilian applications as well — both professional and amateur. Remote-controlled aircraft have been around for decades. What makes drones different is their flight is computer-controlled — they're autonomous. Combining pre-programmed instructions and GPS/ optical navigation, drones literally fly themselves. Humans are not in the loop. Many hobbyists and entrepreneurs shy away from the term drone, which often conjures up armed, unmanned military aircraft. Instead they prefer the term Unmanned Aerial Vehicle (UAV), which carries fewer negative associations. I'll use these terms interchangeably, although I prefer *drone* — it sounds cooler!

Anybody can make or buy a drone. [DIY Drones](#) will even give you step by step instructions. Makers are pumping them out by the thousands. Kids play with them in their neighborhood or in nearby parks. Clubs are popping up like weeds.

The [Federal Aviation Administration](#) (FAA) is currently working on plans to incorporate drone aircraft into civilian airspace and *hopes* to have final regulations in place by the start of 2017. Regardless of regulatory efforts, the fact is that technology never sits still and will circumvent the regulatory process if need be — it's growing too fast to be ignored. Either the FAA puts out sensible regulations soon, or this highly democratized technology will spin out of control.

Applications for drones are nearly limitless. Here's a short list to stimulate your thinking:

- **Activism**, Animal activists use them in their fight to expose potential animal abuse.
- **Extreme Sports**, drones catch the action - mountain climbing, skiing, surfing, etc.
- **Home Surveillance**, UAV's can scan the perimeter and spot trouble early.
- **Journalism**, drones may be our new eyes in the sky— reporting on traffic, weather, etc.
- And, More → Agriculture, Real Estate, Search & Rescue, Wildlife Management, the list goes on & on.

Drones come in all shapes and sizes, from massive military machines to tiny insect size flying machines.

Here's a look at what's out there now for civilian use:

- [ArduPlane](#), huge variety of fixed wing aircraft.
- [Erle-Copter](#), mission → to build the next generation of artificial robotic brains.
- [Parrot Drones](#), AR, Bebop, and Mini-drones. Really cool stuff.

And many, many more. Just search for “Drone Buying Guide”

## DRIVERLESS VEHICLES

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As drones fly in the skies above, our cars and trucks will soon boot humans out of the driver's seat. Essentially, driverless vehicles might one day re-create our transportation to an on-demand system. In conjunction with a shift to greener technologies such as electric vehicles, going driverless solves many problems, such as cargo capacity, charging time, driving range, and parking lots.

Chunka Mui wrote an amazing series on how [Google's driverless car](#) will reshape several industries, ultimately worth trillions of dollars. Mui explores many implications from going driverless including second and third order effects. “I'll show just how far the ripples will reach for companies—not just car makers, but insurers, hospitals, parking lot operators and even governments and utilities.” Elaborating, he says that “The fact is that a driverless car would slash hundreds of billions of dollars of annual revenue, or even trillions, from all sorts of entities: car makers, parts suppliers, car dealers, auto insurers, auto financiers, body shops, emergency rooms, health insurers, medical practices, personal-injury lawyers, government taxing authorities, road-construction companies, parking-lot operators, oil companies, owners of urban real estate, and on and on and on.” Mui goes on and on about the effects — trust me it's very thought provoking — a must read. Driverless vehicles will send shockwaves throughout current industries, and more important will create lucrative business opportunities, including brand-new industries as yet unknown.

KPMG and the Center for Automotive Research published a 36 page report, [Self-driving cars: The next revolution \(pdf\)](#). The authors say we're “On the cusp of revolutionary change” They compile, organize, and deliver several scenarios as they put together pieces of the puzzle. I won't spoil it for you, just be sure to check out figure 7 on page 18, and figure 9 on page 23. Visioneers and investors will want to pay special attention to section 4, Implications for investment that addresses potential winners and losers as the entire automotive ecosystem is reshaped. Compare the KPMG report (2012) to EY's current report (2015), [Who's in the Driving Seat? \(pdf\)](#).

In addition, the driverless revolution extends far beyond commuting and recreational travel. Construction sites, mining operations, warehouses, and other work sites around the world will also kick humans out of the driver's seat — which means lost jobs for some and cost savings for others. The mining giant Rio Tinto deployed driverless vehicles in Western Australia, which saves as much as \$100,000 a year per truck.

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## WHAT CAN WE DO?

Although solutions are multi-faceted, three possible solutions are: Cultural, Legal, and Technological

*Cultural Solutions* seek the voluntary cooperation of the members of a society. Everyone might be encouraged to accept the unemployed as still valuable members of society and actively encourage and support them until they once again enter the domain of the employed.

*Legal Solutions* employ the power of the state to compel or prevent certain actions. Laws and regulations might be put in place forcing companies to employ the currently employed. Or automation might be taxed, with the proceeds redistributed to those displaced.

*Technological Solutions* exploit the power of technology to create bigger and better things. Truly unleashing the power of technology might just propel us into the future we dream of. Dull, dirty, and dangerous jobs would be done by machines, while humans move up the economic scale — unlocking the hidden creativity of the human mind.

As individuals, it's up to us to take action to find technology solutions since cultural solutions are slow to form and legal solutions nearly always cause unintended consequences. Besides, the law moves at glacial speed compared to technology. Plus lawmakers would rather blame the other side (and there's always someone to blame) — slowing the process down even more.

[Robots will take our jobs in 20 years!](#) Oh no ... what will we do? First of all, if robots create most of our products, who owns the robots? With the advent of open-source, chances are high that many of us won't just be unemployed, we'll be robot owners. Others may want to focus on design skills which are far from being automated and even then will require strong AI. Creativity and innovation are also skills that are far from being automated. It will pay to look at the road ahead. Skills will become obsolete. Jobs will be eliminated. But ... we're in a position to own the tools of production. [DIY](#) and [Open-Source](#) are paving the way to the future.

As technology tornadoes rip through industries, new opportunities will spring up from the wreckage. By their fast-paced nature, start-ups are best positioned to capitalize on change. And, naturally — investors will be needed to help fund start-ups, as well as adding fuel to other capital markets.

## WHO'S BEHIND IT ALL?

### TECHNOLOGY HEAVYWEIGHTS

Many large corporate players, as well as smaller pure plays, are involved in the *rise of the machines*. The Internet of Things (IoT) in particular will likely offer opportunities to both large and small. Some major players publicly committed to the IoT are [Bosch](#), [Cisco](#), [GE](#), and [IBM](#). Naturally, the four horsemen — Apple, Google, Facebook, and Microsoft are heavily involved as well. Autonomous systems are also largely dominated by technology heavyweights, although [DIY drones](#) shows there's room for both corporate and private interests. Many players in IoT are also players in the world of autonomous systems. 3D Printing on the other hand is quite fragmented. For decades, the industry (known as additive manufacturing) was a two horse race between 3D Systems (\$DDD) and Stratasys (\$SSYS). A new kid on the block that went public in February 2013 is ExOne (\$XONE). Other large companies involved in the field are HP (\$HPQ) and Xerox (\$XRX).

All three technologies; IoT, 3D Printing, Autonomous Systems span far and wide — with major implications for many industries. It's hard to describe the potential impact of these technologies, other than to say it will be game-changing.

### VISIONEERS

#### AROUND THE WORLD

The Internet of Things and Autonomous Systems are both dominated by giant corporations as both are dependent on the world of Big Data. However, with the creative energy of innovative upstarts — using open source technologies, hackers and hobbyists pose a formidable challenge to the giants that surround them. Take a quick glance at this [IoT landscape](#) infographic. Many smaller, innovative players dominate the field of consumer-level 3D printers. Leading small scale manufacturers/ retailers of printers are:

- [FormLabs](#) (Private)
- [Makerbot](#) (acquired by SSYS)
- [Solidoodle](#) (Private)

For an up to date lists of what 3D Printers are hot, check out Amazon's Best Sellers.

Hackers and hobbyists, also called makers, play a pivotal role in the Rise of the Machines. Let's take a closer look at what hackers and hobbyists are doing in America, Europe, and Asia.

## AMERICA

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America is frequently seen as the leader in all three areas related to the Rise of the Machines. Yet, while it's true that America is a world leader in technology, these technology shifts are global.

As for the Internet of Things and Autonomous Systems, American *multinationals* are leading the way. However, if you look at all a [partial list](#) of IoT companies around the world, it is noticeably a global effort. Americans clearly lead with the military use of drones — with such technology trickling down to the commercial sector. And the Google car is making inroads predominately in America. 3D Printing also is revving in high gear with three pure plays 3D Systems (\$DDD), ExOne (\$XONE), and (\$SSYS) in the United States; although SSYS maintains dual headquarters in Minneapolis, Minn. and Rehovot, Israel. 3D Printers are making their way into numerous retail outlets as well, which will be the ultimate test — will the masses embrace home 3D printers?

New York City seems to be one of hotbeds of innovation when it comes to 3D printing, and the world of Smart Things. The city's community is vibrant and full of energy. Numerous conferences and expos are held in the city, and it is home to many leading companies.

## EUROPE

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Europe is not exactly what you'd call a hotbed of innovation, or at least applied innovation. Yet, they too will connect with the Internet of Things in a big way, especially with those factors unique to Europe. Think about the [extensive railroad system](#) spread out across the continent. With machine-to-machine (M2M) technology, the entire system can become much more efficient.

The [Internet of Things Council](#) asks the question "... what will really happen when things, homes and cities become smart?" and forecasts what will happen when smart objects surround us. All the European auto manufacturers are aiming to offer driver assistance and ultimately driverless vehicles. As for 3D printing, [Europe is gaining ground](#), and in some ways surpassing the United States.

[iMakr](#) in London claims to be the world's largest 3D Printer store. [EnvisionTec](#) is in Germany and [Ultimaker](#) is based in the Netherlands. On the high-end, [EOS](#) manufactures industrial grade 3D (or shall I say additive manufacturing) machines.

It should be interesting to see what comes out of Europe. [Paris fashion shows](#), [3D printed houses](#) in Amsterdam, and world class German engineering may help Europe kick start new levels of innovation. It remains to be seen whether or not Europe will be able to shake their image as not being as innovative and competitive as America and Asia. Will the region be able to tap into the pools of creative talent within the diversity that makes up Europe?

Asian companies are strong players in the manufacturing sector, and the region is embracing the next generation of automation at unprecedented speed. Large conglomerates are using IoT to streamline operations and 3D printing is also taking off in Asia, especially China which printed 10 homes in only one day last year.

Asian companies must focus on ecosystems and platforms — especially developers. Plus they need to give attention to business models and in this fast-paced world, speed is of the essence. China is ramping up its production of drones and India is also working full speed to develop its own line of unmanned aerial vehicles. South Korea is certainly in the mix as well. The fact is Asia is developing a lot of technology once seen as the province of the West.

Driverless cars will soon become reality in Asian cities and will dramatically transform the art of urban planning. The Singapore-MIT Alliance for Research and Technology (SMART) and the National University of Singapore (NUS) are actively working on driverless vehicles. So is China, India, Korea ... the list goes on and on.

3D Printing may severely impact Asia because of its massive population. With billions in the region, a large percentage of jobs are clearly threatened in the move to automated manufacturing. But manufacturing changes are just one possible repercussion of 3D printing. If/ when 3D printing catches on with the masses in China, the government is likely to impose new regulations and tighter internet controls. People might be regulated as to what they're allowed to 3D print. Overall, innovation is alive and well in most parts of Asia.

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## SCIENTISTS, ENGINEERS, HACKERS, HOBBYISTS

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### SCIENTISTS/ENGINEERS

University and corporate scientists and engineers around the world are key to making discoveries that power innovation. Combined with human creativity and ingenuity, supercomputers, which may soon be commonplace, are helping create next generation materials and methods of making the impossible possible. The Rise of the Machines is all about making machines smart. Intelligent machines will change our world forever. And, it will be the world's scientists and engineers that create the breakthroughs that make it happen.

[Graphene](#) is strong, light-weight, flexible and conductive. It's tougher than diamonds and 300 times harder than steel. Plus it conducts electricity better than copper wire. Imagine the possibilities of 3D printing with Graphene. Products would be incredibly strong, and flexible. And, electronics might get embedded in just about everything, which of course makes the Internet of Things that much more powerful.

Artificial Intelligence (AI) is paramount to robotics. Smarter, more intelligent robots will not only help create next generation products, they'll help create even more intelligent robots. In addition to purely artificial intelligence, many efforts are also underway to merge man and machine. Synthetic biology and electronic circuits may even merge into one super-science.

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## HACKERS AND HOBBYISTS

The Rise of the Machines encompasses several technologies, and no one entity or even a small number of entities will drive all of the change. Large corporations, with their massive financial and human resources will drive much of the change, and so will independent spirits. Innovations aimed at consumers are natural territory for *makers* in that they're one and the same. It's been said that necessity is the mother of all invention. Who better to drive innovation than those closest to the problem. All three areas discussed; Internet of Things, Autonomous Systems, and 3D Printing feature prominently in the consumer marketplace where hackers and hobbyists rule. As I've mentioned before, while money may arise from their creations, *makers* are more concerned with creating kick-ass products. Sure, some will go on to create sizeable companies and hopefully they'll stick to their roots by creating more innovative and even disruptive products.

A perfect storm is brewing within the Rise of the Machines. The Internet of Things, 3D printing, and Autonomous Systems are being driven by cheap electronics — Arduino, Raspberry Pi, etc., social networking, open-source hardware/software, and the fuel that adds to the fire — crowdfunding.

Makers engage in engineering-oriented pursuits such as electronics, robotics, and 3-D printing. Hundreds of [Hackerspaces](#) (also called [Makerspaces](#) or [Fab labs](#), or [TechShops](#) ) are popping up all over the world. Here are some maps of the world pinpointing hackerspaces: [Fab Labs Map](#), [List of Hackerspaces](#), and [MakerMap](#).

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## GOVERNMENTS

Governments all around the world will be impacted by the Rise of the Machines and are involved in its future. IoT will help to revolutionize the infrastructure underlying each nation's success. Airports, Highways, and Railroads will all be impacted as real-time sensors are embedded in building materials. On the other hand, the technology will also be used by governments around the world to keep tabs on citizens as well as spy on outsiders. Autonomous Systems is the most visible component, as military drones take over the air, land, and sea. War will never be the same as technologically advanced nations are able to use robotic machines in place of soldiers on the battlefield. U.S. President Barrack Obama even mentioned 3D Printing in his 2013 State of the Union Address. In his address, Obama mentioned plans to create 15 technology hubs in an effort to re-tool America and create jobs. Within the U.S., the National Additive Manufacturing

Innovation Institute (NAMII) is focusing on accelerating additive manufacturing technologies in the manufacturing sector to increase output and create an adaptive, leading workforce. [America Makes](#) was founded on the NAMII initiative.

In the beginning, Arpanet was created in 1969 by DARPA — a U.S. Government agency. From those humble beginnings sprang today's internet. Now Pandora's Box is open and governments around the world are wrestling with reining in control of this digital beast. But it gets worse (for governments), the internet is crossing from the digital domain into physical reality. Augmented reality is giving rise to [little brother](#) that may at times run counter to big brother's agenda. Then, there's the issue of 3D Printing's capabilities. A [gun's](#) already been printed, and the U.S. government (and others) went ballistic. What will be next? Drugs? Check, we talked about that earlier. The only limit seems to be our imagination.

## RIPPLE EFFECTS?

The Internet of Things, 3D printing, and Autonomous Systems will change the world as we know it. These technologies are spinning around and around — picking up speed. It's like the movie *Perfect Storm* where storm systems from different areas collide into one super-storm — with devastating effect.

### **The Rise of the Machines will change the way we work:**

Without humans there is no economy. Consider this:

- A person with a toolbox is more valuable than a person without one.
- A person with a computer is more valuable than a person without one.
- A person with a robot is more valuable than a person without one.

Automation does not happen simply for the sake of automation. It's intended to benefit people.

We need to stop looking at only what automation will eliminate and ask what will it create?

### **It will change the way we consume:**

- Green is *in*; sustainability is now an everyday buzzword.
- On-demand. More and more products will be created on-demand. No more waiting days and weeks for delivery.
- Personalized. Future products will be more and more customized. Sure, standard products will be around for a long time, but the option to escape the one-size-fits-all mentality will rapidly spread across industries.
- Smart. We already have so-called Smart-Phones. Tomorrow's devices really will be smart and often, as with the IoT, will be self-regulating.

**And, as the Rise of the Machines rips apart industries, it will affect the way we invest.**

Emerging technologies are revolutionizing the way businesses run, with huge impacts on current business models. Most notable are the shifts towards open-source and crowd-funding. Open source software and now hardware are fueling the maker movement. Sure, most maker products fare poorly in comparison to refined, corporate products. But, that's changing. Look at [FORM 1](#) (An affordable, professional 3D printer), [Oculus Rift](#) (next-generation virtual reality headset), [OUYA](#) (Open Source Gaming Console), and [3Doodler](#) (a pen that can draw in the air). All of these started as Kickstarter projects, and they look awesome.

Below I'll explore the industry implications and ripple effects related to the Rise of the Machines. Keep in mind though that the most powerful business and investment themes will be those that cross boundaries. Solitary storms run out of energy in short-order, while storm systems that feed off the energy of each other are much more powerful and may even culminate into the perfect storm.

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#### WINNERS / LOSERS

As a society, we tend to overestimate and underestimate the potential changes of new technologies. In the near term we overestimate the power of change. We fall for media hype that the world is about to change overnight. After the hype fades, we give up. Then we go about our daily lives, completely underestimating the long term potential. Then suddenly we wake up in a different world where the rules changed. Nations suffer economically, Industries desperately attempt to hold on to the status quo, Companies cling to old, obsolete business models, and workers are laid off — either from company's attempts to downsize their way to success or from companies going bankrupt.

How will IoT, 3D Printing, and Autonomous Systems affect Nations, Industries, Companies, and Individuals?

#### NATIONS

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Entire nations will be affected by what's been called the next industrial revolution. Most impacted may be nations that are highly dependent on exports of finished goods to other nations. These include Brazil, China, France, Germany, India, Japan, Mexico, Malaysia, and South Korea. For up-to-date information, check out:

- [OECD](#)
- [World Trade Statistics](#)

3D Printing will change the world of logistics and transportation.

Developing countries may find 3D printing to be an absolute game-changer, allowing it to create products at much lower cost.

Inequality and *capitalism* may evolve as consumers gain access to more and more of the *means of production*. The question is, is what we're experiencing a [3D Printing Revolution](#) that will disrupt the status quo?

## INDUSTRIES / COMPANIES

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Major change may not occur in 5 years, but look ahead 10, 15, or even 20 years and landscapes will be obliterated. Look at the internet as an example. The dot-com boom didn't change the world overnight. But it did lay waste to entire industries over the next 10 or 15 years. Take 1995 to 2010 as an example. Then look at the book, movie, and music industries. Amazon lit a fire under book retailers — driving most of them to the brink of extinction. Borders was driven to bankruptcy. Book-A-Million (\$BAMM) is sliding into oblivion, and Barnes & Noble (\$BKS) is doing ok — but for how long? The movie industry also suffered casualties, especially by not capitalizing on the retail side of the house. When movies went digital, it was Amazon (\$AMZN), Apple (\$AAPL), and NetFlix (\$NFLX) who ran with the ball. Blockbuster got clobbered — ending in being acquired by Dish Network (\$DISH) in 2011. Music — wow, what can I say. The music industry stuck its head in the sand, and Apple (\$AAPL) scored a touchdown. To this day, the music industry continues to ignore the new world we live in.

Industries all across the board will be affected by IoT, 3D printing, and Autonomous Systems. Even more so if the *maker* movement becomes mainstream. Entire value chains will be destroyed and recreated. With the convergence of the next generation internet, DIY/ Maker/ Sharing technologies, and cryptocurrencies, the trend towards a decentralized society is accelerating. The first industrial revolution saw us a move from local, craft production, to mass production in factories with assembly lines. Economies of scale made products much cheaper.

Mass production of standardized product reign supreme today. 3D printing can't yet compete economically with traditional mass production for standardized products. However if you mix in customization or personalization into the process — 3D Printing with its lack of setup costs and inherent flexibility will rule the day. Naturally this will affect some industries (such as those below) sooner than others:

- Apparel/ Accessories/ Jewelry
- Consumer Electronics?
- Logistics (incl. import/export) / Transportation

Many companies will be hard hit when IoT makes otherwise mundane products ... *smart*! When 3D Printing hits the mainstream, companies standing on the railroad tracks will get run over. As Mark Twain said, "History doesn't repeat itself, but it does rhyme." This time will be no different. Time and time again, incumbents play it safe, discounting new technologies.

Then change happens *overnight!* Or so it seems. The problem is, companies ignore approaching storms until it's too late.

## INDIVIDUALS (CONSUMERS, WORKERS)

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Consumers as a whole are likely to benefit immensely from emerging technologies. Things will be *smart*. No longer will they be forced to live with standardized *good enough* products since they'll be customized. They'll be able to buy products that meet their exact needs. And, if those products aren't available — then they'll work with manufacturers or if need be, make the product themselves.

Workers on the other hand will be devastated. Manufacturing jobs will continue their downward slide into oblivion. During the industrial revolution, workers migrated from farms and towns into factories. Production was centralized. Now production will become decentralized and migration will occur — this time away from factories. Tailored and localized production once dominated the landscape. Pre-industrialized commerce would be considered in modern terms to be sustainable production.

3D Printing may very well herald in a new era of local, sustainable production as well — with a modern twist. But until this shift is completed, much pain and suffering will occur. This new era will require new skills, skills that aren't available in the masses. Education systems around the world are ill equipped to prepare workers to work in high-tech manufacturing. Of critical importance are design skills. 3D/ CAD software is an art and science behind an almost limitless world.

The industrial revolution ripped apart producer and consumer. Production was shifted to factories, jobs were created, and so were consumers. Although modern culture's conditioned us to think of ourselves as *employees* who need jobs, and consumers who need to pay the bills and buy things, the *maker* movement may be a shift in the other direction — making us both creator and consumer once again. In essence, the maker movement may help us unleash our inner, independent spirit.

Makers are staging huge conferences where tens of thousands of enthusiasts meet to learn, create, and share. [Maker Faire](#) hosts events all over the world. Additionally, the Maker Movement description states that "...The combination of ingenious makers and innovative technologies such as the Arduino microcontroller and personal 3D printing are driving innovation in manufacturing, engineering, industrial design, hardware technology and education..."

Humans are naturally curious. Just look at any 2, 3, 4, or 5 year old — before the education system stamps out individuality. They're curious and creative. They wonder what makes things work, and they take things apart. Most of the time they even **ATTEMPT** to put it back together.

Makers are humans who never gave into conformity, or ended up rediscovering their inner creativeness. While many makers are amateurs (hobbyists and enthusiasts), their innovativeness often produces compelling products that end up transforming some makers into visioneurs.

### **Why does it matter?**



Consumers for years were (and continue to be) frustrated with one-size fits all, **STANDARD** non-customized products. Now they're getting a taste of what's to come — and starting to get excited. Many services are popping up to offer consumers a chance at designing their own products — and then printed on large-scale 3D printers. Although **BRANDS** are still widely recognized and trusted, product-protections only go so far with consumers. Consumers who want more from a product will, in the maker age, change/modify the product until it meets their needs. Brand or no brand, anything that can be digitized will be pirated — even more so if legal roadblocks stand in the way of engaging consumer experiences.

Western countries are suffering huge jobs losses as manufacturing jobs are sucked into the black hole where jobs are obliterated. With automation penetrating more and more aspects of life, jobs are being wiped out. Technology, like a black hole, is swallowing entire industries. For progress to continue its' upward march; new jobs, new ways of creating wealth must be created. While industrial robots will certainly create some jobs, they're unlikely to create the large-scale opportunities to keep millions from suffering permanent loss of income. Before the first industrial revolution, most people worked from home and in small communities. Then came factories — sucking people away from the countryside, into the cities. Maybe something similar will occur in reverse, not necessarily away from cities though since cities exist for many reasons other than simply working.

To score big time, visioneurs and investors should look at the changing world of consumers, which drive the vast majority of spending. As the world changes, there will be unbelievable profit opportunities. So go out there and make it happen.



## WHAT'S HAPPENING?

Money is getting harder and harder to see. As more & more of it goes virtual; it'll only be blips on a screen, nothing but a *ghost in a machine*. For most of history our money was physical — stones, shells, gold, silver, etc.. Then we moved on to pieces of paper that were backed by commodities such as gold and silver. Of course, that wasn't enough — so we severed that relationship, backing money by the full faith and credit of governments. Over the past decades, paychecks and other earnings are increasingly *direct deposited* into bank accounts. Our statements don't come in the mail anymore ... they pop up on a screen.

We use cards instead of cash and even cards are disappearing as our mobile, Smartphones function as wallets. Banks used to be a primary source of funding for start-ups — usually through maxed out credit cards. Now startups look to the crowd as a source of start-up capital. And even money as we know it is being threatened by crypto-currencies not issued or backed by any central authority. It's the wild, wild west out there.

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### CROWD FUNDING

One significant revenue source for banks is loans, although much of the wind was knocked out of this market during the last recession. Yet, the market for capital is robust. Crowd-funding is dampening the need for bank loans as visioners use sites such as [Kickstarter](#) and [Indiegogo](#) to fund their projects. Globally, there are [many other crowd-funding sites](#) as well. Each of these entities pools the resources of the many to fund worthy projects and its gaining speed. Another funding source, increasingly common outside the U.S. is micro-loans, such as [Deki](#) and [Kiva](#).

At its most simplistic level, crowd funding is simply getting a crowd to help raise money for a cause, project, or really cool product. In a sense it's widening the circle of friends and family that traditionally backed early-stage startups financially. Today's economy incentivizes banks (at least in the U.S.) to not make loans and in doing so is accelerating the expansion of crowd-funding. In April 2012, the Jumpstart Our Business Startups (JOBS) Act was signed by President Obama in the United States. It's objective is to open the door for equity crowd funding as the

JOBS would allow ordinary (non-accredited) investors to buy shares in start-up ventures. Finally, in March 2015, the SEC announced a new set of rules implementing Title IV of the JOBS Act.

Some sites that follow the crowd-funding industry are [Crowd Fund Beat](#) and [Crowd Funding Insider](#).

Overall, crowd-funding is changing the way businesses get off the ground. For start-ups, the majority of funding comes from friends, family, and maybe friends of friends. These investments traditionally are made for emotional, not financial reasons. *Emotional Return on Investment* is a powerful incentive for personal investors and lenders. An ever expanding global social network is connecting people around the world in new ways. Stories are told not only in words, but in high definition video. You can feel the intensity or sincerity of those needing money to fulfill their dream.

Inside most of us is a desire to be part of creation. It makes us feel good when we help others; it gives us a feeling of power. In fact, this feeling is the basis for the sharing economy.

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#### E-MONEY

Mobilization is literally changing the way we live, work, and play. And more is on the horizon. Over the past 20 years, the internet and then smart phones digitized everything in its path. Yet some things move glacially. **MONEY** is quite monolithic by nature, and is deeply embedded in society; it doesn't change quickly. Nevertheless, even rigid systems change and money is no exception.

Traditional merchants familiar with cash, checks, and credit cards are hesitant to accept new forms of payment. Consumers also are reluctant to change. Money represents a powerful force in their lives and is a guarded treasure. Consumers and merchants seek both guarantees and protection against loss. Storing money in cash form is particularly hazardous since cash is anonymous. Therefore, the majority of money in modern societies is government-issued currency stored in government-sanctioned banks. Extracting cash may be done in-person at banks, although much of it is withdrawn from ATM machines. Most spending occurs electronically through direct account transfers or with debit/credit cards.

Most money, at least in developed countries, already exists electronically. Banks report balances to customers; who only see blobs of ink on paper, or in most cases — blips on an electronic screen. Transitioning to virtual wallets, such as those on Smart-Phones, is mostly a matter of trust. Smart-Phones already function as multi-purpose tools in the lives of millions. There's even a *flashlight* app, talk about a Swiss-army knife. Many of us use our phones for shopping, connecting with friends, and GPS for getting together.

In 2013, there was a big blowup about the NSA and spying on Americans. Privacy is certainly an issue, but most Americans will easily be swayed by convenience. Most likely, once the big banks

jump into the fray, consumers will suck money into their Smart-Phone wallets and move with the times. Apple Pay is already a huge success and others will follow in their footsteps. In privacy terms, there really isn't much difference between a credit card and a Smart-Phone wallet. Traditional cash will be with us for a long time, but checks and credit cards may become extinct.

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## BITCOIN/ CRYPTO-CASH

Bitcoin is different — it takes center stage in non-traditional, virtual currencies. Many attempts were made to create virtual currencies similar to cash. However, each failed in time; primarily because each depended on centralized servers — which were easily shut down. Then de-centralized, crypt-currencies came along with Bitcoin being the most notable. Therefore, when I talk about Bitcoin, by extension I mean all other decentralized crypto-currencies as well.

Bitcoin will be more disruptive. In the past, centralized virtual currencies were only relatively successful. An example is e-gold, which came into being in 1996, but was indicted by the U.S. Department of Justice in 2009 — thereby shutting the service down. Other systems include [E-dinar](#) based in the United Arab Emirates and [WebMoney](#) based in Russia. However, all centralized alternative money systems are vulnerable to governmental intervention in the name of preventing criminal activity, or on behalf of traditional systems (i.e. banks) that hate competition!

Harnessing the power of the internet, de-centralized systems are able to circumvent weaknesses that plague other, centralized alternatives. While there are several decentralized systems ([list of all cryptocurrencies](#)), I'll focus on [Bitcoin](#) since it's the most well-known system and even drew the attention of the FBI in the U.S., and the European Central Bank.

What makes Bitcoin special is that its' decentralized, and P2P, cryptographic properties make it virtually impossible for the state to stamp it out of existence. While not designed specifically to be anonymous, Bitcoin transactions become anonymous when paired with such technologies as TOR. Bitcoin offers the potential for *financial privacy*, Accounts cannot be frozen, and no *big brother* (3rd parties can't prevent or control transactions) which makes it ideal for transferring money internationally without any fees or restrictions. [Michael Parsons](#) posted a most interesting statement on twitter: "Bitcoin: > Money without Borders > Payments without Regulation > Currency without Government > Transfers without Banks."

What threatens to disrupt traditional money players, who for centuries maintained a privileged — dare I say exalted, position in societies around the world, is decentralized, cryptographic currencies. Untraceable digital cash is far more convenient than paper bills and coins, and is a far more dangerous concept for the established financial industry. I'll leave you with this quote on the power of money from Mayer Amschel Rothschild "Let me issue and control a nation's money and I care not who writes the laws."

## WHO'S BEHIND IT ALL?

### ENTRENCHED INTERESTS

It's pretty obvious that the entrenched interests in the financial sector are Banks, Payment Processors, and to a certain extent — Wall Street. U.S. Banks such as Bank of America (\$BAC), Citigroup (\$C), JP Morgan Chase (\$JPM), and Wells Fargo (\$WFC) certainly represent the incumbent class. Other banks around the world are also dominant players. As are payment processors such as Mastercard (\$MA), and Visa (\$V). Transfer companies such as Moneygram (\$MGI) and Western Union (\$WU) round out the player list.

Finance is the home turf for these players and any outside force such a Bitcoin represent a threat. Of course Bitcoin is and will continue to be downplayed. In highly developed countries, Bitcoin poses little risk to traditional finance players in developed markets in all but the most draconian scenarios. Emerging and frontier markets may pose a different situation. The Organization for Co-operation and Development (OECD) countries represent much of the so-called *developed* world, with a population of less than 1 ½ Billion in 2013. That leaves over 5 Billion people in the world outside the OECD.

Africa, and in particular [Kenya](#), offers fertile ground for Bitcoin with extensive mobile coverage, and widespread acceptance of mobile payment systems such as [M-Pesa](#). Much of Africa lacks key infrastructure, Kenya is no exception. Landlines are few and far between — especially outside urban areas. To adapt, Kenyans jumped straight into mobile technology for communication and commerce. M-Pesa is very popular in Kenya where more than 30 percent of the country's GDP now moves through the service.

What makes Bitcoin such a threat is that 1) it allows users to transfer money easily and instantly, for a fraction of the cost of those tied to the banking system and 2) It allows for anonymous and untrackable transactions where users can bypass fees imposed by banks, governments, and other entities. Keep an eye on [cities around the world](#) that are leading the adoption of Bitcoin.

### VISIONEERS

#### AMERICA

America is very much known for its being the Financial Capital of the World, and it places a major role in all three areas: Crowd-funding, E-Money, and Bitcoin. Two of the largest P2P lending platforms are [Lending Club](#) and [Prosper](#) — both based in San Francisco. Although much of the real action, from an entrepreneurial point of view, is Kickstarter and Indiegogo. Kickstarter is based in New York, while Indiegogo is on the other coast in San Francisco.

E-money is making headway. [Apple Pay](#) leads the pack, while [Google Wallet](#) struggles to make a significant dent in the market. Other competitors are out there aiming to stake a claim in the market. Right now the field is still open, but it won't be long before dominant players emerge. [PYMNTS](#) will keep you up-to-date on what's going on. Many consumers want mobile wallets, but payment apps struggle to gain traction due to limited merchant acceptance and inconsistent customer experience. Mobile wallets were divided into four categories: Tech Titans, Merchants, Card Associations, and Banks. It's almost as if on one side are the technology heavyweights and on the other side die-hard financial institutions. If enough merchants climb on board though, consumers will follow.

America is also the home of Silicon Valley, which is funding several Bitcoin based ventures. [Bitcoin Venture Capital](#) lists current funding rounds of various endeavors. [BitAngels](#) is "Focused on accelerating the digital currency eco-system." A lot of money is being poured into the world of Bitcoin.

Of course Bitcoin is in its early stages. Decentralization is just starting to spread its wings, but when it starts to fly — watch out, it will be a wild rollercoaster ride. Here's a glimpse at Bitcoin's [global](#) adoption.

## EUROPE

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Europe's P2P lending market is actually quite robust. The [European Crowdfunding Network](#) is "aimed at innovating, representing, promoting and protecting the European crowdfunding industry."

Kickstarter expanded to the UK, and the Nordic countries, but as of yet hasn't reached the mainland. One of the key reasons for Kickstarter's absence from mainland Europe is that governments are looking at imposing a tax on crowdfunding websites like Kickstarter. [Ulule](#) is an up and coming alternative, but needs to go a long way to catch up with the stature of Kickstarter. The most popular site outside the US seems to be Indiegogo, but there are many country specific sites, as well as [Self Starter](#), the source code to create your own funding site.

Everyone wants smartphone users to adopt mobile wallets — banks, credit card companies, tech giants, etc., so they can get a piece of the action. Consumers are resisting though because of security concerns, lack of retail support, and ease of transactions. Just like America, mobile payments are struggling to make inroads. A quick search on the web quickly identifies the mobile payments market as highly fragmented.

One of the biggest problems with Bitcoin is exchanging it for fiat currency, such as the euro and requires permission from authorities. In many areas, the mining and use of Bitcoin may even be a crime. Here's the [legality of bitcoin by country](#).

Asia is slightly behind in crowd-funding, although microfinance is significant in rural areas. [Crowdfunding Asia](#) aims to help fund startups and growth initiatives in Asian countries

Many crowd-funding sites are up and running in Asia. However, it looks like each is quite limited to their respective geographies. [China](#), [India](#), [Japan](#), [Korea](#), and the list goes on & on. Hindering a truly regional crowd-funding platform in Asia are several factors: close government oversight, as well as different tax and regulatory structures for each country.

Mobile payments are poised to be huge in Asia. China and India each boast nearly a billion mobile phone users. Add in the rest of Asia to reach at least a third of the planet's mobile phone users. Many regions in Africa and Southeast Asia are largely cash based with most unbanked. As these countries move into the modern age, they may go straight to mobile payments, skipping credit cards altogether.

Bitcoin's founder is [Satoshi Nakamoto](#) is said to be from Japan, but we really don't know. We do know though that Bitcoin is actively [traded around the world](#).

The fact is that Bitcoin is global, limited only by the ability to connect to the internet. Governments around the world clearly demonstrate their power to shut down sites that facilitate currency conversion. If might makes right, then those with enough firepower can shut down any site on planet earth. Yet, Bitcoin itself is decentralized and is nearly impossible to shut down unless the internet itself is attacked. If that happens, then we've got big problems, I mean really big!

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### HACKERS, HOBBYISTS, ENTHUSIASTS

Bitcoin was allegedly created by a hacker — Satoshi Nakatomo. I say allegedly because no one really knows who he (or she) is, or maybe it's a group. With that said, Bitcoin represents the perfect playground for hackers, hobbyists, and technology enthusiasts the world over. First, it represents a form of payment that is totally unregulated by any centralized authorities — save one, math! Algorithms dictate the rules that govern Bitcoin's (and remember that's a generic term I'm using for all decentralized, crypto-currencies) capabilities. Money without borders opens up the entire planet, or at least those plugged into the net. Need help on a project from someone on the other side of the planet? No problem, Bitcoin is a universal currency.

Bitcoin lives up to the libertarian spirit of freedom, helping to unlock the potential energy within creators around the world. But wait, there's more — Bitcoin's twin, [Namecoin](#). "...in the same way that Bitcoin is a decentralised currency that cannot be shut down; Namecoin is the basis for a decentralised domain name system (DNS), i.e. web URLs, which could put a stop to Internet censorship."

Hackers, hobbyists, and other *makers* will truly appreciate Bitcoin as a currency created, run and controlled by the people — not by governments. One of the ethos's of the maker community is to retool consumer culture. Makers feel it's time we rejoin the two halves once split apart — producer and consumer. While cypherpunks, and hacktivists aim to free the world's information, makers are busy working on open source hardware and software, building innovative products with CNC machines, 3D printers, and other 21<sup>st</sup> century tools.

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## GOVERNMENTS

Governments play a huge role in Crowd-funding, E-money, and Bitcoin. Money represents power and that's something governments take seriously! The problem with Bitcoin (and again, by extension all decentralized currencies) is that if Bitcoin becomes accepted as money, the government's absolute control of money will end. Banks will fail, and an entire system of power and control will cease to exist. State-backed currencies perform several functions that are simply not seen by the masses — yet they still exist and serve a purpose. 1) Facilitates the imposition of fees, fines, and taxes, 2) Fixes the value of money, 3) Empowers the State, 4) Controls dependents of the State, and 5) Simplifies the tracking of all goods and services.

Underlying the power of money is trust. Every U.S. “Federal Reserve Note” (aka Dollar) states “THIS NOTE IS LEGAL TENDER FOR ALL DEBTS, PUBLIC AND PRIVATE” Notice the word Debts. Sellers are not required to accept U.S. Dollars as payment. The fact that they do is what keeps the system going. We trust that others will accept our money — otherwise it ceases to exist.

Bitcoin is so scary that the State of California actually sent a cease and desist letter to the Bitcoin Foundation. Just search on “FinCEN Bitcoin” to get a better understanding of how the U.S. sees Bitcoin. For a European view, search “European Banking Authority Bitcoin“ Asia is a little more complicated. You can check out [Coin News Asia](#) for a selected country list. The problem is, and governments know it, Bitcoin helps individuals develop and consume products without government permission, oversight, or even awareness. And, that scares a lot of people. It assumes humans are evil by nature and if not closely watched will be up to no good. Governments can easily attack Bitcoin exchanges, but they can't actually attack Bitcoin itself without making an ugly, embarrassing mess.

# RIPPLE EFFECTS

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## INDUSTRY IMPLICATIONS/ RIPPLE EFFECTS

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### WINNERS / LOSERS

As a society, we tend to overestimate and underestimate the potential changes of new technologies. In the near term we overestimate the power of change. We fall for media hype that the world is about to change *overnight*. After the hype fades, we give up. Then we go about our daily lives, completely underestimating the long term potential. Then suddenly we wake up in a different world where the rules changed. Nations suffer economically, Industries desperately attempt to hold on to the status quo, Companies cling to old, obsolete business models, and workers are laid off — either from company's attempts to downsize their way to success or from companies going bankrupt.

How will Cyber-Finance affect Nations, Industries, Companies, and Individuals?

### NATIONS

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More active crowd-funding platforms energize the start-up ecosystem. It's no wonder that crowd-funding is so pervasive in the United States, which is very entrepreneurial by nature. America is known for visioneurs. Silicon Valley typifies the American spirit. Without active crowd-funding, nations will be less entrepreneurial and in turn will suffer as more and more jobs are automated with less and less employment. Basic income or other redistributionist policies may be put in place, however, the collective energy of thousands, and even millions will be lost as individuals are left underproductive.

Going cashless with mobile payments will only be disruptive to the point of foregoing cash entirely. Traditional digital payments are traceable and both the buyer and seller are known entities. Governments will use this information for tax and other purposes. And, criminals will use this information to do their dirty deeds.

We already know all about traditional systems, so let's talk about non-traditional forms of payment. Currency-denominated systems (i.e. Dollar-Denominated) are only slightly different from traditional forms of payment. Mobile Payments are a perfect example of this system. Instead of paying with a physical object such as a check or a card, payment is transferred digitally from one account to another. It still uses the same traditional banking institutions and is highly centralized. Audit trails are firmly in place. The buyer and seller are verified and are subject to investigation or chargebacks in the event of any errors — whether intentional or accidental.

To recap, the future of money will most undoubtedly be digital. Smart phones will simply replace cards — nothing revolutionary. Banks, like the telecoms did with VoIP, will simply co-opt the players on the field and it will be business as usual.

Digital currencies on the other hand hold the potential to be an extinction level event for banks and other financial institutions which lay at the foundation of countries around the world. A widely adopted, decentralized currency would absolutely undermine a country's ability to finance its endeavors. The power to tax would be greatly diminished, as would the ability to finance governmental operations. Redistribution systems would fail in that those with money become harder and harder to track down and compelled to pay.

Of all the potential changes within Cyber-Finance, Bitcoin is clearly the most disruptive of all. In fact, for most it's unthinkable! The U.S. Dollar is the world's reserve currency. It's King, like the British Pound before it. Not in my lifetime is a common retort when anyone mentions the mere possibility of the U.S. Dollar losing its' luster. But, let's play what if?

- What if Bitcoin gained traction in other countries?
- What if Bitcoin established a beachhead in international transactions?
- What if crypto-currencies displaced state-backed currencies in certain markets?

Bitcoin is:

- Frictionless
- Anonymous (or at least holds the potential to be)
- Cryptographically secure
- Open Source
- Free/ Public

You get the picture, and may even be able to think the unthinkable.

Acvanzant on Reddit made several excellent points in [\*Dear Pro-Regulation or Pro-Government Bitcoin Users\*](#): "Bitcoin's entire purpose is to free the transfer of money from all limitations" The post mentions a white paper that says "A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution." Succinctly Acvanzant states that "For hundreds of years now governments have had absolute sovereignty over their currencies and money. This is their most significant power. It is what enables most of everything they do. Chinese bureaucrats, African despots and Saudi princes are no different than the American political elite in this regard. Most of what they manage to get done, using the government available to them, is enabled by this power over money. History suggests that power such as this is never given up voluntarily."

Crowd-funding platforms offer an alternative to banks and other financial firms. Therefore banks are on top of the list to feel the pain of lost revenue. Angel investors and to some extent, even venture capital firms will be impacted. Many other industries and companies will feel threatened indirectly as creative energy is released from thousands and thousands of visioneers who now are able to easily tap into funding to bring their ideas to life. A quick glance at Kickstarter and Indiegogo gives you an idea of the millions and perhaps billions of dollars at stake. The role of traditional manufacturers and retailers is changing. Startups are able to tap into the power of the crowd and the cloud to manufacture and distribute products directly to the consumer.

As for cashless, E-Money; banks may take a hit on the front-end as technology giants create and manage apps for consumer payments. Businesses built on the cash economy may be hit hard as cash is used less and less. And checks ... what can I say, they will die forever along with any business that generates revenues from check processing. E-money may also foretell the disappearance of paper receipts. Along with smart-phone, tablets, and touch screens — the ordering process for consumers will be radically changed.

Knowledge product purchases are a much easier domain into which to introduce virtual currencies since they are closed systems. **REAL WORLD** purchases encompass a much wider, more diverse landscape and will take longer to adopt digital currencies

At first, virtual currencies emerged within tightly confined systems — typically virtual games. Linden Dollars (Second Life) and WOW Gold (World of Warcraft) are examples of such virtual **MONEY**. On a slightly larger scale, Amazon Coins and Facebook Credits are fashioned to be used to pay for games, apps, and related merchandise. Overall, these types of virtual currencies are used to buy knowledge goods and services as opposed to **PHYSICAL, REAL WORLD** Goods and Services.

Bitcoin (in all its connotations) is a competing currency. It will impact the gatekeepers. With Bitcoin, there are no gatekeepers — financial institutions would be devastated. Naturally, the *state* holds immense power, and Bitcoin will not rip apart the status quo overnight. Like water, it will slowly erode away the barriers that stand in the way of two entities, whether they are commercial or private, completing voluntary transactions. States closely oversee domestic transactions more easily than international transactions, and this is likely to be one of Bitcoin's finest achievements. In an increasingly digital world, Bitcoin can easily facilitate sales of goods and services without any outside corporate or government influence.

Few merchants accepted Bitcoin a couple of years ago. Now the list is getting larger and larger. [AirBitz](#) lists a growing number of Bitcoin friendly businesses.

Trust in the stable value of Bitcoin is paramount and right now it's too volatile to be accepted by the mainstream. Bitcoin may be thought of as a hybrid - part commodity and part currency. And, with Bitcoin, you don't need to know or trust the Sender. Transactions are irrevocable.

Bitcoin is an excellent litmus test as to whether or not an organization is absolutely committed to freedom and liberty. By accepting Bitcoins, they're following through with actions and as we all know actions speak louder than words. Accepting Bitcoin signals that the organization — whether a merchant or a cause, is serious about protecting customers from potential identity theft, political targeting, or even criminal actions related to purchasing or donating to disfavored organizations. After all, it's the *state* that declares what is legal and illegal. And, many states carry this to the extreme. Merely speaking out against the *state* may land one in jail. Many countries in the world also adhere to religious law, whereby believing in the wrong God or no God at all will be punished severely. Plus many cultural norms are backed up by the state. Wearing the wrong clothes or failing to abide by other social customs again against the law and punished — often severely. Many laws are also selectively enforced, which may be why they're left on the books. Most will escape prosecution for breaking such laws, yet if one becomes disfavored by the state, then those laws will be judiciously applied. Not accepting Bitcoin leaves open the possibility of the organization being a honeypot that in some way intercepts or monitors computer data.

Bitcoin was designed to work outside the banking system. In some ways it's like the internet itself which was designed to be robust with an emphasis on survivability — maybe not quite to the extent of the myth of being able to survive a nuclear attack, but very resilient nonetheless. To be clear, Bitcoin itself is extremely solid — hacks, malicious code, and other attacks mostly affect exchanges and individual wallets.

#### INDIVIDUALS (CONSUMERS, WORKERS)

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Bitcoin (and other crypto-currencies) are vehemently opposed by those who feel individual freedom and liberties are not inherent rights. The so-called *common good* somehow trumps individual rights.

In the [The Anonymity Fantasy](#) David Wolman writes "..., like it or not, anonymity and civil society don't mix." And that "Without break-the-glass access to digital records, law enforcement doesn't really work ..." Pretty extreme if you ask me. Law Enforcement is only as good as the laws created. The State, that is governments around the world, is notorious for creating otherwise victimless crimes. Consider gambling or even worse certain types of consensual, personal behavior based on moral grounds

Bitcoin is nearly impossible to trace, or tax, or confiscate. It is completely decentralized with no trusted parties. As such it prevents identity theft, enhances privacy, and prevents criminals from draining your entire bank account. Multiple wallets can be created and when dealing with a

merchant, only one is exposed during the transaction. Merchants won't be able to later go into your account and make additional charges.

Bitcoin may also help protect against inflation, once such currencies eliminate violent valuation swings. According to Warren Buffet — since 1965 the U.S. Dollar lost 86% of its value. Bitcoins are a scarce resource that no government or corporation can control. Which is a reason why so many hate Bitcoin? Bitcoins operated under a condition of fixed supply. There's zero risk of a Central Bank printing millions of Bitcoins, thereby diluting existing users.

What can you [buy with Bitcoins](#)?

Actually you can buy a lot with Bitcoins. You can buy Pizza, stay in Hotels, gamble in Casinos; the list goes on and on. Plus, you can use it directly in restaurants that accept it or split the check by transferring Bitcoin to a friend — just like credit cards and cash. On the darker side, depending on your point of view, you can go to the Silk Road and buy various *illegal* goods.

Bitcoin serves a noble purpose. Anyone interested in freedom or liberty may very well be exposing themselves by using traditional payment systems. For example, if someone uses a credit card to buy a product or donates to a cause that criticizes the *state*, or otherwise runs afoul of what the *state* wants, then that transaction is stored forever in a searchable database. Later, without the consent or even knowledge, that data may be used in efforts to target individuals. Think of someone who supports pro-animal rights. If they purchase articles, books, videos, or other products with a credit card, then that data may be summarily archived into a database. Later, they may be targeted for selective prosecution if they attend an activist rally. Others may be released, whereas certain individuals may be labeled as extremists based on their past purchases — duly recorded and archived until the end of time. Worse yet, in some areas, the state — especially when the political winds shift, may engage in a witch hunt for those it labels radical or extremists.

Another problem with credit cards is that they expose the purchaser to identity theft. Think about it, when you buy something you provide your: (1) a name and (2) shipping/ and or billing address that must match the address on file. Additionally, many organizations also require a phone number and email address. Oh, and don't forget, your IP address will also be tied to that purchase. That's a lot of information that's stored in one place — a centralized database that will in all likelihood be tied in with other databases. All that data is a tempting target. With Bitcoins, no identity information is required — problem solved.

In the age of Facebook, Google, and Twitter; excessive amounts of data are collected. Adding payment information definitively adds personal information to the equation, unless Bitcoin, or perhaps lesser known crypto-currencies, is used. Organizations should be openly accepting bitcoins because they are subject to only minimal transaction fees, incur no risk of fraud/chargebacks and protect their customers from identity theft and persecution by the *state*. But, organizations will not feel compelled to add Bitcoin payment until consumers demand it.

## GAME CHANGER?

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Decentralized currencies such as Bitcoin are very powerful game changers. Imagine a world where bank accounts (wallets) were encrypted and stored on a piece of paper, on PCs, or in the cloud. States would not be able to peek into accounts, nor could they be frozen or seized. In a world of crypto-currencies, currency is stored and transferred at the individual's discretion. No longer will individuals need *permission* to transfer money or be subjected to high fees. No more being a suspected *criminal* for holding onto too much cash or depositing too much cash in the bank. Legal tender laws prop up the existing system, yet do little to control transactions on the internet or international transactions. As societies become more and more digitized, Bitcoin and related currencies will fill a gaping hole in the financial system.

Cash is cumbersome and ill-fitted to the modern age where transactions increasingly occur online. Will cash go away? ... Not likely, at least anytime soon. Cash is very useful for face-to-face transactions, particularly smaller purchases. Will national currencies go away? Again, not likely in the foreseeable future. Conventional currencies are deeply entrenched into cultures and economic systems for them to go away anytime soon. However, in time — as people migrate to all digital systems, attitudes may change, opening up new possibilities. A common criticism of Bitcoin is that the market remains volatile, yet the fact is Bitcoin is barely out of the starting blocks. Bitcoin's growing pains, and volatility will dampen over time as more merchants/ users accept the currency.

Furthermore, Bitcoin wallets (actually files) can be hidden anywhere, on SD cards, USB drives, in the cloud, on slips of paper, or even in our minds (a photographic memory helps). Under these circumstances, you can easily see that confiscation is all but impossible.

State currencies were once backed by commodities or precious metals such as gold or silver. Then gold and silver were confiscated and now state currencies are back by no intrinsic value — only the faith and credit of government. What makes "Federal Reserve Notes" so compelling is legal tender laws. As an example, U.S. currency is legal tender to expunge *debts*. The law doesn't mandate acceptance of such currency if not debt related. What drives acceptance is trust; trust that others will accept the currency in exchange for goods and services. The U.S. Dollar was elevated to the position of the so-called world reserve currency and maintains such a title because of one thing — liquidity! Trillions of *dollars* flow through the Foreign Exchange Market (FOREX) every day. Many commodities are priced in U.S. Dollars. Ultimately it's trust that matters — trust that the U.S. Dollar will hold its value and not be inflated away — or at least not more than other currencies.

Bitcoin may prove instrumental in the sharing economy. Monetary and financial overlords (aka regulators) around the world regularly stifle competition by attacking the banking side of the equation. It's just so easy. Credit cards leave a trail of bread crumbs for regulators to follow. So do traditional mobile payment systems. Bitcoins are an entirely different matter. First of all, each

*coin* can be split into smaller parts for small transactions. Second, it's encrypted, and Third, Bitcoin is decentralized, using peers to validate transactions. No central actors are involved — hence no bread crumb trail. For digital products, the trail will be faint indeed — barely perceptible. As will transactions involving services. Only physical products *delivered* will leave a trail.

Goods such a software or digital designs are global products. Acquiring the products legitimately is cumbersome. If an American consumer wants to buy a digital design from say China, India, or even Africa, many banks need to be involved in order to exchange currencies. Bitcoin solves this problem. Add in regulations, tariffs and taxes; and the transaction is either never attempted or driven underground into black markets. Bitcoin doesn't solve these problems — it just does an end run around them, directly connecting buyer and seller — cutting out all middlemen.

Illegal and dangerous products will be sold for Bitcoin, just as they are for cash. Instead of adding layers and layers of digital red tape, governments should target the activities that cause harm. If illegal drugs are being sold to children, then by all means go after the drug dealers — just don't throw a net over the entire neighborhood to catch a few bad apples. The same goes with guns. If guns are used to commit crimes, then go after those criminals — not everyone who owns a gun. In the end, this means law enforcement needs to go back to the difficult task of investigation where questions are asked and leads are tracked down. Many governments don't want to do this; it's much easier to create a police state. With all citizens monitored, cracking down on what's illegal is easier. Then again, is it? In the future, many criminal activities will move to the digital world. In a cashless society, robbery won't take place face-to-face. Digital cash won't stop stealing; it will just shift it to the digital realm.

As I look at it, Bitcoin alone is unlikely to topple the financial system of today. However, if you add in other crypt-currencies — there is a real potential for change. And, that change will not come easy. After all, we're talking about trillions of dollars and deeply entrenched ways of looking at money. Like VoIP, Bitcoin may be embraced by legacy financial institutions with a twist though; Bitcoin's nature will give their profit margins a severe haircut. Businesses that take credit cards, and consumers will be the beneficiary — at the expense of banks/ credit card companies. The biggest obstacle confronting payment systems will be government regulation. Businesses may be forced to shun alternative currencies — which may be outlawed. In response, more and more commerce may go underground. Combined with other trends such as the *maker* movement (think 3D printing) will make it easier for businesses and consumers to avoid government interference. Cyber-Finance is an unstoppable force with one key weak spot ... the internet itself. However, since the internet is deeply woven into the lives of just about everybody in the developed world, shutting the internet down is not an option. The same transport system (the net) that shuffles information around the world will be used to shuffle money too. In time, crypto-currencies may upset the apple cart of traditional finance — putting control in the hands of ordinary people. Then again, maybe it won't happen that way. In either case, the very concept of crypt-currencies scares a lot of people in high places and that in, and of itself, is change.



“Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world ...” — Albert Einstein

Through the power of the internet it’s easier than ever to flashback to the past or to soar into the future. Our past is guided by historians and our future is envisioned by futurists. Study the past diligently, look for clues. Mark Twain said that “History doesn't repeat itself, but it does rhyme.” Look at what scientists, engineers, and the hackers of the world are doing today. Read science fiction, study futurist speculations. Then use your imagination to envision scenarios. What if? Then what? If this, then that. These are power questions that will help you mine the past and stockpile future scenarios. No one can foresee the future. But we can *anticipate* the future.

The world didn’t just suddenly materialize! Game Changers, even if they look like **INSTANT** change, percolate over time and then snap — they change the world, or at least that’s the way we see them in the history books. Take some time, map out the various factors for whatever market you’re looking at and ask why? You’ll see the world in a whole new light.

### Mining the Past

“Those who cannot remember the past are condemned to repeat it.” — George Santayana

Future predictions are hit or miss but hindsight is 20/20! So many of us fail to learn from the past; after all, it’s *history*. The fact is, although technology changes at blinding speed, human nature moves at a snail’s pace. The same psychologically that drove us a 1,000 years ago, still drives us today. So, study the past if you want to get a better idea of what the future holds, after all humans are the ones creating the future as we know it.

Many driving forces are behind change — and that’s the key to understanding the markets. Every day we’re blasted with a fire hose of information. Looking at the big picture will help you keep everything in perspective.

Think of the market as a series of waves. The key is to understand what’s causing these waves. Securities are driven by the perception of what the future will or will not bring in the form of profits. In short, the level of knowledge about what’s really going on (the real-world) is what drives prices. So, the question to ask is: what’s going on in the real-world? That’s why some

investors are more successful than others — they get to the heart of the matter ... what's really going on and then gauge when that knowledge will be SEEN by others, thereby driving prices up or down. The same applies to visioneurs; it just takes longer to materialize.

Here's something to think about — the History of Energy:

**INTENSIFICATION: SUBSEQUENT TECHNOLOGIES WERE MORE COMPLEX.**

- Wood – easy to cut, process.
- Coal – mining is a much more difficult process.
- Oil – drilling is even more difficult.
- Nuclear – wow, splitting the atom – now that's what I call complex.

For some background, check out the [history of energy](#), specifically from the point of the Industrial Revolution until today:

“While scientists were starting to understand electricity around 1800, the first commercially viable use of electricity came when Edison invented electric lighting in 1878, as a replacement to gas powered lamps.”

Often technology sweeps over the world and we think — wow, that's really cool, it's going to change life as we know it. But, in reality, technology develops over time and is rarely an **OVERNIGHT** success. Success is a process and requires the right amount of LLC: Land (Land, Space, other Natural Resources), Labor (Physical, Intellectual), and Capital (Money, Equipment i.e. machines/tools, etc.). These three factors determine whether companies, industries, and even whole nations become successful or road kill — pushed aside on the road to the future. Think about the Industrial Revolution. Why did it start in Great Britain?

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#### PAST / FUTURE INSIGHTS

It's important to look at *themes*. Take a journey into the past — for example the 1800's & 1900's and look for Political, Economic, Societal, and Technological events and their corresponding ripple effects on industry and company fortunes.

Looking at the past gives us key insights on how and in what directions the future may materialize. Consider how things were:

- Made
- Bought
- Sold

Studying history will open your mind. Yes we live in a high-speed, hyper-connected, modern society — but markets are driven by human psychology, and people resist change — especially forced change. Here's an example to contemplate, the [battle between live musicians in movie theaters vs. recorded music](#)

Throughout the 1800's massive change was thrust upon the world. Then in the 1900's change accelerated even faster. And, as we sail through the 2000's, I'm absolutely amazed at the accelerating speed of technological change. Let's break it down:

Power, Transportation, and Communication were revolutionized in the 1800's.

- Power – Steam power increased dramatically in the early 1800's only to be augmented/eclipsed by electricity in the late 1800's
- Transportation – Steamboats and Locomotives drastically altered the landscape – cutting travel times by a factor of 10 or more.
- Communications – Both the Telegraph and the Telephone were invented in the 1800's and spread like wildfire in the coming decades.

For comparison, let's look at Power, Transportation, and Communication in the 1900's.

- Power – Electricity soon took over from steam, which opened the doorway to an alternate reality barely conceivable by previous generations.
- Transportation – While railroads still exist, primarily for cargo, it's the automobile that took center stage in the 1900's. And, now we fly through the air in airplanes.
- Communications – While the Telegraph fell to the wayside, the Telephone marched onward. Over the coming decades, voice communications were revolutionized by fiber-optics, satellites, and digitization (VoIP).

So, what's in store for the 2000's. Time will tell. In the meantime, here are a few thinking points.

- Power – It looks like power is destined to be cleaner and more efficient in the 2000's. Alternative energies are likely to become mainstream and the creation, use, and disposal of products may be radically different.
- Transportation – Naturally the automobile is here to stay (any thoughts on a replacement?). But, who will do the driving? Driver-less automobiles may be the future and the trend towards cleaner, more efficient fuel(s) is likely to continue.
- Communications – The future of communications is mysterious indeed. In my opinion, today's Internet only scratches the surface of what is to come. I'll leave this one to future discussions.

The History of Booms and Busts is long and drawn out, but here's a quick snapshot of the past two centuries major declines ... preceded by booms of course.

### **1800's**

1819 - 1st major financial crisis to hit the United States. It caused widespread foreclosures, bank failures, unemployment, and a slump in agriculture and manufacturing.

1837 - After fever pitched speculation, the bubble burst. Banks stopped payment in gold and silver. A five-year depression followed.

1847 - The Technology (Railroad) boom ended.

1893 - High tariffs and currency issues caused The Cleveland Ordeal

### **Early 1900's**

1907 - Bear market after September 1906 peak.

1920 - Another Technology (Automobile) Bubble ends.

1929 - The grand-daddy of them all – The Great Depression

### **Late 1900's**

1973 - Bears shook world markets; particularly the U.S. & U.K.

Factors included the collapse of the Bretton Woods system and the oil crisis.

1981 - Stock market knocked down, but the real story was the collapse (after a huge run-up) in commodity prices for almost 20 years.

1989 - Japanese property prices sky-rocketed. The Nikkei more than tripled, and then utterly collapsed into an eternal bear pit for over 20 years.

1997 The Asian financial crisis raised fears of a worldwide economic meltdown. The Thai baht collapsed and the crisis spread to other parts of SE Asia, particularly Indonesia and South Korea.

### **2000's**

2000 - Yet another Technology Bubble pops as .Com's fade fast and the NASDAQ plunges.

2007 - SSEC (China) plunged on rumors of the gov't raising interest rates or taxes.

2008 - Sub-prime was supposedly *contained* the U.S. market topped in Dec. 2007 & crashed in the Fall of 2008. The 2008 financial crash was said to be the worst since the Great Depression.

As you can see, history is full of market run-ups and subsequent crashes. Investors (and anyone who really wants to understand what's really going on), need to study history because no matter what the talking heads on television say or what politicians promise, markets will continue to run-up and they will most definitely crash again in the future.

Here's a brainstorming tool that I call: FlashBack/ FastForward that you might use to anticipate change. If we look back over the past, say 10 years, we can map out what change occurred and then use that to anticipate changes over the next 10 years. Just to be clear, prediction is not the goal — *anticipation* is the goal. In fact, you may want to ANTICIPATE several scenarios and then look for INDICATORS to help you identify whether or not such scenarios are on track.

Let's look at the [Computer Sector from 2002 to 2012](#) as an example.

**FlashBack** to 2002:

In 2002, a typical computer was built with:

- Celeron or Pentium 4 processor
- 256 or 512 Megabytes of Memory
- 30 or 60 Gigabyte Hard Drive
- CD-RW/DVDROM Drive
- CRT's being replaced by LCD Displays
- Wi-Fi emerging as STANDARD 802.11 b (11 mbps)
- [SuperComputers](#) (2000)
  - $10^{13}$  Flops
  - Cost per GigaFlop = \$1,000

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Now look at the world in 2012, a typical computer might be built with:

- CeleronD, Atom, or i7 processor (@ least 20x faster)
- 4 or 8 Gigabytes of Memory
- 500 Gigabyte to 1, maybe a 2 Terabyte Hard Drive
- 16, 32, and maybe even a 64 GB SD card
- LCD Displays STANDARD Ultra-high resolution
- Wi-Fi STANDARD 802.11 n (up to 450 mbps)
- SuperComputers (2010)
  - $10^{15}$  Flops
  - Cost per GigaFlop = \$1.80

And two new forms of computing are now mainstream — Smart-phones and Tablets! In fact, Tablets now outsell PC's. Plus, the Apple Watch is now on millions of wrists around the world. For a more detailed look, check out the [history of computers 2000's +](#)

## FastForward to 2025:

While it's hard to **KNOW** exactly what the future holds, there are signposts to guide us to possible futures. First, *mobile devices* are certain to become the new standard. Second, **WIRELESS** will be all around us. And, if Moore's Law holds, computers (who knows if they will even use that term in ten years) will be anywhere from 100x to 1,000x more powerful. Hard drives may even be [100 TB by 2025](#). Of course we'll need all that space for 8K+ and holographic video.

Looking back 15 years we can see that the world was turned upside down. The Internet changed the way we work, shop, communicate, and even the way we think. Information is now at our fingertips. Whole classes of activities are now done on our own computers — from home, work, or even sitting on the beach. We can trade stocks, go shopping, and talk to our friends and family without even getting out of bed if we don't want to.

The growth in computing and communications is breathtaking. Now imagine what will happen in the next 15 years! Not just in computing either. Imagine the advances in Genomics, Robotics, AI, and Nanotechnology. We are on the precipice of great change. The question to ask yourself is how can I capitalize on this change? To help answer that question, check out this awesome interview with Andy Kessler on the [Future of Silicon Valley](#). Also, check out futurist sites such as [Kurzweil – Accelerating Intelligence](#), and [H+ Magazine](#). While their prognostications are sometimes way out there ... it will definitely show you some wild possibilities that just might come true and if they do, trillions of dollars are at stake.

## Who's building the Future?

“The future is already here — it's just not very evenly distributed.” — William Gibson

Different areas of the world move at different speeds. Each area possesses strengths and weaknesses. The future doesn't just happen — it's created. If you're really serious about understanding the future, look at who's creating it — Scientists and engineers; hackers and makers. Jump on the net and check out universities, corporate endeavors, hackerspaces, fab labs, maker faires, and tech shops. These are the people who are creating the future. Stroll through memory lane: The Sony Walkman looks like prehistoric dinosaur. Polaroid what! Film, what's that? Look it up, it's in the history books. Book? Wait a minute, what's a book? Phones that hung on the walls — yikes! Smartphones that fit in the palm of our hand replaced all those functions and more. It *absorbed* calendars, flashlights, maps, video games, and the list goes on and on.

[Imagining the Internet](#) is a site with forecasts, so is the [Singularity Hub](#) which offers up a plethora of stories about how the future will evolve. Both are about potentials, not absolutes. It

only shows possibilities. It's up to visioneurs, investors, and thinkers to dig deep into the possibilities; compare that with reality, and anticipate various scenarios. Only then will we be able to capitalize on our insights.

### Imagine the possibilities

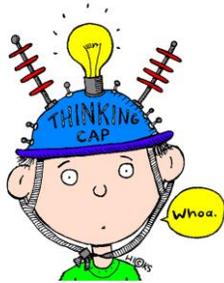


To really supercharge your success, use your imagination. Let it run wild. Then bring it back to reality. In the end, consumers will only buy products that solve a real problem or fulfill an emotional need? In fact, the product may already exist. As William Gibson said — “The future is here. It’s just not widely distributed yet.”

Look at America. For the longest time it was considered to be the *greatest country in the world* (well, at least the *spirit* lives on). We built great big things, turned science-fiction into reality, explored the universe, cured diseases, and had the world’s leading economy. We reached for the stars and put a man on the moon. Then something changed. Instead of producing things, America became a consumer of things. For the past 30 or 40 years, the U.S. became the world largest consumer and debtor. Although America is still a leader in many areas, its’ edge is getting dull. All is not lost though; America still has spirit and from this spirit may come a new wave of exponential growth. Indie capitalism is surging ahead, creating new business models as the world turns green.

[Failed predictions](#) also serve as fuel for your imagination. Why did it fail? Was it timing? Or was it destined to fail in that it didn’t solve a real problem or satisfy an emotional need? Science fiction is full of failed scenarios. In the Jetsons, food came in a pill. Just pop it in your mouth for a quick breakfast! Yet we still eat regular food — why? Maybe the concept is simply destined to fail because people like to eat food. They enjoy the *taste* and *mouthfeel* of food. Also culture surrounds food. We meet for lunch and get together for dinner. Part of celebrating life events is food ... lots of it!

“Since we have no choice but to be swept along by [this] vast technological surge, we might as well learn to surf.” — Michael Soule



“You take the blue pill, the story ends, you wake up in your bed, and believe whatever you want to believe. You take the red pill, you stay in wonderland and I show you how deep the rabbit hole goes. Remember, all I’m offering you is the truth, nothing more.” — The Matrix

### Identity – Rock Solid Foundation

Thinking for yourself isn’t easy. We’re constantly bombarded by others, attempting to persuade us to their point of view. And, it starts early. As soon as we’re born, we attempt to assert ourselves, but our parents do their best to *mold* us. Then come teachers, who do their best to squeeze the individuality out of us. We’re taught to conform. Entire societies are built on conformity. Religion is taught at an early age for a reason. Advertising’s very essence is to persuade us that their product(s) will solve our problems, make us cool, make us happy, and most of all — take away the pain, even if just for a little while.

However, resistance to conformity is highly rewarded. Those who think for themselves surge past average, don’t settle for second best, and rise to the top of their profession. In the wise words of Tess McGill from the movie *Working Girl*, "... I'm not gonna spend the rest of my life working my ass off and getting nowhere just because I followed rules that I had nothing to do with setting up ..."

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### WHO ARE YOU?

Who are you? Each one of us is labeled — many times over, by others and more importantly by our inner self. Husband, Wife, Father, Mother, Son, Daughter, Brother, Sister. Family is important, but don’t let being born into a family define the real you. I’m an employee of megacorp; job titles are extremely important to our identity. As is being a *member* of a certain religious organization, or civic group. Political affiliations are often fiercely defended. In America, Republican and Democrats are separate breeds that seldom intermix. At work it’s typically a taboo conversation topic. Why do identify so intensely with groups?

As human beings, we're quick to ascribe our identities to our circumstances, image, behaviors, and to our position in life. Opinions of others are critical to our self-image. It's said that "Sticks and stones may break my bones, but names will never hurt me." But how true is this really? Being criticized is one of our greatest fears and that's what limits most of our potential. Instead of searching out our inner selves, we cloak ourselves in identities — most of which are defined by others. You are not your circumstances, or what you do. Roles don't need to define you, and neither do your beliefs or affiliations.

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#### WHAT DO YOU BELIEVE?

Who we are on the inside is shaped by our beliefs. Some beliefs lock us into fixed possibilities, while others expand our potential. Some identities are negative, others are positive. By loosening your grip on the concept of identity, you open yourself to more possibility and to achieving amazing results.

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#### WINNER OR LOSER

Being a winner or a loser is a choice.

In football, there are winners and losers. For every 1st place, there's a 2nd place. In nature there are those who win (survive) and those who lose (die). Some dominate and control, while others submit. Face it, there are winners and there are losers — that's life. As a human you can choose to be a winner by stepping into the arena of life. Even if you don't come out on top, you stepped into the arena to compete — and that means everything.

"It is not the critic who counts, not the man who points out how the strong man stumbled, or where the doer of deeds could have done better. The credit belongs to the man who is actually in the arena; whose face is marred by the dust and sweat and blood; who strives valiantly; who errs and comes short again and again; who knows the great enthusiasms, the great devotions and spends himself in a worthy cause; who at the best, knows in the end the triumph of high achievement, and who, at worst, if he fails, at least fails while daring greatly; so that his place shall never be with those cold and timid souls who know neither victory nor defeat."

— Theodore Roosevelt

The decision is yours and yours alone. You can go for it and be a winner (even those who fail in the attempt end up winning — maybe not a trophy, or prize, but they *didn't lose*, because they know that they did their best). Failing isn't something to be ashamed of — being a loser is something to be ashamed of. Losers are the ones who don't even bother getting off the bench — they don't even try. What's it going to be? Are you going to be a winner or are you going to just sit on the bench and be a loser?

"There are those who see an opportunity and then there are those who seize an opportunity."

— Joanie Warren

Visioneurs and investors see opportunity all the time and are uniquely positioned to seize that opportunity. Visioneurs must prove their concept, attract a team, and acquire financial resources — just to get started. Most business professionals must sell their ideas to their boss and whoever else the political winds blow through the door. Not investors — the market is open every day. It's up to the investor to decide what to do. You don't have to put all of your energy into developing, selling, delivering, and servicing a product — and hope that consumers want it, and investors will fund it.

The market is already there, the wheels of capitalism are already spinning, and investors can jump in anytime. One Big Win is all it takes! Well maybe not one, but a few big winners may surprisingly outweigh a much larger number of small losses. You can't win them all. But you don't have to. You can prosper even when most of your investments fail — so long as your successes are successful enough. One big win can justify the inevitable parade of failed experiments. As Michael Mauboussin points out in his investment *book* [More Than You Know](#), "the frequency of correctness does not matter; it is the magnitude of correctness that matters." Many of the most successful investors incur lots of losses — it's just that they keep those losses small, and let their winners run. The key is to understand money (or position) and risk management.

As a professional investor, your number one goal needs to be preserving your capital — if you run out, then you're out of business! Remember the movie *Wall Street* Where Gordon Gekko says that "Greed is right. Greed works. Greed clarifies, cuts through, and captures the essence of the evolutionary spirit. Greed, in all of its forms -- greed for life, for money, for love, knowledge -- has marked the upward surge of mankind".

Greed is a word thrown around a lot, usually by those jealous of another's success. It essentially means wanting more than someone else thinks you should have! Successful investors don't just throw money at the market and reap their rewards. They research, analyze, and make critical decisions about what to buy/sell, how much, and most importantly — when? In other words - they work hard! Win or Lose — it's your choice. Just don't be one of the cold and timid souls who know neither victory nor defeat.

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#### MONEY IS WICKED!

Yell Fire! ... and people will run screaming. Say "money" and people shut up tighter than a frog's rear-end, or they start bad-mouthing it. The fact is, people have been brainwashed into believing money is evil, it's wicked. Well I'm here to say that's only half right. Money is not evil — but it is *wicked*. Money is wicked, as in [Wicked!](#) ... excellent, cool, out of this world.

What is Money? While there are an endless variety of definitions as to what money is, here are a few descriptions to contemplate:

- Money is like a battery — it stores up human energy. It's what we voluntarily choose to invest our life energy for!
- Money is everywhere. It's pieces of paper and dots on a computer screen. It's valuable because of productivity & creation.
- Money is a means of exchange that facilitates investment — voluntarily. "So long as men live together on earth ... their only substitute, if they abandon money, is the muzzle of a gun." — Ayn Rand

The bottom line is that money is a tool humans use to create, grow, and prosper. Take away money and we're back to being cave dwellers. Why is money so wicked? Think about it, what else can people use to exchange his or her time and energy? No one says it better than Ayn Rand in *Atlas Shrugged*: "Until and unless you discover that money is the root of all good, you ask for your own destruction. When money ceases to become the means by which men deal with one another, then men become the tools of other men. Blood, whips and guns - or dollars. Take your choice--there is no other." Money gives us:

- The freedom to concentrate on what we do best. Through specialization we are able to maximize our productivity.
- A measure of value that we can use to measure the worth of goods and services, including a person's labor.
- The ability to store our productive energy in a safe place to be used later to exchange for the efforts of others.
- A voluntary means of exchange. Money by its very nature is voluntary and depends on faith in others ability to create products and services we want.
- A measure of material success. Money is an excellent scoreboard, just look at the [Forbes list of Billionaires](#) for a quick update on the biggest winners in business.

How you think about money is extremely important and will in large part determine your level of material success. If you want to live as a Tibetan monk, then money really doesn't matter, but if you want to live in the modern world, then money is important — really important. We've all heard the Christian mantra: "Money is the root of all evil" or more correctly that "The love of money is the root of all evil" but have you ever stopped to think about the Root of Money? Money opens up the floodgates of opportunity to live life on your terms. It pays the bills, it buys all of the goodies in life, and earning it gives you a feeling of accomplishment. Let's look at it another way. Money represents your energy (physical and mental).

Who has a legitimate claim on your energy? Your next door neighbor? Block? City? State? Country? Or maybe even the World? Where does it end? And how do they get their claim — by forcing you at gun point (although in the modern world we use laws, but in the end these laws are backed up by police with guns). Should you be denied a big screen television, a nice car, or even a tropical vacation because others don't pay their own way in this world? What about eating at a restaurant or buying nice clothes? Should you be denied what others call luxury because others produce so little, or are forced at gun point to live in squalor (as in many third world

countries)? Just when do their problems become your problem? Economist Thomas Sowell states it eloquently “Despite a voluminous and often fervent literature on ‘income distribution,’ the cold fact is that most income is not distributed: It is earned.”

Money is such a positive force, that you should do whatever you need to do to earn as much as you possibly can — within the bounds of what’s right. So what’s right? Nearly everything except for lying, cheating, and stealing — and that includes getting the government to do it for you. Other than that, put aside other people’s laziness and resentment against achievement — that’s their problem, not yours.

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## RICH AND POOR

What does it mean to be *rich*? When you hear the word rich — always ask ... compared to what? Most of us that live in the United States are obscenely rich compared to those living in most African nations. Does that make us feel *rich* in a time when the economy is struggling, our investments stalling, and we're fearful of losing our jobs? I would say — No! But what if we confine the discussion to the United States? Some people are rich and some are poor — true. The problem is that most people confuse relative poverty with absolute poverty. The rich are getting richer, but so are the poor. Sure, it's at a slower rate than the rich, but their standard of living is still improving measured in absolute terms. People need to stop pretending that wealth is a fixed pie (never big enough), and the only consideration is distribution.

What does it mean to be *rich*? What does it mean to be *poor*? Rich is whatever a person says it is. To some people \$10,000 might be rich. For others it might be \$100,000, \$1 million, \$100 million, \$1 billion, or it may be just having more money than other people. Poor is also whatever a person says it is. It's a state of mind. Abject poverty still exists where people do without food, water, and shelter — but not for most people in the modern world. What does exist is a feeling of not having enough. The only people with a genuine excuse are those struck down by tragic injury or illness — they're not poor, they're victims. Wealth is the result of productivity — of adding value in a way that society rewards.

As a symbol of wealth, money quantifies:

- Skill
- Effort  
and
- Accomplishment

Question: Is it right to be massively, some would call obscenely, rich?

Answer: Is it right to be massively productive? To create great value by doing that which society rewards? Is it right to pursue your dreams? To work hard? To work long hours? To take risk? My answer is *yes!* As long as the money wasn't stolen — either by being a criminal or somehow

getting the government to steal the money for you. Money is earned (without resorting to either force or fraud) when value is exchanged through the sales of goods and services — and yes, investing is a service — a very valuable service.

Rich people are rich because they create value (or they received money from others who previously created value). To earn their riches, the wealthy think differently from those who don't acquire riches. They don't necessarily work harder, but they do work *smarter*.

Here are some thoughts on how the rich and poor think:

- Rich people choose to take risks, whereas poor people seem to need a guarantee.
- Rich people play the money game to win; poor people play not to lose.
- Rich people are committed to doing what it takes to be rich, while poor people want/ dream/ hope to be rich.
- Rich people choose to get paid based on *results*, poor people trade time for money.
- Rich people take responsibility and know blaming other people isn't going to solve their problem. Poor people do whatever and if it doesn't work out — they find a scapegoat.

Let's look at an analogy:

<b>Being rich means being a winner:</b>	
Sports	Life
<ul style="list-style-type: none"> <li>• Swinging the bat as hard as you can.</li> <li>• Giving 100% in practice.</li> <li>• Working with weights in the off-season.</li> </ul>	<ul style="list-style-type: none"> <li>• Finding your talent/ what you enjoy &amp; are good at.</li> <li>• Working hard (including thinking) "Thinking is the hardest work there is, which is the probable reason why so few engage in it." — Henry Ford.</li> <li>• Reading/ Studying/ Lifelong learning</li> <li>• Saving/ investing instead of spending everything.</li> </ul>
<b>Being poor is for losers:</b>	
Sports	Life
<ul style="list-style-type: none"> <li>• Swinging the bat half-heartedly.</li> <li>• Whining about the pitcher.</li> <li>• Not working hard in practice.</li> <li>• Taking it easy in the off-season.</li> </ul>	<ul style="list-style-type: none"> <li>• Doing just enough to get by.</li> <li>• Watching mindless TV.</li> <li>• Gossiping/ complaining.</li> <li>• Not reading/ studying.</li> <li>• Bad habits, i.e. compulsive behavior.</li> <li>• Spending too much &amp; going into debt.</li> </ul>

To be rich is not only right; it's the embodiment of success. Wealth belongs to those who create value. To create value and not be rewarded is demotivating and dehumanizing. Rich people take risks and demand a piece of the pie. The rich are paid on results — not necessarily on the amount of time invested in a project. "It is not the strongest of the species that survives ... nor the most intelligent, but the one most responsive to change." — Charles Darwin

So what's stopping you from doing what you want, from doing what you love, from really going for it?

What's the score?

To be successful in business, or any endeavor for that matter, you need to know what game you're playing, the rules of the game, and focus on the score of the game. In business that means *sales*, *profits*, and for investors — *price*, are the bottom line. Fortunately, business scores — just like sports — are posted for all to see. But that doesn't mean the talking heads, in print or on TV, won't make every effort to paint the picture they want you to see. Although some business professionals (I use that term loosely) resort to telling outright lies, the more common practice is to lie with statistics. In doing so, they can claim the high moral ground by technically telling the truth. An example is the word *average*. Of course the recipient isn't told which method of average is being used: Mean, Median, or Mode. Here's a book that you might want to read on the subject of lying with statistics: [How to Lie with Statistics](#), by Darrell Huff. Also beware of misleading terms such as *pro-forma* (aka *pretend*) *anticipated*, and of course *projected*. Without solid explanations, these numbers are pointless. Bottom line, you need to do your own research and dig deep to discover what's really going on.

*Key questions to ask are:*

### **Who should we believe?**

First of all, beware of fortune tellers. No one really knows the future. Industry projections are just that — projections. Today's industry + Assumption = Forecast! Next, those with real insight on the stock market don't publish newsletters and they certainly don't show up on TV.

"If stock market experts were so expert, they would be buying stock, not selling advice." — Norman R. Augustine

### **What should we believe?**

Believe in yourself. Believe in markets and prices. There's simply no better gauge to assess the performance of stocks, bond, commodities, or currencies. Millions of investors from all over the world lay down trillions of dollars every day. *Follow the money*. Where is venture capital going? Crowd-funding is an excellent resource for *visioneurs* because every project is a scoreboard. What Kickstarter or Indiegogo projects are actually funded, and for how much?

“There are three types of lies: lies, damn lies, and statistics.” — Benjamin Disraeli

When it comes to analysts, economists, and talking heads on television, the truth is nowhere to be found. The problem is everybody is biased to some extent. Worst of all, many subscribe to hidden agendas, or outright propaganda. Misinformation is everywhere — so be careful out there.

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## BIAS

Merriam-Webster defines [bias](#) as “bent, tendency ... an inclination of temperament or outlook; especially: a personal and sometimes unreasoned judgment.” Notice the words temperament, personal, and unreasoned. The fact is that humans operate on emotions most of the time and that alone is reason for bias. Stating facts and applying logic is not the norm. However, in business, facts are what matters and the more you look for bias, the more you’ll see, and be prepared for. Some indicators of bias are extreme statements, usually with all or nothing connotations. Verbiage that oversimplifies or generalizes also signals bias which tends to present a limited view.

When looking at bias, keep in mind:

- Who is the person making the statement?
- How does this person make money?
- What is this person incentivized to do?
- Who’s paying for the information platform? (Magazine, newspaper, television, etc.)
- What do they stand to gain?

As a rule of thumb — if the argument appeals more to emotions than to logic, then it’s significantly biased.

BusinessWeek ran an article, [What Good Are Economists Anyway?](#) Shortly after what we now know was the absolute low point for the economy and the markets. “To be fair, economists can’t be expected to predict the future with any kind of exactitude. The world is simply too complicated for that. But collectively, they should be able to warn of dangers ahead. And when disaster strikes, they ought to know what to do.” People pay attention to economists because of their authority, their expertise, and their bold claims that they know how to manage the economy to prevent economic damage. Yet time and time again, economists are wrong. Economists ought to be independent thinkers. However, a lot of what they do is geared toward specific agendas related to politics or Wall Street.

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## HIDDEN AGENDA

“If you want to predict how people will behave, just look at their incentives” — Charlie Munger

Take a hard look at the world and you’ll see the potential for hidden agendas. Everywhere there’s conflict, hidden agendas are not far behind. Us vs. Them! What’s crazy is that both parties may be oblivious to the real agenda. Think about resources to be controlled and it will open your eyes. Some examples are corporate land grabs (control dwindling sources of minerals or water), FUD (fear, uncertainty, doubt — aimed at competitors), and for the \_\_\_ (fill in the blank – children, environment, etc.) ... each one of these is a prime example of a hidden agenda, especially the last one. Any time you here that something needs to be done for the children, environment, or ... the common good, watch out, there’s a huge hidden agenda.

I’m not into conspiracy theories, but if you look at such theories and back track through history, you’ll see that vested interests create systems which aim to self-perpetuate. Think of the tax code of any nation. Why is it so complicated? Because of the incentives (or loopholes) for certain entities that will fight hard to keep such incentives. Small \_\_\_\_\_ (fill in the blank) need to be protected, yet in reality multi-national corporations are the ones receiving the most benefit.

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## PROPAGANDA / MISINFORMATION

“Opinions have vested interests just as men have.” — Samuel Butler

Propaganda, or its’ milder cousin — misinformation, is routinely seen in the business world. Modern economies are so intertwined with politics; it almost seems like one in the same. Companies routinely lie and conditioning (aka brainwashing) is business as usual — although nicer words are used — advertising, investor relations, public relations, etc.

History is littered with companies lying. Enron, Tyco, and WorldCom are some of the big names in history. In the 2008 financial crash, many big name banks also told a lot of tall tales why they needed a bailout. Whatever happed to all the banks *toxic* assets? Legislation to force companies to disclose material information is passed on a regular basis — and it might work for a while. But ... sneaky corporations invent ways to dodge the rules. Bottom line, to avoid being burned, investors need to do their homework and always assume that information is not truthful.

Management isn’t paid to tell the truth, it’s paid to sugar coat the results or at least pin the blame on some external factor. You’d think that accounting is pretty straightforward. Yet the very concept of GAAP (Generally *Accepted* Accounting Principles) is more of a set of guidelines than a rule book. For ages (and especially since the invention of stock options) corporate executives invented creative ways to pump up sales or kick expenses down the road. Playing hide and seek with debt is also a common theme among the sneaky.

Market information rushes at us like a wide-open *fire hose* and many investors feel the need to **OPEN-WIDE** in the futile effort to **GET MORE INFORMATION** than the other guy. Well, it doesn't work that way. First of all, information isn't worth much — it's distilled information (insights) that are worth their weight in gold. And, secondly, most of the so-called information is actually propaganda cleverly disguised as news. Every news source is biased to some degree. Look at Fox, it leans to the **RIGHT** politically and offers up lots of commentary catered to its' targeted audience. The same goes for MSNBC, except it caters to the **LEFT**.

Although the market tells its' story through *price* and *volume*, that's boring. TV needs to spice it up to make it entertaining. And, think about all of the so-called **EXPERTS** that are hauled in front of the TV for all of us to see. Why are they offering their opinion, or valuable insights? Remember, everyone has an *agenda*! My gut tells me that many financial news **GUESTS** give their opinion in an effort to enhance their reputation so that they can sell more newsletters, or raise more money for their hedge/mutual fund. Then again, others may be using the spotlight to push their investments deeper into the plus column by getting others to buy or sell certain securities.

“To be nobody but yourself in a world which is doing its best, night and day, to make you everybody else means to fight the hardest battle which any human being can fight; and never stop fighting.” – e.e. cummings

Looking at a world full of bias and hidden agendas isn't easy, yet it is a powerful tool in understanding the market's real story. As an experiment, look at financial news from known **BIASED** sources. Then look for the hidden agenda. It may be political, or financial, then again it may simply be somebody looking for an ego boost. Look hard enough and you'll start seeing the news in a whole new light — much like the way Neo (in the movie *The Matrix*) sees the world as people who are [part of the system](#) walk around him.

Why is it that so many exaggerate problems, or scare people, in order to get support for their cause? Look at any newspaper, magazine, blog, or TV and screaming headlines will jump out at you! The fact is — drama sells.

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#### WHY DO YOU BELIEVE WHAT YOU BELIEVE?

What we believe is in large part due to our environment. Where we're born. What family raises us. What schools we go to. This in part introduces us to others, who become our friends. Our place in society is a result of where we start out. Of course, there are exceptions; however it's an uphill battle to unlock our minds as adults.

Take the Pie Fallacy as an example. In [How to Make Wealth](#), Paul Graham points out that “A surprising number of people retain from childhood the idea that there is a fixed amount of wealth in the world. There is, in any normal family, a fixed amount of money at any moment. But that's not the same thing.” The fixed pie mentality implies that there's only so much to go around and

if others are rich, then many more must be poor. And in a sense, that's true — in relative terms. There will always be a bottom 20% — that's simple math. However, that bottom 20% can be very well off and is if you compare them to life a 100 or 200 years ago. "What leads people astray here is the abstraction of money. Money is not wealth. It's just something we use to move wealth around. So although there may be, in certain specific moments (like your family, this month) a fixed amount of money available to investment with other people for things you want, there is not a fixed amount of wealth in the world. You can make more wealth. Wealth has been getting created and destroyed (but on balance, created) for all of human history." Graham goes on to give examples of how wealth is created by amateurs, kids, craftsmen, and he expressively points out how programmers create wealth.

Graham goes on to say that "In industrialized countries, people belong to one institution or another at least until their twenties. After all those years you get used to the idea of belonging to a group of people who all get up in the morning, go to some set of buildings, and do things that they do not, ordinarily, enjoy doing. Belonging to such a group becomes part of your identity: name, age, role, institution..." Do you see the common thread — it's our environment and our willingness to identify with that identity. Graham also explains why working harder in a job is not the answer — contrary to what many of us were told in high school; get good grades, go to college, and then get a good job with a solid company.

## Challenging Beliefs

Look at a key nonconformist — Friedrich Nietzsche. What makes Nietzsche sayings valuable is that they're often jarring, sometimes shocking, and if you open your mind — will force you to think much more deeply. A key trait of successful investors is to be fluid with the market instead of imposing one's will on the market. The market, like nature, doesn't care about you — plain and simple. Here's an article outlining [40 Belief-Shaking Remarks](#) from Nietzsche:

Challenging your beliefs may give you more mental ammunition to understand what makes you tick because in the end it's not the market you must master, it's your mind. Here are some select comments that you may want to look over and if any of them give you pause or hit a nerve ... ask why!

- There are no facts, only interpretations.
- The future influences the present just as much as the past.
- When a hundred men stand together, each of them loses his mind and gets another one.
- All things are subject to interpretation. Whichever interpretation prevails at a given time is a function of power and not truth.
- Glance into the world just as though time were gone: and everything crooked will become straight to you.

Take working harder. Creating a startup or investing isn't about working harder — it's about working smarter. Success in the corporate world is difficult because individual performance is comingled with many others. Stellar performance isn't rewarded except for select professionals, i.e. Salespeople, and the CEO. The issue at hand is measurement. With work jumbled together; it's the group that gets rewarded on an *average* basis. For founders (and early employees) of startups, performance is easily measured. The same goes even more so for investors — simply look at the profit and loss statement. As Graham puts it “To get rich you need to get yourself in a situation with two things, measurement and leverage. You need to be in a position where your performance can be measured, or there is no way to get paid more by doing more. And you have to have leverage, in the sense that the decisions you make have a big effect.”

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#### INVESTORS (ARE THEY REALLY THAT DIFFERENT)

If you really think about it, investing is just like a lot of other professions. Lots of professionals profit from the joys of others and just as much, if not more, from the misery of others.

Many professionals profit from the joys of life. Restaurants, bars, and all kinds of retailers and service professionals profit from celebrations such as birthdays, weddings, and parties. In fact, entertainment is a huge industry. We have sports, movies, television, etc. and it's all geared toward making a profit.

Professionals also profit from the miseries of others. In fact, the whole healthcare system is built on profiting from the misery, pain, and suffering of others. Doctors and hospitals make billions from treating human frailty. Illness and injury keep the money flowing like a raging river. Do they make life better? In many cases, yes. But the fact is, the industry is built on pain and suffering.

Firemen profit from the destruction of property and human life. Sure they do their best to limit the damage, but the fact remains that they profit from destruction. And after the fire, investigators also profit. So do those involved in the cleaning and rebuilding of destroyed property.

The police continuously profit from investigating, prosecuting, incarcerating, and rehabilitating suspected criminals. Forensic accountants profit from uncovering fraud. While fraud hurts its' victims, forensic professionals do the profiting.

And look at meteorologists. They profit from Mother Nature's destructive forces. In predicting the *perfect storm*, meteorologists warn the public to limit loss of human life. Nevertheless, they profit from destruction. No destruction, no business.

And ... just like other professionals, *investors* also profit from human joy and misery.

Investors profit from thrill seekers who see the market as a way to easy street. It's a place to strike it rich overnight (in just a couple of hours a week of course). Without investors, thrill seekers would be denied widespread opportunities to strike it rich. Sure, most don't make it, but it does give them hope, just like the lottery. Investors profit from newbies with itchy trigger fingers who sell out early to lock in minuscule profits. No matter, profit — any profit at all is a cause for celebration for them.

Investors also profit from the misery of others, such as emotional pain. Investors make it their business to buy what others are desperate to sell — thereby relieving emotional pain.

Like forensic specialists, investors (by shorting) expose inept, corrupt managers within companies, as well as knocking sense into (or helping to get them replaced) government leaders intent on avoiding reality and fiscal responsibility.

And, finally, investors (just like meteorologists) warn the public of impending disaster by exposing deeper, underlying financial/ economic problems. Prices act as a barometer — predicting fair weather ahead, or warning those in power of looming storms.

The market as a whole — currencies, bonds, commodities, and stocks provide an indispensable service to companies, governments, and the public at large. Also, the market acts as a central exchange for driving investment and commerce.

Everyone is welcome in the market; free to try their hand at buying or selling whatever suits their fancy for as long or short as they want. Investors make it possible for the market to exist and for investors (either individually or collectively) to grow their capital — knowing they can get out quickly. Plus, at any point in time, investors will know how much their holdings are worth; especially Insurance companies and Pension/ Mutual Funds which depend heavily on a dynamic market so they can sell quickly to pay claims or redemptions — they need liquidity — which investors provide.

Do you want to be right or do you want to make money?

Visioneurs and investors alike fight a common enemy — ego!

Creating, or investing in companies is all about making a profit — yet so many fail.

The problem is *ego*. We don't want to admit (even to ourselves) that we're wrong, or that we made a mistake. Culturally we're conditioned to *be right* by our parents, teachers, religious leaders, and other authority figures who assert their position of power. From a young age questioning authority is discouraged or even severely punished. Being wrong subjects us to embarrassment and ridicule. As we grow older, we tend to sail the safe course to avoid challenging authority figures (i.e. the boss) or making mistakes for which we will be punished.

However, needing to be right stifles our creativity, and saps our energy — even more so in ultra-conservative cultures. Look around the world and you'll see societies, and companies that shackle the minds of inventors, innovators, visioneurs, and all who dare to question the status quo. Look at the cultures of America, Europe, and Asia. Follow the money. Where is most venture capital? ([U.S. Map](#)) Who's getting funded on Kickstarter and Indiegogo? Where do most of the [billionaires](#) live?

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## MONEY MANAGEMENT — DON'T BET THE FARM

Money management is all about controlling your animal instincts. Inside the mind lurks the urge to splurge, or in the case of investing — bet the farm. If it works out — you'll be a hero, a superstar. But what if it doesn't? Going all out is a sign of cockiness, but the market (for products or securities) has way of humbling each one of us.

With a mind of its' own, the market will kick your ass and even worse — it won't even notice you or care about your being wiped out. If you bet too much and lose, then you may be just one more visioneur out of business or an investor that goes broke.

Without a sound *money management* plan you may end up overinvesting, misinvesting, and end up losing it all — then it's *game over!* And that's no fun. So, that's where *money management* comes into play.

Investing is risky, and so are startups; because consumers and markets are irrational. Instead of betting the farm on what the talking heads say on TV, your favorite inside source, or even your own in-depth analysis; you should protect your capital. Investments end up in 1 of 5 ways, from most to least desirable:

- Make a large amount of money
- Make a small amount of money
- Break even
- Lose a small amount of money
- Lose a large amount of money

It's the last possibility that needs to be protected against. Successful investors don't gamble — they control and mitigate risk. For every investment, they establish risk guidelines. How much are they willing to lose on a single idea, project, or investment?

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## LEVERAGE - A DOUBLE EDGED SWORD

Speed Kills! ... And so does *leverage*. Leverage is dangerous, just like driving like a speed demon down the highway, or a jet pilot in combat. Wikipedia's definition of leverage: "In finance, leverage (or gearing) is using given resources in such a way that the potential positive or negative outcome is magnified and/or enhanced. It generally refers to using borrowed funds, or debt, so as to attempt to increase the returns to equity." Notice that "the potential positive or negative outcome is magnified" POSITIVE or NEGATIVE. That's the danger. When greed sets in, the mind zooms in on how much money can be made ... losses? — don't worry about that ... look at how much money we can make!

Traditional ways of using leverage are seen in many markets. In Real Estate, bank loans are made for nearly the full purchase price. Commodities and Forex also employ vast amounts of leverage and can result in losing more than originally invested. Options are also another way of magnifying losses and gains. And *visioneurs* maxing out their credit cards is a time honored tradition.

Leverage highlights two main problems. Visioneurs and investors are often drawn to the lure of outsized profits like a moth is drawn to the flame — both can end in disaster. Not only do they see the flame (profits), it blocks out information that contradicts the promise of profits. We all want to be right, but needing to be right is dangerous. Because leverage magnifies losses, it can induce panic attacks. When asset prices decline, the herd stampedes. Standing in the way of a stampede is not a good idea. For visioneurs, customers' not showing up is what causes panic, and in desperation visioneurs end up making rash decisions. Profits might even be generated through leverage, yet in the end paper profits are just that — on paper. Bottom line → lack of cash is what kills both visioneurs and investors. Greed is good, it's a driving force, but being a pig will get you slaughtered.

## Think Different

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### WHY NOT?

[Why Not?](#) How to Use Everyday Ingenuity to Solve Problems Big and Small by Barry J. Nalebuff and Ian Ayres is an excellent book that focuses on a key question — *Why Not?*

For visioneurs this is absolutely essential because the vast majority of people blindly accept the status quo along with all sorts of rules, regulations, customs, and traditions without so much as a second thought. Open your mind to the ideas in *Why Not?* and you'll go a long way towards creating differentiated, and maybe even world-changing, products. Some of the examples the authors use are simply timeless in their wisdom. In "What Would Croesus Do?" you start with a solution (and there always is a solution) and work to create an affordable version.

Other tools include asking pivotal questions such as:

"Why don't you feel my pain?" This question stimulates your thinking on exactly how your decisions affect the value chain of which your product is only one part., then to look for better solutions for all concerned.

Another key question is "Where else would it work?" In many cases, the solution to one problem may be readily applied to other problems. Finally, you might ask "Would flipping it work?" Point of View is a powerful tool. Sometimes just flipping things around offers a powerful new solution.

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#### 80/20 RULE

Richard Koch wrote an excellent book called [The 80/20 Individual](#): How to Build on the 20% of What You do Best, which applies equally to visioneurs and investors.

For me, this book literally changed my life in that it finally sold me on the concept of intensely focusing on my core strengths, rather than vainly attempt to be good at everything. Being good at everything is simply an impossibility and Koch says that energy should be redirected into 20-percent activities to dramatically improve results. As a bonus, you'll be able to spend less time (unless you really do like working 80 + hour weeks) producing the same, and most likely more, results.

According to Koch, to become an 80/20 individual, you will need to take the following nine steps:

1. Use the most creative 20 percent of your imagination and intellect.
2. Spawn and mutate great ideas in creative ways.
3. Find the vital few profit sources in your current or prospective business.
4. "Enlist Einstein" by recognizing the centrality of time in every activity.
5. Hire great individuals — that is, other 80/20 wealth creators.
6. Use your current company's profit potential to your advantage.
7. Exploit creative practices and ideas from other firms.
8. Secure enough capital to succeed.
9. Make zigzag progress — by recognizing that various stages of growth require different approaches.

I'll leave you with this question (which is the question that most changed my life): "What thing are you better at than nearly anyone else?"

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## ONE UP ON WALL STREET



[One Up On Wall Street](#) is a book by the legendary Peter Lynch that talks about a different way to look at stocks; as actual company shares — not just symbols. One of the great insights Lynch talks about is street lag (p.57). Essentially, street lag is about the fact that many fund managers operate under rules, many of which are informal, whereby investable stocks are those with enough coverage by well-respected Wall Street analysts. Taking a flier on unknown stocks is risky. If it fails, the fund manager has to endure extra scrutiny from his/her boss and the investing public. It's much safer to stick to better known companies. In that way, if the stock goes south, they can blame it on the company. Plus, the managers will stay even with other fund managers who invest likewise.

Individual investors interact with companies' everyday — at work, and in our personal lives. Every time we go shopping, we gain first-hand experience on the quality of a company's operations and products. To score, I mean really score in the market, I suggest reading and re-reading Chapter 6 - Stalking the Tenbagger It's only 11 pages long, so repeated readings will be easy. The bottom line is that you must understand the nature of companies. What do they do? How do they make money? How will they make money in the future? Lynch says you must know the story for every company you buy before you buy it. In Chapter 11, he says "Before buying a stock, I like to be able to give a two-minute monologue that covers the reasons I'm interested in it, what has to happen for the company to succeed, and the pitfalls that stand in its path."

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## BEING CONTRARIAN

Being contrarian doesn't mean oppositional. Fighting the market is not only stupid, it's suicidal. Creating products without a market is just as deadly. Smart Money is contrary while dumb money thinks mainstream. Think of a chess game. Amateurs usually plow ahead and move pieces often and without a definite purpose, whereas professional players exploit this tendency to their advantage. Looking ahead a few plays, a pro will notice that if they offer up bait to the other less agile player, then they will quickly win the game. Greedily the less agile player will snap up the piece offered to them to the point of celebration. Then, bam — the pro strikes and

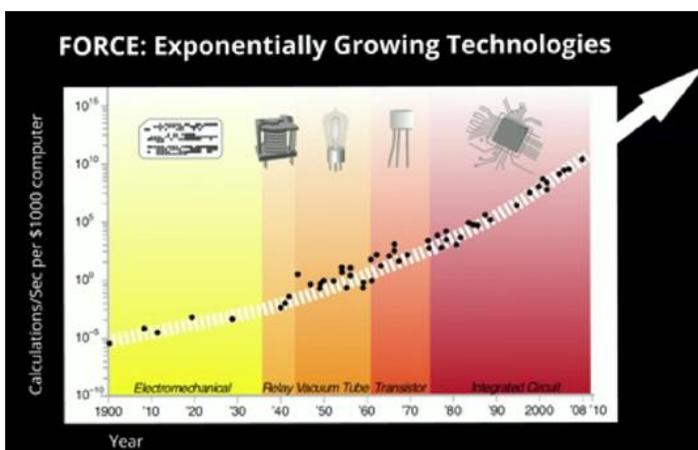
the other player suddenly realizes the error of his/her way. The same scenario plays out in financial markets across the world.

Two factors play out routinely: information asymmetry and mass psychology. Lets' look at each of these factors and how you can use them to your advantage. Information asymmetry and distributed information is what makes investing exciting & profitable. It also makes markets for products exceptionally profitable. Few profit opportunities would exist if everyone had access to the same information. The fact is that information is spread far and wide in the markets.

Understanding *mass psychology* is a key to success. Visioneurs need to understand what drives consumers and competitors, while investors need to focus on how other investors look at and value a given company. Supercomputers crunch the data of companies everywhere and spit out key numbers and ratios, which analysts then use to back up their point of view. In the coming years big data, or data mining, will be standard practice for companies seeking to understand consumer demand. Financial players also slice and dice market data to gain an edge on the competition. In the end though, it's psychology that drives markets — any type of market.

A key way to capitalize in the market is to act more like the *smart money*, being contrary to what's flowing across the TV screen. By the time information is crunched, torn apart by analysts, and then projected on the TV screen — that information is way too old. Instead, you need to look at the underlying story that the market is telling — if only you'll listen. To score big, look for the hidden story. What's really going on inside the company, or the consumer's mind? Steve Jobs didn't put out the customary customer survey and ask customers what they want. In his words, "...That doesn't mean we don't listen to customers, but it's hard for them to tell you what they want when they've never seen anything remotely like it..."

## Thinking Exponentially



“In the sky, there is no distinction of east and west; people create distinctions out of their own minds and then believe them to be true.” — Buddha

If you want to make money, **BIG MONEY**, then you need to start thinking *exponentially*. Billionaire Peter Thiel is very disappointed in the last 50 years of human development. Thiel states that “we’ve forgotten how to go from 0 to 1 ... Progress comes in two flavors: horizontal/extensive and vertical/intensive. Horizontal or extensive progress basically means copying things that work.... Vertical or intensive progress, by contrast, means doing new things. The single word for this is technology.” In his book [Zero to One](#), Thiel writes about the need to ask whether or not the company will be around a decade from now instead of only focusing on the short-term. He cites two companies as examples of short-term pops —Groupon (\$GRPN) and Zynga (\$ZNGA). Both of these companies hit the skids, and slid down the mountainside. Most likely they’ll soon join the dustbin of history.

Our world is full of problems and correspondingly — potential solutions! The key is how these problems get solved; incrementally or radically — that is through **EXPONENTIAL** thinking! [Exponential Thinking](#) is the key. “There are impending paradigm shifts that will no doubt rock our world; We need to be prepared for what’s to come, and that starts with a shift in perspective. It’s time to take the red pill... It’s time to start thinking exponentially.”

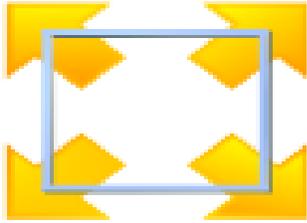
10 years ago, Smart-phones were only starting to enter the mainstream. Fast-forward 10 years and poof — PCs (as we know them today) are facing extinction. Super Smartphones and Tablets are taking over. That trend is obviously losing steam. The **BIG** money opportunity came & went. Apple (\$AAPL) screamed skyward like a hypersonic rocket in the past ten years or so. Now talk is centered around a cloud-filled universe and streaming everything. Naturally it’s easy to just accept what’s spewed forth by so-called experts who put out headlines such as “Will Change Everything” or “Top 10 Technologies”.

Instead of relying on experts; who rarely put any skin in the game (unlike investors), a better idea is to crank up your thinking. Instead of thinking incrementally — think exponentially. What will create massive change? What will be the ripple effects of that change? Embrace the unknown!

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Morpheus to Neo in the *Matrix* ...

"You have to let it all go, Neo...fear...doubt and disbelief.... Free your mind!"



In the last chapter we talked about thinking exponentially. If you're serious, I mean really serious about reaching for the stars — whether that's money/wealth, contribution to mankind, or simply the satisfaction of a life well lived; then you need to expand your horizons. First came competition, then came disruptive innovation, and now we have big bang disruptions. Over the years, competitive forces compressed the world as we know it. Telecommunications, air travel, and then boom — the internet! Business will never be the same because it's globalized, there's no turning back. Epic change sprang from the industrial revolution. The internet made the world digital. Now, with the advent of radical new biologic, nano, and quantum technologies; automation will be ripping apart our world. Will we adapt? Yes, but it will be painful for the unprepared masses. Pain = Opportunity!

### The Future - a Great Big Puzzle

#### **The future is a collection of:**

- Twists & Turns
- Blind Spots
- Hopes & Dreams
- Fears,  
and most of all
- *Possibilities*

To understand what's going on with the masses (who in turn drive change) study individuals. Anaïs Nin states that “Every individual is representative of the whole, a symptom, and should be intimately understood.”

As you *anticipate* the future, be careful and "Don't get so far ahead of the parade that people don't know you're in it" — John Naisbitt (Mind Set)

- For visioneurs this means tuning into what customers want, and are willing to pay for.
- For investors it means being in sync with the market. If certain sectors are out of favor, then wise investors will wait for such sectors to be on the verge of becoming hot.

## Don't get better — get different

Business is changing so fast it's hard just to stand still, yet alone move ahead. Customer markets are increasingly fragmented while businesses are under extreme pressure from competitors around the world. As an example, one country, China is driving a stake into the heart of many U.S. companies. And to make matters worse, technology is a speeding bullet that gives temporary advantages.

Solving these problems requires innovation which is defined as "The act of introducing something new." Being different, or better yet — distinctive, is one of the few remaining sources of competitive advantage. As a visioneur, you simply don't have the luxury of time. If you sit still, you'll be run over. Instead, you need to quickly create a plan to be different, and then execute.

How visioneurs can be different? (Investors should see company managers doing this).

### 1) Know the industry. Who's doing what?

Start with making a list of all the companies you consider to be in that industry. Then do some homework. Look at industry associations, consulting firm reports, and the opinion of analysts for their assessment of who is in the industry.

Next compile as much information as reasonably possible.

- Look at company websites.
- Search for stories on companies and their leadership team.
- Buy their product if possible.
- Talk with (& socially research) suppliers.
- Talk with (& socially research) customers.

With this information, create a competitive matrix on a product by product basis.

### 2) Avoid shark-infested waters by carving out a new niche.

[Blue Ocean Strategy](#), a classic HBR article talks about how *red* oceans represent current, heavily contested, market-space. On the other hand, *blue* oceans represent the universe of all industries not in existence today — unknown market-space that is untainted by competition. In blue oceans, demand is actually created. To swing for the fence, visioneurs must avoid the shark-infested red water and sail into the deep blue sea.

"... Creators of blue oceans ... never use the competition as a benchmark. Instead, they make it irrelevant by creating a leap in value for both buyers and the company itself."

The authors talk about how [Cirque du Soleil](#) outflanked Barnum & Bailey Circus by reinventing the industry. To date Cirque du Soleil is much more successful as a result.

Instead of CRM (Customer Relationship Management), why not think in terms of CEM (Customer Experience Management). Fact is, customers have relationships with people, not companies. When people buy a product, or use a service, they want an experience. Therefore, a company's goal should be to create the best possible experience.

3) Anticipate competitive reactions, and develop a plan of action.

Obviously other industry players won't stand still. So, you need to be creative, flexible, and aggressive in executing your business strategy. In fact, one of your strategic options should be to sell the company to a larger industry player.

Many tools exist to create competitive strategies. In our increasingly global economy, you may want to start with a PEST analysis which evaluates the Political, Economic, Society, and Technology factors that shape the overall competitive environment. Secondly, Michael Porter (of the Harvard Business School) developed the Porter's 5 to assess the overall health of a given industry. Finally, a SWOT (Strength, Weakness, Opportunity, and Threat) analysis will help you create a competitive advantage for your company. One tool I use is called ViPR.

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ViPR

- Values
- Innovative spirit
- Processes
- Resources

Innovation guru [Clayton Christensen](#) offers a model called RPV (Resource, Processes, and Values) to analyze an organization's innovation capabilities.

RPV theory states that:

- 1) A company must possess (or be able to acquire) the resources to attack a given opportunity.
- 2) A company needs processes that facilitate seizing an opportunity.
- 3) A company's values prioritize what is and what is not considered an opportunity.

I added *innovative spirit* to the equation because greatness arises from the non-quantifiable *energy* sparked when individual personalities, imagination, and energy merge. Spirit is what separates the so-so from the big winners — game changers!

Sun Tzu said it best → “Avoid what is strong. Attack what is weak.”

Going head to head with competitors is risky for large combatants and suicidal for visioneers.

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#### VALUES:

Acting as a guiding light, values are in essence — a company's *identity*. Values dictate what a company will and won't do. It defines what is and isn't *seen* as an opportunity. While a \$50 million market may look like an opportunity to a \$500 million company, it would barely appear on the radar of a \$5 billion company.

*Values* may be inferred from a number of sources, including statements to customers and investors. A company's website is a powerful marketing tool. Like a mirror, the company's home page reflects the company's identity.

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#### INNOVATIVE SPIRIT:

*Innovative Spirit* is harder to ascertain. One method I find useful is to compare the company to the industry at large. What (if anything) is the company doing different from other industry players? Is the company more likely to follow the rules or break the rules? Is the company part of a dynamic, future-oriented industry or is the industry desperately clinging to the past?

Like the clothes we wear, a company's website tells us a lot. While a slick website isn't everything, successful companies' sites tend to be more customer-focused, and not plastered with self-important claims. It's not necessarily about pizzazz, it's about emotional response — how does visiting the site make you feel?

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#### PROCESSES:

“Your net worth to the world is usually determined by what remains after your bad habits are subtracted from your good ones.” — Benjamin Franklin.

*Processes* are like habits. Look at the company's history. How did the company tackle past challenges? What do they talk about doing? Who does the company hire? What's the company's culture? Are employees engaged, or do they just punch the clock?

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#### RESOURCES:

*Resources* are either tangible or intangible. Naturally tangible resources such as buildings, cash, or inventory are easily measured. However, intangible resources represent the company's real potential. Brand names are highly prized and patents lock-out potential copycats — yet, the ultimate resource is people. Employees make or break company. Imagine taking away a company's employees, what's left — not much!

Let's recap. Instead of diving headfirst into a swarm of sharks by attacking the competition, it's a much better idea to make the competition irrelevant, at least for a while, by creating something new. Three things you must do to be different are:

- Know your industry. Who's doing what?
- Avoid shark-infested waters by carving out a new niche.
- Anticipate competitive reactions, and develop a plan of action.

With the world around us spinning in a cloud of dust, it's hard to know where to go sometimes. Fortunately, as a visionary you aren't saddled with oversized baggage full of obsolete technology and stubborn people stuck in old ways. Donald Trump's book "How to Get Rich" talks about failure and makes an excellent point — If you're going to lose, what's the difference between losing \$100,000 and millions (or even billions) of dollars. Either way you've lost. However, if you win — wouldn't you want to win BIG. So, take a leap of faith — take a chance. Go forth and conquer.

#### Open your mind

“You can't depend on your eyes when your imagination is out of focus” — Mark Twain

In the *Power of Wisdom*, Aman Motwane explains Duality which is a key concept in innovative thinking and that's really important in expanding your mind. When you change how you see the world, your whole world changes. This is especially true in markets thanks to that ever-pervasive emotional state called confirmation bias. A lot of people, including investors, and visioneurs are locked into seeing what they want to see. Even worse is the fact that humans are ruled by herd instinct; which is why Fear, Hope, and Greed continue to drive markets.

Duality looks at the concept that **NOTHING EXISTS WITHOUT ITS OPPOSITE!** Look at a coin — it has two sides, yet nearly all of us think in terms of heads **OR** tails, but not heads **AND** tails simultaneously. So many investors lock in on a certain view of the market, be it bullish or bearish, and stubbornly cling to any information that confirms their viewpoint. They follow the herd instinctively. They watch the same TV programs; they read the same blogs and newsletters. And of course they religiously follow Investor's Business Daily or the Wall Street Journal.

The problem is that ... If you do what everyone else is doing — if you read what everyone else is reading — then by definition, you will be stuck at ordinary. And that's what most investors end up accepting — average performance. And that's why so many visioneurs burn out.

Using duality, you could go one step further and hold two opposite opinions at the same time, and then let the market (or customers) tell you which one is right. Visualize in your mind both scenarios — the market soaring and the market crashing — then look for clues as to which one is

right. In doing so, you're letting the market tell you what moves to make. Plus you can use duality to look at the various ripple effects within markets.

Every move in the markets sends out a cascading set of waves throughout other markets. Everything doesn't go up and everything doesn't go down — money must flow somewhere. The financial markets are one entity — the market for money. If one company crashes, others will benefit — the key question is which one(s). If a certain commodity goes up/ down, the question to ask is who will that help/hurt — then move on to explore the rippling effect through the markets. And, be ready to switch to your other opinion just as quickly if the market says that opinion is the right one (at the moment).

Although duality may be somewhat obscure, it can be a powerful tool in your ability to think outside the norm — resulting in above average, maybe even stellar performance. I sincerely hope this stimulates your investor's mindset. Up, Down, Up, Down ... that's the market for you. Hope you're out there looking at the flow of money — where's it going, and then capitalizing on those insights.

What makes change a profit opportunity is unanticipated change! Look at second and third order effects to expand your horizon.

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#### THINKING BIG

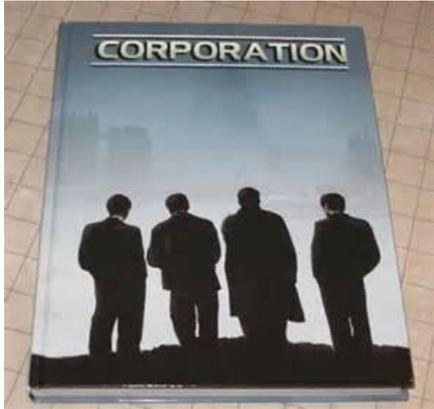
Thinking big is key to expanding your horizon. An old computer phrase is *garbage in, garbage out* applies to data, information, and knowledge.

Big Thinkers need high octane fuel. One of the greatest sources of grade A fuel is [TED](#) which stands for Technology, Entertainment, and Design. TED is all about presenting and sharing innovative ideas. Other sources to stimulate high level thinking are [Big Think](#), and [Brain Pickings](#). Some other great business resources are the [Harvard Business Review](#), [MIT Technology Review](#), and [Strategy & Business](#).

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#### JUST IMAGINE

Here's a way to stretch your thinking. Imagine possibilities by playing the game — what if?



"If we let people control technology rather than being its slave, it will lead us away from a world where we work for large corporations and towards one where we can turn our own ideas into reality" — Eben Upton, Raspberry Pi founder

"A dozen generations ago, there was no unemployment, largely because there were no real jobs to speak of. Before the industrial revolution, the thought that you'd leave your home and go to an office or a factory was, of course, bizarre." — Seth Godin.

With the rise of the machines; our way of life, at least in the western world, is threatened. Careers are nearly extinct. Job hopping is the norm — and not usually voluntarily either.

According to a GAO (General Accounting Office) study, over 40% of the U.S. workforce is now made up of contingent workers which typically earn less and without benefit packages. This figure was just over 30 % 10 years ago. Add in many who are not *officially* in the workforce and the number is even higher. If this trend continues, this major shift in the workforce will impact society in unforeseen ways. People are used to jobs where they're told what to do and when to do it. Without this, many will be forced to adjust to a radically different world — one not seen for well over a hundred years.

Corporations faced with increased global competition struggle to remain competitive. Work is sent to the east where Chinese and Indian workers are much cheaper. Then wages rise and jobs are sent elsewhere or more likely — automated. Automation is the final nail in the corporatist's coffin. Industrial Capitalism is struggling to remain relevant, giving way to new possibilities. New economic systems are on the horizon. Distributed/ Decentralized Capitalism may end up redistributing the means of production.

The debate isn't Capitalism vs. Socialism, which becomes politically corrupted in short order. Instead, the issue at hand is power — who gets to own and control the means of production. Before the industrial revolution, consumers were also producers who owned the tools of creation.

Most of us today are passive consumers, whereas the world of tomorrow may be full of more active consumers who don't let technology enslave them. Instead, we will have a deeper relationship with technology where we control and customize products to meet our unique, individual needs. And, instead of settling for mass produced, cookie-cutter products that while *good enough*, leave consumers vaguely unsatisfied.

In going to work for large companies, individuals give up the vast majority of the value they create in exchange for wages. Employers may generate hundreds of thousands (and sometimes millions) in profit per employee while paying only a small fraction in wages and benefits. Like cogs in an industrial machine, employees toil away day in and day out — never quite certain if and when they'll be cast aside for new cogs (younger, less costly workers) or simply be tossed aside, no longer needed. Robotics and Smart Systems (AI) are the ultimate new cogs. Machines are much cheaper, work 24/7, and are not emotional; they are in essence — the perfect employee. Although machines don't yet *think*, thinking isn't what's needed in many of today's jobs.

Massive layoffs are occurring all around the world, and will continue to occur which leads to the conclusion that either societies will reorganize the distribution of wealth or economies may collapse. Income distribution may go back to its roots, where individuals are both creators and consumers. In the future; many, many more of us may become *makers* or at least part of smaller, localized maker organizations. Effectively the masses may become self-employed.

Look around, the signs of change are all around us. Sharing — [Mesh](#) / [Sharable](#); [Open Source](#), [P2P](#), [3D Printing](#), and [DIY](#).

The industrial age was about scarcity. The future, connected economies of tomorrow will be about abundance.

#### WHAT IF EDUCATION BECOMES OBSOLETE?

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Or at least education as we know it. K-12 might survive through pure force of government mandate. Nonetheless, that doesn't make it any less obsolete. A different level of knowledge and skills are needed to compete in the 21st century. Biology is being upended by *synthetic biology*. Human workers are being replaced by *robots*, human minds are being replaced by *intelligent machines*, and new materials are being created by *nanotechnology*. The fact is that we don't need kids to go to school more, we need them to learn more. The 21st century is a 24/7 environment.

If children are tethered to old school ways, only those children who experiment and learn on their own will be prepared for the future. As it is now, just look at average students vs. those who compete in science fairs or are active in the maker community; kids like [Sylvia](#) or those engaged in programs like [Maker Faire](#) or [Young Makers](#). [Maker camps](#) and [DIY](#) meetups may mean the difference between the haves and the have-nots.

Public education will never be the same again. Makerspaces are springing up in public and private schools in the U.S. and will likely be all over the world in short order. The [Maker Education Initiative](#) aims to empower every child to be a Maker. [Library As Makerspace's](#) ambition is to “Spur innovation and artistic expression through hands-on experiences.” As more and more libraries hop on board, they will embrace the 21<sup>st</sup> century by fulfilling their potential as centers of learning.

And don't forget to add in [MOOCs](#) (Massive Open Online Courses) to the equation. Kids today don't really need teachers at school. Teachers are a mouse-click away on the net. Organized courses are available as well as ad-hoc instruction. Education is about to be [hacked](#).

In the end, what will all this change mean to administrators, teachers, and most of all students?

#### [WHAT IF SOLAR CELLS BECOME DIRT CHEAP?](#)

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Let's face it; the world economy is built on fossil fuels — most notably coal and oil. Without these, the world's machines grind to a halt. Fortunately and unfortunately it looks like there's plenty of fossilized carbon to last a long, long time. The side effect of burning carbon is that it creates greenhouse gasses which pollute our environment. Electric cars are all the rage in the minds of politicians, yet most of that electricity is still created by burning fossil fuels.

What if solar power, and specifically solar cells, becomes dirt cheap. Instead of utter dependence on centralized electrical grids, local power would spring to life. Decentralization poses many implications for the world around us. Critics will be quick to point out that solar power is a long way off from replacing the grid. Maybe it is, but what if it isn't. The race is on. [Nano-materials](#), robotic fabrication, and [3D printing](#) are all potential solutions to creating dirt-cheap solar cells. In 1977 [solar power](#) cost a little over \$75/ watt, in 2013 it was about 75 cents, and in 2105 it's estimated to be about 40 cents. Of course the cost is higher for a full solar installation. [Solar Panels](#) are becoming more and more affordable. At \$10,000 to \$15,000, most homeowners will stay tied to the grid. However, when this price is ½ or ¼ of this price, it will be compelling with a payback period only six months to a year.

Solar cells may not even be the biggest breakthrough. Imagine if and when scientists and engineers perfect transparent solar technologies. MIT startup [Ubiquitous Energy](#) is working on see-through solar cells that harvest light energy when applied to windows or the screens. Imagine the possibilities; e-readers, smart-phones, and tablets to name a few. Windows may end up powering our homes and offices.

With cheap electricity, the power generation industry of today may face an ELE (extinction level event). Now that's a game-changer!



### Tale of Three Fish

There's an old Indian tale about three fish that lived in a pond.

One was named Plan Ahead, another was Think Fast, and the third was named Wait and See.

One day they heard a fisherman say that he was going to cast his net in their pond the next day.

Plan Ahead said, "I'm swimming down the river tonight!"

Think Fast said, "I'm sure I'll come up with a plan."

Wait and See lazily said, "I just can't think about it now!"

When the fisherman cast his nets, Plan Ahead was long gone.

But Think Fast and Wait and See were caught!

Think Fast quickly rolled his belly up and pretended to be dead.

"Oh, this fish is no good!" said the fisherman, and threw him safely back into the water. But, Wait and See ended up in the fish market.

That is why they say, "In times of danger, when the net is cast, plan ahead or plan to think fast!"

### Skate Ahead of the Puck

All-star hockey player Wayne Gretzky was legendary in his ability of knowing where the puck will be and then capitalizing on the opportunity by slamming the puck into the goal.

In today's world it's becoming imperative to know where the puck *will be*. What will customers want? Where will technology be? Who will be competing against us? Jet fighter pilots need to look at the horizon or risk ending it all in a fiery crash. Visioneurs and investors are like jet pilots, they need to keep one eye on the gauges and the other on the horizon.

Either you're in business to win or you're not. Business, like football, is a contact sport. There are winners and there are losers — there's no second place.

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#### THINK ABOUT THIS

Where would we be without cars: "The ordinary 'horseless carriage' is at present a luxury for the wealthy; and although its price will probably fall in the future, it will never, of course, come into as common use as the bicycle." (The Literary Digest, October 14, 1899).

Or what about computers: "There is no reason for the individual to have a computer in their home." (Ken Olsen, president of Digital Equipment Corporation - 1977).

The future is in your hands. You can either cling to the ways of old or openly embrace the future. If you want to win, you must know where the puck will be. If you don't, I can guarantee your competition will and they'll use that information to crush you. Startups in particular need to know where the puck will be because they sometimes only get one shot. With ultra-tight resources, startups must be on target with their product. If not, they may drop off the a cliff or end up in space without oxygen.

So how do you know where the puck will be? First you need to deeply understand what customers really want. Second, you need to know your industry, inside and out. And, you need to accept technology as your friend.

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#### PEELING THE ONION

Customers are like onions in that they have many layers. One of the reasons so many companies fail is that they become delusional in thinking that their opinion counts — it doesn't. The only opinion that counts is the customers. The reason for this is simple, the customer is the one opening their wallet and as my dad used to say to me growing up — "He who has the gold makes the rules." In addition to constantly watching and listening to customers, you need to look at the competition is doing.

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#### SCAN THE HORIZON

Know the industry, inside and out. Who's doing what? Who's just over the horizon? Modern day battleships now launch missiles from just out of sight to sink enemy ships. They do this for two reasons: 1) Battleships are extremely valuable and commanders actively avoid being targeted themselves, and 2) By remaining out of sight, they control the element of surprise. Unseen competitors will do the same by destroying your business.

A competitive matrix which visually projects the competitive landscape is just like a map, it shows you where you are and what's around you

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## TECHNOLOGY: FRIEND OR FOE?

For those who see technology coming (and are prepared to embrace that technology) technology is their best friend. On the other hand, for those blind-sided by technology, it's like being cornered by a vicious, snarling Doberman about to take a bite out of their ass!

Actively engage in technology forecasting. Run scenarios on how technology may affect demand for your product(s). Then surround these scenarios with strategies and tactics for not only dealing with change, but actually using it to further sharpen your competitive advantage. And investors need to hold management's feet to the fire, after all — investor's own the company.

Early stage companies who *see* where the puck is going to be are a constant threat to existing, sluggish enterprises that are slow to innovate. As it should be — the fast push aside the slow. If not, our whole society suffers by not enjoying the incredible benefits new products offer.

Understanding how technology affects business is not optional —it's mandatory! Technology can be your friend or foe, depending on whether or not you see it coming and how well you capitalize on the technology.

Let's look at 3 types of visioneurs and then 3 types of investors.

### Visioneurs/ Start-ups

In business we find three types of visioneurs:

- Plan Ahead visioneurs do their homework; carefully time their entry into the marketplace. They probe the market with small experiments and gauge customer response. Repeating the process, *plan ahead* visioneurs do what it takes to get it right.
- Think Fast visioneurs look to be fast followers. Sometimes it works and other times it's like catching a jet plane — virtually impossible.
- Wait and see visioneurs end up getting burned. By the time they know there's a definite market, all the good seats are taken.

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## AHEAD OF YOUR TIME?

One of the biggest problems with visioneurs is looking too far ahead. Solving this problem means narrowing the time frame and assessing whether or not there is a need — now? It's one thing to skate to where the puck will be and quite another to be on the other side of the ice — waiting, and waiting, for the game to shift to your side of the rink.

Being slightly ahead of your time is fine, but a bad sense of timing wastes valuable resources. *If you build it, they will come* — maybe, maybe not! There's a phrase — searching for a “solution without a problem” that typifies this level of thinking.

While it's important for visioneers to look ahead, even beyond the horizon, it's absolutely critical to stay grounded and move towards identifying what's needed now. Is there a genuine problem to be solved or an emotional need? Is the market receptive to the industry/ company in question?

One way to ensure that you're not too far ahead of the masses is to enlist customers early and often in the development process. Customers may not always know what they want consciously, but they do know what they want at a deeper level — sometimes it just takes visioneers to coax it out of them.

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#### LATE TO THE PARTY?

On the opposite side of the spectrum is being late to the party. Instead of getting to the party ahead of time, being late means the party is about to wrap up ...over!

Scoping out the competition is so important. Imagine the devastation from spotting a customer need, creating a compelling product, and then — boom, finding out that you missed several competitors with a next generation product that blows your product away. Or, to find out that the entire industry is slipping into oblivion. Picture automobiles *replacing* horses as the primary means of transportation. The keyword is *replacing*. Automobiles replaced horses, photography replaced artistic drawing, and emails replaced letters. Yes, horses are still around. So is art. And, letters aren't complete gone either. But the vast majority of these products are bygones, relegated to being niche products.

If the playing field is full or about to be sideswiped by Apple, Facebook, Google, etc... — find another ocean to swim (and invest) in. A book called [Blue Ocean Strategy](#) is an excellent resource for learning how to avoid being late to the party — swimming in an overcrowded red ocean. "How to Create Uncontested Market Space and Make the Competition Irrelevant" is the authors tagline as they extend the concept by saying that "...in today's overcrowded industries, battling head-on results in nothing but a bloody "red ocean" of rivals fighting over a shrinking profit pool."

Avoid shark-infested waters by carving out a new niche. According to Blue Ocean Strategy; Red oceans represent current, heavily contested, market space, while blue oceans represent the universe of all industries not in existence today — unknown market space that is untainted by competition. In blue oceans, demand is actually created. To swing for the fence, visioneers must avoid the shark-infested red water and sail into the deep blue sea. "... Creators of blue oceans ... never use the competition as a benchmark. Instead, they make it irrelevant by creating a leap in value for both buyers and the company itself." Cirque du Soleil is a prime example of staking out virgin territory.

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## ECOSYSTEMS

Ecosystems are vital to the success of startups. Dogged determination will only get visioneers so far. A lack of high speed broadband doomed many of the dot-coms in the 1990's. In the early 2000's online video startups struggled, they couldn't gain traction because broadband lacked enough oomph. Then, only a few years later, Netflix (\$NFLX) and YouTube took the world by storm. Look at the past and you'll see lots of false starts, outright failures, and then the industry took off when conditions were right.

Almost anything you build (or invest in) is built on a long history of prior work — discoveries, inventions, methodologies, etc. Visioneers should always ask themselves “why will I succeed when others failed?” and *I'm smarter* is not the right answer. All the pieces need to come together. Betting on emerging trends takes discipline and patience but it's also the way to hit it really big.

As you stare into the future, look for the right conditions. The transistor opened new possibilities, as did the PC, the internet, smartphones, etc. Game changing technologies piggy back on each other. Look back, see the trends, and then see how they connect.

## Investors

In the Market there are three types of investors.

- Plan Ahead type of investors do their homework, carefully time their entry/ exit points or even stay away from market until calmer seas prevail.
- Think Fast type of investors (rare indeed) trade the market looking for high risk/ high reward trades and are able to jump out fast.
- Wait and see investors end up getting burned, like the majority of investors in the 2000 dot-com crash, and the 2008 financial meltdown.

Strategic investors need to assess the competitive environment by delving deep into the industry and company operations to spot storms on the horizon well before other investors. In essence, strategy helps decide *what* to buy. On the other hand, technical analysis will help decipher the mood of other investors, which in a sense is the real competition.

Technical or *visual* analysis is an important subject that'll help investors — regardless of their time frame — enter or exit the market at the most optimal times. If you don't believe me, just think about how long it takes to recover from buying stocks at market tops — such as early 2000, or late 2007. *When* to buy is just as, if not important, as *what* to buy.

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## TRENDS (DIRECTION)

The Trend is your Friend! But, what if there's no Trend?

That's one of the most important steps in analyzing securities. In fact, many investors run into trouble because they use perfectly good technical indicators in the wrong type of market. Here's an excellent article that covers the subject: [Trend vs. No Trend](#) (pdf).

In evaluating trending markets, three key questions come to mind. Let's assume we're talking about stocks, although the same holds for other securities.

- Is there really a trend?
- What direction is the trend moving?
- How far is the trend likely to extend?

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## IS THERE REALLY A TREND?

This is the most important question. Trending and non-trending markets must be handled differently using different indicators. One of the best primers on the subject of visually identifying trends is [Sticky Stock Charts](#). In the book it states that a trend line must touch at least three points to be a confirmed trend. Moving averages also offer a simple way of looking for a trend. Be sure to look at the timeframes you're trading as well as zooming out for the Big Picture. If the chart looks like a series of sideways S's, then there's no discernible trend. Same thing goes if the chart looks like a set of jagged shark teeth, up-down-up-down ...

A more advanced, in-depth resource is The [Visual Investor: How to Spot Market Trends](#) by John J. Murphy.

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## WHAT DIRECTION IS THE TREND?

Looking at a moving average is fairly straight forward. What does the slope look like?

If the price of a stock is above the moving average, then it's said to be in an uptrend, and the price is likely to continue moving up.

On the other hand, if the price of a stock is below the moving average, then it's said to be in a downtrend, and the price is likely to continue moving downward.

StockChart.com's Chart School does a great job of explaining [Moving Averages](#).

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## HOW FAR IS THE TREND LIKELY TO EXTEND?

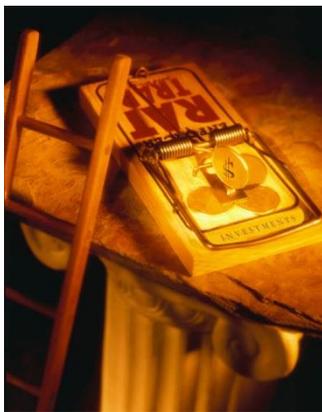
This of course is the million dollar question. It's one thing to spot an up or downtrend. Traders will spew forth all sorts of fancy technical jargon. Technical indicators reflect the psychology of market players. What's key is to understand what's going on behind the scenes. What's driving the psychology? Answer that question and you'll be able to invest with confidence.

Another factor to look at is [support and resistance](#). Anytime price nears a key support or resistance level, it's important to watch how the price reacts. These represent key psychological barriers for investors, especially institutional investors who play a major role in moving the market.

Trends are very important for investors to recognize and capitalize on. First of all, investors need to test whether or not there really is a trend. Then they can look at the direction of the trend, as well as how far the trend is likely to go.

Every chart tells a story. The key is to look carefully for what's between the lines.

Is it sending these signals?



Or this signal?





## CHAPTER 12 – TAKE THE BULL BY THE HORNS



### Pull up that anchor

"Twenty years from now you will be more disappointed by the things that you didn't do than by the ones you did do.

So throw off the bowlines. Sail away from the safe harbor. Catch the trade winds in your sails. Explore. Dream. Discover."

— Mark Twain

Actually pull up the anchor → don't think about it, don't plan to do it — just do it! Get rid of all your excuses and believe me there's an unlimited supply of excuses. Then set sail. Nobody really cares about your life the way you do. You'll never get anywhere if you stay anchored in port. And while you're at it — extend yourself. Don't settle for hanging out in the bay. Go for it. Sail into the open sea. Yes, it's challenging, but it's exciting. And, that's where the real action is.

Walter Anderson in [The Greatest Risk of All](#) *Why Some People Take Chances That Change Their Lives - And Why You Can Too*, writes that the worst risk of all is "Not to choose ... When we don't choose, when we don't risk, we step out of the game." Going on he says "Whatever you decide, don't tiptoe. Walk with courage, act with tenacity ..." Not taking a risk, playing it safe is absolutely the wrong thing to do. And remember, perfectionism will paralyze you!

### Be wrong

Lots of people are absolutely terrified of taking any risks. They stay in jobs they hate, won't start the business they've always dreamed of, and stuff their money in bank accounts at almost zero interest. And guess what, it feels safe. But it isn't. Being stuck in a job sucks the life out of

people. Sure starting that dream business is risky, then again so is crossing the street. Everyday people get in their cars and drive. Yet most people just do it. They don't see the danger — it's not even on their radar, it's invisible. In the same spirit, investing is called gambling. Depositing money in the bank is safe, except for that hidden enemy — inflation. Month in and month out, year in and year out, products get more expensive. Inflation (and don't forget taxes) eat away at the pittance the bank pays, yet it's the *safe* choice, go figure.

Barry Ritholtz wrote an excellent piece on the [Fine Art of Being Wrong Wrong](#) that's directed at investors, although it applies equally to anyone aspiring to greatness. What it boils down to is that "More than anything else, what differentiates people who live up to their potential from those who don't is a willingness to look at themselves and others objectively." —Ray Dalio

The fact is that most of us need to make more mistakes, a lot more mistakes. And then learn from those mistakes. Mistakes are painful because 1) we expect to be right, 2) other people's opinions mean too much to us, and 3) making mistakes is heavily penalized in most business and social circles. Our ego runs the show and it knows it. Statistically the chances of being wrong are high — no matter what we do. Even if we do nothing, we can still be wrong. So why not expect to be wrong. And if you're right — then great! Plus, when you're not right (wrong sounds negative), then use it as a chance to learn.

Making mistakes is one of the hidden keys to success. Imagine crossing the ocean. Waves will push you all over the place. There's no way you'll never get off course — even if it's just a little bit. Strong winds and the current will push you off course, corrections are needed. When you make mistakes and you will — admit it ... and move on. Learn from your mistakes. Better yet learn from the mistakes of others — it's less expensive. Not listening to others is a huge mistake in and of itself.

The runner-up to making mistakes is *not admitting* that we made a mistake. This is extremely dangerous. If we make a mistake and deny it, the damage will get worse. More mistakes, more denial, and then — boom, reality rears its ugly head. It happens all the time in the financial markets — just look at the dot-com boom (and bust) or the housing boom (and you guessed it ... crash).

## Unlocking the Ultimate Source of Wealth

Are you like the alchemists, trying to find a shortcut to wealth? Well, stop looking. On the road to wealth there are no shortcuts. However, while there are no shortcuts per se, some lanes are faster than others. Let's look at the definition of wealth, the essence of wealth, and pathways to wealth.

## *What is Wealth?*

Wealth is such an elusive term. Webster's dictionary states wealth as the: "Abundance of valuable material possessions or resources." So what is wealth? Is it money, valuable possessions, or even time? No, wealth is a concept! One way of thinking about wealth is that it represents energy.

Energy facilitates our enjoyment on earth and is a driving force in our world. When we trade our time and energy, we do it with the expectation of being able to trade for the time and energy of others.

Employed individuals create wealth each day by providing services to their employers. Business owners create wealth by providing goods and services to customers. Potentially, wealth is anything that could become something that others will pay for. But a thing is not economic wealth until someone is willing to pay for it. Consider Vincent Van Gogh. While he was alive he could hardly sell his paintings, now they are worth millions.

Releasing wealth depends on one word, which will change your life. *Value* is the foundation of wealth and is subjective in nature. Earl Nightingale says it very eloquently; "every dollar we will ever earn comes from people." For some insight into how to create value for others, let's explore the creation of wealth, past and present.

## *Wealth — Then & Now*

Through wealth, people's lives are greatly enriched. Consider life in the United States over 200 years ago. In stark contrast to today, life was hard, maybe even harsh. Life was more about survival than comfort. Hope rested in the hands of visionaries who, in their pursuit of wealth, literally transformed a primarily agrarian society into a modern society with an unprecedented standard of living for the vast majority.

Throughout the Industrial Age muscle power was increasingly augmented by machine power and as a result, one man could now do the work of 10 or even 50. As time marches on, muscle power continues to decline in value. Consider these statistics:

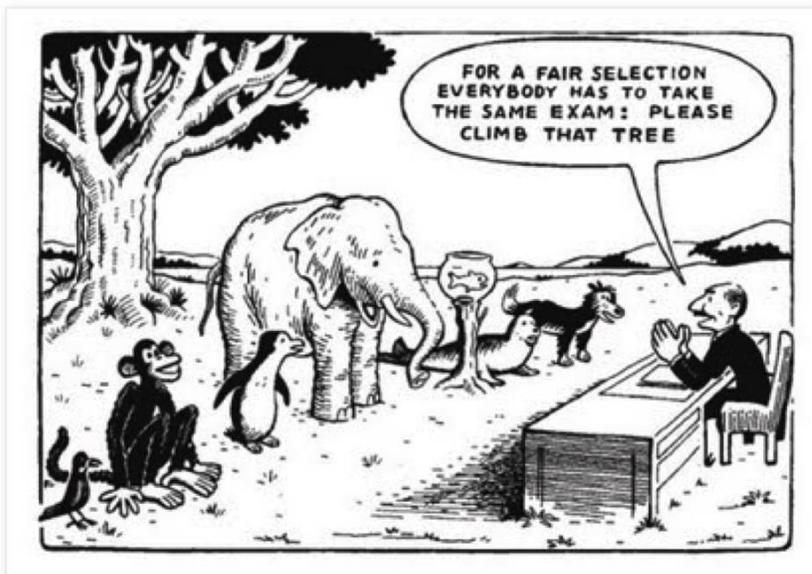
- In 1900, 41% of those employed in the United States were farmers.
- By 1999, only 2% of those employed were farmers.
- In 1900, manufacturing and agriculture comprised 59% of the U.S. economy.
- By 1999, manufacturing and agriculture comprised only 19% of the U.S. economy; services comprised nearly 68% of the U.S. economy.
- In 1993, the World Wide Web exploded like a supernova, bringing with it numerous opportunities to create value for others.

## *Pathways to Wealth*

On the road to wealth, there are three primary lanes: Career, Visioneur, and Investor.

Climbing the corporate ladder is one possible method that is becoming increasingly difficult in these fast-changing times. Visioneers are more likely to rise to the top. Look at the [Forbes 400](#) and you'll see numerous examples of the rich and famous that got there by founding and growing a company. The Kauffman Center for Entrepreneurial Leadership explains entrepreneurship as a process through which individuals and groups pursue opportunity, leverage resources, and initiate change to create value. For *visioneers* profits measure how effectively they improved the lives of their fellow human beings. And, those who invest in successful companies are also well represented among the wealthy.

## Soar With Your Strengths



*"Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid."*

*-Albert Einstein*

Rather than reinvent the wheel, let me tell you about a book called [Soar With Your Strengths](#) by Donald Clifton and Paula Nelson that will inspire those who want to achieve their absolute best.

To open, the authors tell a fun parable: *Let the Rabbits Run* which conveys the message of how important it is to focus on your strengths instead of trying to shore up your non-strengths (weaknesses). It tells a story of a rabbit that is going to school to become well-rounded; sound

familiar? Moving along, the rabbit excels in hopping and running classes. However, the rabbit didn't do so well in swimming class. Flying class was even worse; he couldn't even get off the ground. He felt like a failure. Naturally, his parents backed up the school's intention to create well-rounded students. And, the school counselor *helped* the rabbit by canceling his running and hopping classes and putting him in extra swimming and flying classes. Don't worry; there is a happy ending, courtesy of the Wise Old Owl.

Authors Clifton and Nelson offer an interesting book on how we, in business and in life, fail to focus on our strengths and manage our weaknesses. Consider how often the top salesperson is promoted into management, regardless of actual leadership ability.

The authors advocate "The Power Of One Simple Question" which is "What would happen if we studied what was right with people versus what's wrong with people?"

Applying the principles to my own life, I soon discovered that I too fell deeply into the trap of focusing on my non-strengths (weaknesses) instead of my strengths. In fact, there are some things I'm just better off not doing or at least delegating to others.

#### Take the Bull by the Horns

"Destiny is not a matter of chance, it is a matter of choice; it is not a thing to be waited for, it is a thing to be achieved." — William Jennings Bryan

Adapting to change is what success is all about. An American Proverb goes like this; "There are three kinds of people; those that make things happen, those that watch things happen and those who don't know what's happening." Look at nature. Africa is as real as it gets. When waters dry up, some animals dig in, others migrate, and in the end — they all adapt or they die. Humans are no different! Those who fail to adapt will be cast aside. While humans might not suffer physical death (because of social safety nets), those who fail to adapt to the changing world will be marginalized.

Let's look at technology. It's changing the world as we know it. First it was computers — no problem. Then they became *personal*. Again, nothing to worry about. Some machine-lovers decided to connect these *personal* computers together to create networks. That's when the fireworks started. Soon there were networks of networks — the internet. And then, the internet became mobilized — it fit in our pocket. Now AI, Robotics, and 3D Printing represent the rise of the machines which threaten humans once again. During the industrial revolution, machines decimated the need for manual work. Yet we still had our minds and we still do. But, intelligent machines are forcing us to dig deeper into our minds. Our rational left-sided brains are no match for computers. We need to tap our right-side, our imagination.

## The battle is on ... it's *Man* vs. Machine



In the coming years a lot of people are going to lose their jobs — their livelihood. Old ways of business will be tossed to the side. Yet for every threat, there's an opportunity. Visioneurs and investors are the ones who stand to profit — in spades.

People will end up with two choices; burying their heads in the sand or taking the bull by the horns. They will be unemployed or they can unleash their free-spirit.



***Take the Bull***



***By the Horns***

“Intelligence without ambition is a bird without wings.” — Salvador Dali

Tap into your inner ATM:

**A** - The 1<sup>st</sup> one’s really hard ... no one can give you ambition ... you either have it or you don’t

What’s stopping you? Time? Money? Is that all!

**T** - Everybody has 168 hours a week; it’s what you do with it that makes the difference.

**M** - Money isn’t that hard to come by if you’ve got the right idea .Especially with *crowd-funding* such as Kickstarter and Indiegogo.

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## VISIONEURS/ STARTUPS

### VISION

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"We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills..." — JFK, 1962

Whatever you're doing, ask yourself this — Why are you doing this ... besides money? Most people don’t bother with this question. Actually there are two ways to answer this question:

For yourself:

Visioneurs usually want to change the world or at least create really cool stuff. Their compelling reason might be ... excitement, fun, or for the thrill of creating something kick-ass!

For others:

Visioneurs working on *next-generation* software companies that help people live easier and more enjoyable lives may be doing it not for themselves, but to serve others. Technology holds the power to unleash the massive potential within individuals — if they grab hold and embrace the possibilities.

Vision is a force visioneurs can use to attract customers, employees, and investors. It’s a powerful force that will motive people to buy or help build a company. And, it’s self-perpetuating in the brand. Look at Apple (\$AAPL), the most valuable company in the world — or at least that’s what the market says. People love Apple!

## MONEY

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"Empty pockets never held anyone back. Only empty heads and empty hearts can do that."

— Norman Vincent Peale

Let's start off by defining money? What is this mysterious concept? (it's not even a piece of paper anymore since most money is nothing but a string of numbers, a *ghost in a machine*). Money is nothing more than a symbol of human energy. It's worth only what others agree its worth.

Wealth in modern society comes from applying energy and time to transform raw materials; even 1's and 0's — electrons inside a machine, into finished products that others want. Each person on earth has wants and possesses pent-up energy that he/she can choose to use or not.

With that said — money, as a symbol, acts as a catalyst to unleash the energy of others because it's the most universal symbol of energy that can be traded for the energy (i.e. goods and services) of others. When creating a startup, the founder(s) have a certain level of energy. Sadly though, many aspiring visioneurs adamantly say they can't start without money. In nearly all cases, this simply isn't true — especially in software and many other non-capital intensive industries. Today's economy is being driven by knowledge, not money.

## NOW VS. LATER

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In business there are two types of money — now money and later money. Now money is simply that ... cash in hand. Later money is the promise of money at some point in the future. Later money is particularly powerful when it's backed by a compelling vision. As your mapping out your ideas and strategy, keep this in mind — later money, in the form of equity, may be the most expensive money. Therefore, visioneurs need to resist the temptation to hand it out recklessly. Money needs to be set aside for professionals and managers who are critical to the venture.

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### LAND OF OPPORTUNITY:

For the longest time, the United States was known for being Land of Opportunity. And for the most part, the United States is still is — at least in spirit. Now, thanks to the internet, hotspots are all over the world. One of the fastest growing trends is urbanization. So, look around the world at the largest and fastest growing cities as potential dynamos. McKinsey created a really cool [interactive map](#) that shows 2010 population and GDP, and projects what 2025 GDP might look like for cities all over the world. Hotspots are all over the world, so it would be a mistake to automatically discount any one area. The world is full of visioneurs who dared to bring their ideas to life. Although technology is truly a double-edged sword, without it our standard of living would stagnate, and maybe even plummet. In reality, our standard of living only began to rise significantly in the past two centuries. Now, technology is raging like a full blown storm - knocking over everything in its path. Like Timbuk 3's song says "The Future's So Bright, I Gotta Wear Shades."

For inspiration, look at the younger generation — the best and brightest.

## SCIENCE FAIRS

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Science fairs offer a glimpse into the innovative potential and what's to come. Many large technology companies sponsor science fairs. Government also plays a role in stimulating innovative minds. Here are a couple of well-known fairs. Just remember; many, many more are out there — just search on *Science Fairs*.

- [Google Science Fair](#)
- [Intel Science & Engineering Fair](#)

High School students around the U.S. demonstrate a resurgence in STEM (Science, Technology, Engineering, and Math). As the 70's, 80,'s and 90's past, the U.S. neglected to upgrade its primary educational system. In fact, Craig R. Barrett, CEO of Intel flat out said that "we still do a very, very poor job of educating our kids" in science and math. Yet, with the results from the recent Intel Science Talent Search, there's renewed hope. And, might I add motivation. If High School kids can innovate at this level, what's our excuse?

## FAB LABS, HACKER/MAKERSPACES, AND TECH SHOPS

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The younger generation is more hands-on than ever. DIY is in their blood. Look at these organizations, study their culture, and get involved. If you want to catch a glimpse of the future, look at what the next generation is doing now. Look for stories about really cool, innovative kids. Here's the [map of hackerspaces](#), and [FabLabs](#). Check them out, there's some really cool stuff going on. With such divergent thinking around the world, the internet helps take our thinking to a much higher level.

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## MARKET POTENTIAL

Above all else, you need to assess the continued market potential for products. For example, the standalone digital camera market doesn't look promising as higher quality cameras are being integrated into Smartphones and other mobile devices. On the other hand, location-based services/ software may offer a large market as mobile broadband becomes ubiquitous.

The ultimate size of the market is determined by three variables:

- The number of product consumers. Not necessarily the number of customers, because in many cases customers buy products for others. So ask, how many people will ultimately use the product?
- How much are people willing to pay for the product?
- How often will consumers need to replace the product in question? Razor blades are replaced constantly, whereas refrigerators are bought much less often.

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### COMPETITIVE ADVANTAGE:

Simply stated, what makes this company different from all of the others? Are their products cheaper, higher quality, or easier to use?

Without some sort of differentiation, a company will most likely become extinct as other, more nimble players steal away the company's customers with more attractive offerings. Customers choose one company's products over others for both functional and emotional reasons:

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### FUNCTIONAL FACTORS:

While there may be many functional factors, here are some of the most important;

- Efficacy: The products ability to get the job done — everything else is icing on the cake.
- Price: Face it *price* matters! Better is beat all the time by good enough and cheaper.
- Convenience: Is it easy to learn about the product? Is it easy to buy the product? And, is it easy to use the product?

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### EMOTIONAL FACTORS:

While not always recognized, products create emotional responses in consumers. And, it's been said that we are ruled by our emotions. Here are some of the most important emotions to consider when looking at a company's product;

- Approval: Will others approve of a person using such a product? Embarrassment is a huge risk for many consumers and will be avoided at all cost.
- Effort: How will the consumer react to the product? Will the product require unlearning, or changing the way he/ she does things?
- Excitement: Will the product offer the consumer something exciting?
- Status: Is the product something that will convey a certain amount of status?
- Security: Does the product offer a sense of security and safety?

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### PRESENTATION POWER

No matter what you do, you'll need other peoples help. Being part of a team is the name of the game. Our society is just too complicated to do much of anything solo.

The key to winning is to create (or at least be part of) a powerful team. To do that you need to be able to convince others of your ability. As a team leader, you need to be able to show others that they will be successful if they join your team. If you're a team member, then you need to convince the team leader that they need you. Teams need to get jobs done. How is it that you'll be able to help get that job done? How can you convince others that you need to be on the team?

### *Know what you want*

Knowing what you want is the single most important part of being a successful team member (either as a leader or member).

- What is it that you want from being on the team?
- What are your talents, skills, and capabilities?
- How can you help the team get a job done?
- Why do you want to be part of the team — besides money?

### *Never look desperate*

"Desperation is like stealing from the Mafia: you stand a good chance of attracting the wrong attention" — Doug Horton

Desperation is a sign of a loser. Dogs can sense fear in people. People can sense ill-ease and desperation. And, it's a turn-off. By looking desperate you look like a loser. No one wants to be associated with a loser.

People want to be associated with other winners. Confidence is shiny; it attracts others who are successful. One of the best ways to be confident is to know what you're doing — rock solid. That's why it's so important to know and follow your talents. Talents underlie strength and create consistent, near perfect performance. Think Michael Jordan — a legendary Basketball player, a so-so Baseball player.

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## INVESTORS

Stocks? Companies? They're not the same. Sure, they're related, but as legendary investor Benjamin Graham says in the *Intelligent Investor* "Companies may be good or bad, but there is no such thing as a good stock, only good stock prices which come and go."

Valuation is what differentiates stocks from underlying companies. Even though a company may offer the greatest products, hire the world's most brilliant people, and sell their products at obscene profits — the stock may be priced out of this world, making for a poor or even negative *return on investment*.

Valuation is comprised of *performance* and *potential*. Performance is historical, indicating what management did in the past and is at the very least a sign of how well management may do in the future. However, its potential is why investors fork over their cash and is where stocks and companies share common ground. Potential is about assessing the future and how to exploit opportunities.

In investing, getting in early spells the difference between so-so returns and Cha-Ching! Look at Apple (\$AAPL); it was less than \$1 (split-adjusted) in 2003, and hit over \$130 in 2015.

That's a 100+ bagger! ARM Holdings (\$ARMH) rode the mobile revolution for a 25x return. Google (\$GOOG) which IPO'd in 2004 is (so far) only about a 10 bagger. And these returns are for outside, public investors. Imagine the return for early-stage, private investors — astronomical!

Another difference between visionaries is that for investors there's a whole world out there full of financial instruments. First of all, investors can make money if a stock soars by going long or if the stock crashes, by going short. Plus they can bet on entire countries (currencies or ETFs), sectors, or commodities. They can even explore derivatives such as options to make money on whatever goes up or down.

In the end though, there are 3 kinds of people:

- Those who make it happen.
- Those who wait for it to happen.
- And those who wonder 'what happened?'

Make it happen!

Successful investors master both psychology and technical aspects of the financial world. Investing is about assessing value, or more accurately — the perception of value. Investing is all about perception, not reality.

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## INVESTOR PSYCHOLOGY

Ego is the number one enemy of investors. Bias kills lots of investors. Needing to be right is the absolute wrong frame of mind.

Remember — “If stock market experts were so expert, they would be buying stock, not selling advice.” Norman R. Augustine

## MEAN GENES

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[Mean Genes](#): *From Sex to Money to Food: Taming Our Primal Instincts* is a book by Terry Burnham and Jay Phelan that helps to understand who's really in charge.

While Mean Genes is a book about a wide range of topics from sex to money to food and addiction, it's extremely useful to understand that the number one reason people lose money investing is lack of self-control.

Mean Genes will help you understand who you are and most importantly how to control your inner saboteur.

"Our brain, for better or worse, is not an obedient servant ... Imagine that you are two things: a personality who has likes, dislikes, desires, and dreams. But inside your body there is also a

'machine,' your brain, that processes commands and acts on those likes, dislikes, desires, and dreams. It fights you all the time. And it usually wins."

"... the source of our self-control problem lies within us, in our genes."

Although I highly recommend you read every single chapter, there are three chapters you may want to read over and over again: Risk, Thrill-seeking genes taking us for a ride | Greed, Running fast on the happiness treadmill | and the Conclusion, Surviving desire.

## ART OF CONTRARY THINKING

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The [Art of Contrary Thinking](#) by Humphrey B. Neill is exceptional to say the least — a real thought provoking book on how to think as a contrarian.

"When everybody thinks alike, everyone is likely to be wrong." Clearly illustrates that *following the pack* can be dangerous.

Look at the Smart Money. Most are contrarians. They almost have to be. Investing huge amounts of money means easing into the market and sneaking out the back door.

Warren Buffett's done this exceptionally well for a long time — "We simply attempt to be fearful when others are greedy and to be greedy only when others are fearful" which in a sense is a restatement of what Rothschild said in the 18th century — "The time to buy is when there's blood in the streets."

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## ASSESSING POTENTIAL

### COMPETITIVE SPIRIT, OR LACK THEREOF

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For investors it's essential to buy into companies with competitive spirit.

While spirit alone doesn't propel companies to new heights, it's an essential ingredient to greatness. Being hungry for business lies at the foundation of growth. Companies transform resources into valuable products and services for customers. Barring government interference, business is a battlefield where companies either kill or be killed.

Take no prisoners — either you serve the customer or a competitor will. Companies opting to play softball or keep-away will ultimately lose their edge. In essence, companies fall into one of four stages: Stagnation, Decline, Turnaround, or Growth.

### *Stagnation:*

Although profits may rise from year to year, nothing exciting is in the air. Companies in this zone are comfortable with the status quo. Revenues are up some, and profits are up some. Market share is stable. Overall, managers are lackadaisical and are just going along for the ride.

### *Decline:*

Ignoring or denying the need for change — either consciously or unconsciously leads to a decline. This decline may be slow, occurring over many years or rapid. In either case, the company will most likely die. In the end, these types of companies are sold off to other companies who in turn attempt to resuscitate the company's products (services) or the company may be sold off at auction — piece by piece.

### *Turnaround:*

When profits are being decimated, and management recognizes and acts on the need to change, a turnaround situation exists. New strategies and maybe even an entirely new business model may be needed to steer the ship into safer waters.

### *Growth:*

When strategies are in place and being smoothly executed, companies are in their growth phase. Here the battlefield is thoroughly surveyed, troops are in place, and the offensive is launched. The key to staying in the growth phase is to always be on the offensive. Never let your guard down. Companies need to be, as Andy Grove puts it, Paranoid!

When investing it's important to know what stage a company is in and whether or not other investors recognize this fact. Companies in stagnation seldom rise above mediocrity — although blind euphoria may occur from time to time

Competitive battles are meant to be won. Some will live and some will die — that's nature, and business. As an investor, you want to identify the ongoing battles, survey the landscape, and spot opportunities and threats. Then it's time to assess the strengths and weaknesses of the players on the field. Spotting opportunities and those who will ultimately capitalize on those opportunities may result in spectacular gains — if done before other investors jump on the bandwagon.

## BLOOD IN THE WATER

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Like sharks, competitors are constantly searching and attacking. Whereas sharks are highly tuned to blood in the water, competitors are keenly aware of economic profit. An excellent way for investors to search out opportunities is to look at profit margins of industry players. In essence, there are three factors to consider, Competition, Defensive opportunities, and Offensive opportunities.

## *Competition*

Competition doesn't just concern management, it concerns investors too. Rivalry among industry players is perhaps the most limiting factor in scoring above average profits. Competition sets the benchmark for performance. Like in the Olympics, entry-level performance is continually rising.

Investors must always keep an eye on competitors, both existing and perhaps more importantly on emerging players who may launch sneak attacks. For a more in-depth look at rivalry, be sure to check out Michael Porter's [Competitive Strategy](#) pp. 138-141.

Show me the money, is what investors want! In contrast to management, investors are poised to capitalize on a wide variety of profit opportunities — either defensive or offensive.

## *Defense*

Defensive opportunities revolve around betting on the incumbent, or dominant player. As an example, in the war for the Mobile high ground, traditional Telecom players already hold a dominant position. In the U.S., AT&T [T] and Verizon [VZ] hold the most dominant positions as leading carriers. Apple (AAPL) is the leading device maker. Everyone's waiting for Apple's downfall, but the bulls clearly hold all the cards. Eventually, Apple will slow down — the question is when?

To spot defensive opportunities, investors must explore the industry value chain with an eye toward [moats](#) or defensible positions/ strategies. Incumbents with dominant positions are often referred to as Rule Makers. As such, they lead the market and hold a war chest of resources.

While bulk often dulls responsiveness and may lead to rigidity, massive resources serve as powerful weapons to fight off would-be competitors. When looking at rule makers, it's important for investors to look up and down the value chain. Even if the incumbent prevails, more lucrative opportunities may lie with other players such as suppliers or complementors.

## *Offense*

Offensive opportunities involve betting on emerging or even potential competitors likely to disrupt traditional players. Their aim is to either steal away market share or stake out new territory that will eventually cut incumbents off at the pass.

When looking at offensive players, the key is to look at the incumbent's moat. However, this time you need to look at it from an *attack* point of view. How can traditional players be attacked? What are their weak points? And, most importantly — what players are willing and able to attack with a new, sustainable profit-model?

One place to start your search for these companies is to look at the MD&A section of incumbent 10-K's for who management feels are competitors. Next, do a comprehensive search for relevant news articles. Attend industry conferences and talk with just about everybody, especially competitors and suppliers.

Another way to identify potential emerging players is to look at Venture Capitalists. Who are they backing and why? These companies will be either sold to larger companies or as IPO's. Keep your eye on those VC's who fund the types of companies that interest you. A few good sources are the [WSJ](#) and [VentureBeat](#).

Competition is perhaps the most powerful force in the business world. As such, investors need to sharpen their skills in accessing potential rivals and learn to look up and down the value chain. Investors are in a unique position to capitalize on both opportunities and threats facing a company by investing in the companies themselves, their competitors, suppliers, and complementors — both long and short.

#### ENGINES THAT MOVE MARKETS

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[Engines that Move Markets](#): *Technology Investing from Railroads to the Internet and Beyond* by Alasdair Nairn shows us that technology has, is, and will continue to change the world around us. Engines That Move Markets explores the impact of some great technological inventions of the past two hundred years.

Chronologically, Nairn explores:

Chapter 1 Making Tracks: The Industrial Revolution, Canals, and Railways.

Chapter 2 Breaking Out: The Story of the U.S. Railroads.

Chapter 3 Investing at the Speed of Sound: How the Telephone Changed Everything.

Chapter 4 Lighting Up: Edison and the Electric Lamp.

Chapter 5 Digging Deep: The Search for Oil.

Chapter 6 Driving Forward: The History of the Automobile.

Chapter 7 Making Waves: The Story of Wireless, from Marconi to Baird.

Chapter 8 Making It Count: From Adding Machines to Mainframes.

Chapter 9 Processing Power for All: The Rise of the PC.

Chapter 10 The Internet: How Time-Share Computing Became a Reality.

Chapter 11 The Pathology of Technology Investing.

"Markets are constantly in a state of uncertainty and flux and money is made by discounting the obvious and betting on the unexpected." — George Soros

[Finding the Next Starbucks](#): How to Identify and Invest in the Hot Stocks of Tomorrow by Michael Moe is an eye-opener. If you're a growth investor, or aspiring to be one — this book is for you. When I first saw this book at Barnes & Noble — I just had to buy it.

I'm going to force myself to be concise here, because I could go on all day about *Finding the Next Starbucks*. Check out:

Page:

55) 10 Commandments

57) Finding Megawinners (Diagram) Excellent!!!

217) Finding Ideas

331) Preliminary Growth Stock Analysis

There, I did it. In truth there is so much to this book; I didn't really do it justice. My copy is one great big ink blob from all the marking up — page after page. A must read!

Peter Lynch says this on the Back Cover:

“This is an important book for both growth investors and entrepreneurs. Investing in growth companies can be very rewarding if done correctly, but it requires doing your homework, it’s not gambling or speculating. Finding the Next Starbucks gives a systematic guideline for how to do it better. Michael has also included a collection of insights and interviews with over thirty pros who offer outstanding ideas on investing in very dynamic companies.”

SNIPER @ 10 O'CLOCK

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Every day, public companies pay homage to Wall Street. Private companies backed by Venture Capitalists or Private Equity firms also walk a fine line to appease the real owners — the stockholder! Plus, as if that wasn't enough, lenders must be treated with the utmost of respect too.

Investors, as *money suppliers* can choke the life out of most businesses simply by cutting off the supply of cash to the company in question. Although they don't inflict real pain instantaneously, their wrath is especially powerful in the case of financial lenders. Investors need to make sure corporate executives understand that running low on cash is not an option. Cash speeds things up and a lack of it is like poison — it kills.

1) Cash speeds things up. Like high-octane fuel, performance (the ability to get things done) is greatly enhanced by those flush with cash. Bootstrapping only takes start-ups so far. When Venture Capitalists step in, the company is able to ascend to new heights thanks in large part to the influx of cash which buys much needed talent and resources. Private Equity firms often buy

up cash strapped firms, inject new resources (which cash buys), and restructure operations to create a leaner, more robust company. Initial Public Offerings (IPO's) inject cash into new public companies that are then able to expand into new markets, create new products, and strengthen their overall operations.

While stock options promise great returns for option holders of successful companies, they also hold great risk — they might become worthless. With cash there is no question of what it's worth. After the dot-com collapse, many suppliers and resource providers simply didn't see the upside potential of options — they wanted cash.

2) Running low is not an option. Dwindling cash reserves and wavering credit lines are like leaking oil in a car. Sooner or later systems start to breakdown, overheat, and stop working.

Companies running low on cash suffer all sorts of problems. With just a whiff in the air of money problems, suppliers start demanding cash up front. By the same token, customers dream up worst case scenarios for the company and shy away, thinking to themselves — will this company be around to service, support, and upgrade the product. Plus, the best employees may start walking toward the door — just when the company needs them the most. As you can see, running low on cash is problematic for a company and for investors going long.

3) And, it's not their money. Truth be told, managers are employees acting on behalf of stockholders. Lenders do exactly that — lend money to the company, which they expect back ... with interest!

Corporate leaders are employed by stockholders to grow the company and maximize their return on investment. Investors may be either short-term or long-term oriented, but in the end — they are right because it's their money on the line. As such, company managers are paid (quite well in many cases) to maximize current profits and position the company for a prosperous, profit-filled future.

Investors going long or short should pay special attention to the Cash-Flow statement. On the long side, knowing a company's cash situation will help avoid booking a trip on the Titanic. On the flip side, going short on the Titanic or Hindenburg may be a great idea.



While not the richest man in the world, Trump is one of the most resilient. On the Forbes 400, his wealth is estimated at just over \$4 Billion. Therefore, I'm all ears when it comes to advice straight from the horse's mouth.

Trump's book on How to Get Rich is chock full of advice, especially for getting off the ground.

Trump also says that "Negativity is also a form of fear, and fear can be paralyzing." So true! Negativity is probably the number one reason startups never get off the ground. After all "How can you fly if you've already clipped your own wings?"

On the subject of employees, Trump places responsibility in his own hands. As a manager "...his bad performance is not his fault, but mine: I simply hired the wrong person by overestimating his capabilities. I add that if he'd like to change my mind about my initial mistake, it's up to him." — Priceless!

"Get going ... Don't just sit on the runway and hope someone will come along and push the airplane." — Donald Trump



Wow, that was long ride. We talked about change, driving forces, emerging technologies, and most importantly taking the bull by the horns!

Now it's time to get out there and either create or invest in the next big thing.

It's time to make some money! Change offers nearly *endless possibilities* for products and solutions that make our lives easier and more enjoyable.

Check out what's happening on the edge. What's happening in hackerspaces? What's popular on crowd-funding sites? Use your imagination. What will consumers want in the future?

Search "Failed Predictions" for an eyeful of wild projections — such as the *food pill!* Uh ... even if the science worked, how would a pill compete with pizza? As you anticipate the future, keep in mind that just because something is possible, doesn't mean there's a real market for it. 3D Printing and robotics will change the world around us in unexpected ways — especially in light of open electronics.

Understand the landscape first. Look at the *big picture* — past, present, and future. And, remember that dynamic, future industries are more likely to create compelling opportunities to be capitalized. Use your imagination to figure these out. Use PEST, ViPR, Story Time, Finding Midas, and other tools to evaluate potential game changers.

Great companies swing and miss, a lot. But when they do connect, they score home runs. Looking back over the past 10 years, imagine getting in early on Amazon, Apple, Google, or more recently, Tesla. Finding them won't be easy, but if you do find them — Cha-Ching!

**Michael A. Davis is a visionary, known for his insights into game changing technologies — the next big thing! After nearly two decades in Finance and IT, Michael now engages in the search for game changers full-time.**

**Michael's love for technology emerged at an early age and never stopped growing. He loves inspiring people to think BIG, and is known for “Thinking the Unthinkable!”**

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# Creating and investing in Game Changers



**Money measures  
success.**

**It's not about luck!**

**It's about adapting to  
change.**

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- *Splat!* is all about seeing through the fog, and capitalizing on change.
  - As the world accelerates at warp speed, it's critical to understand what's really going on.
  - Money-making is all about spirit. It's about getting paid for results. Visioneurs dream up *the next big thing*, and financial investors add fuel to the fire.

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In *Splat!* you'll learn about:

- The 5 W's of change, and psychological driving forces.
- Disruptive innovation and Big Bang disruption.
- How to see the Big Picture.
- Tomorrow's internet & the Rise of the machines.
- How to *mine the past* for insights, *think for yourself*, and *expand your horizons*.
- Skating ahead and spotting opportunities early.
- **Taking the bull by the horns!**