

**Excellence. NO EXCUSES!**

**Excerpt:**

**TOMORROW HAS  
ARRIVED  
(WOW!)**

**Tom Peters**

**29 May 2014**

Some (Whacky-but-**VERY**-real) “Stuff”

**G**enetics

**R**obotics

**I**nformatics

**N**anotechnology

There is no order to what follows. It is simply a collection of rather provocative quotes from my recent “new stuff” reading. Principal topics: Algorithmic determinism, Big Data, Social Business, and “gamification.”

The (**VERY**) BIG 4: GRIN\*

**Genetics**

**Robotics**

**Informatics**

**Nanotechnology**

\*Decision #1: GRIN and BEAR it? GRIN, get to work, and SAVOR it?

## **Disruptive Technologies: Advances That Will Transform Life, Business, and the Global Economy**

- Mobile Internet
- Automation of knowledge work
- The Internet of Things
- Cloud technology
- Advanced robotics
- Autonomous and near-autonomous vehicles
- Next-generation genomics
- Energy storage
- 3-D printing
- Advanced materials
- Advanced oil and gas recovery
- Renewable energy

Source: McKinsey Global Institute/May 2013

*“Human level capability has not turned out to be a special stopping point from an engineering perspective. ...”* —Illah Reza Nourbakhsh, *Robot Futures*

*“The combination of new market rules and new technology was turning the stock market into a ...*  
*war of robots.”*

—Michael Lewis, “Goldman’s Geek Tragedy” (*Vanity Fair*)

*“The root of our problem is not that we’re in a Great Recession or a Great Stagnation, but rather that we are in the early throes of a Great Restructuring. Our technologies are racing ahead, but our skills and organizations are lagging behind.”*

—Erik Brynjolfsson and Andrew McAfee *Race Against The Machine*

***“The median  
worker is  
losing the  
race against  
the machine.”***

—Erik Brynjolfsson and Andrew McAfee, *Race Against The Machine*

***“A bureaucrat is an expensive microchip.”***

—Dan Sullivan, *consultant and executive coach*

***“Meet Your Next Surgeon: Dr.  
Robot”***

—*Fortune/15 JAN 2013/on Intuitive Surgical’s da Vinci/multiple  
bypass heart-surgery robot*

## Algorithm Appointed to VC's Board!

*“A Hong Kong VC fund has just appointed an algorithm to its board.*

“Deep Knowledge Ventures, a firm that focuses on age-related disease drugs and regenerative medicine projects, says the program, called **VITAL**, can make investment recommendations about life sciences firms by poring over large amounts of data.

*“Just like other members of the board, the algorithm gets to vote on whether the firm makes an investment in a specific company or not. The program will be the sixth member of DKV's board.*

“VITAL's software was developed by UK-based Aging Analytics. ‘[The goal] is actually to draw attention to developing it as an independent decision maker,’ Deep Knowledge Venture's Charles Groome told BI.

“How does the algorithm work? VITAL makes its decisions by scanning prospective companies' financing, clinical trials, intellectual property, and previous funding rounds.

“Groome says it has already helped approved two investment decisions (though has not yet cast its first vote), both of which resemble its own function: In Silico Medicine, which develops computer-assisted methods for drug discovery in aging research; and In Silico's partner firm Pathway Pharmaceuticals, which employs a platform called OncoFinder to select and rate personalized cancer therapies.”

—*Business Insider*, 13 May 2014

(Note: The author suggests, doubtless correctly, that this was part PR stunt. Nonetheless, in my opinion, it is at the same time a non-trivial portent of things to come.)

*“Automation has become so sophisticated that on a typical passenger flight ... **a human pilot holds the controls for a grand total of ... 3 minutes.***

*[Pilots] have become, it’s not much of an exaggeration to say, computer operators.”*

—Nicholas Carr, “The Great Forgetting,” *the Atlantic*, 11.2013

Curing Short Attention Spans: *“My **Busy Bucket** will ship a plastic tub containing two hundred dollars worth of books, CDs, DVDs, puzzles, crafts, and toys (mostly wooden ones from Europe) to your offspring, and after twenty-one or thirty days, depending on your plan, a very nice FedEx man will make the package go bye-bye. The exact assortment of amusements is tailored to the munchkin’s age (newborn to six) and the customer-selected theme (such as dress-up, sports, superheroes, princess/fairy).”*

—Patricia Marx, “Outsource Yourself,” *the New Yorker*, 01.14.2013 (on Audrey Zardkoochi & Elizabeth Baumgarten, founders of the toy rental company Busy Bucket)

*“The prospect of contracting a gofer on an a la carte basis is enticing. For instance, wouldn’t it be convenient if I could outsource someone to write a paragraph here, explaining the history of outsourcing in America? Good idea! I went ahead and commissioned just such a paragraph from Get Friday, a ‘virtual personal assistant firm based in Bangalore. ... The paragraph arrived in my in-box ten days after I ordered it. It was 1,356 words. There is a bibliography with eleven sources. ... At \$14 an hour for seven hours of work, the cost came to \$98. ...”*

*—Patricia Marx, “Outsource Yourself,” the New Yorker, 01.14.2013 (Marx describes in detail contracting out everything associated with hosting her book club—including the provision of “witty” comments on Proust, since she hadn’t had time to read the book—excellent comments only set her back \$5; the writer/contractor turned out to be a 14-year-old girl from New Jersey.)*



***“Algorithms have already written symphonies as moving as those composed by Beethoven, picked through legalese with the deftness of a senior law partner, diagnosed patients with more accuracy than a doctor, written news articles with the smooth hand of a seasoned reporter, and driven vehicles on urban highways with far better control than a human driver.”*** —Christopher Steiner, *Automate This: How Algorithms Came to Rule the World*

Shades of Ned Ludd: ***“When Emmy [algorithm] produced orchestral pieces so impressive that some music scholars failed to identify them as the work of a machine, [Prof. David] Cope instantly created legions of enemies. ... At an academic conference in Germany, one of his peers walked up to him and whacked him on the nose. ...”***  
—Christopher Steiner, *Automate This: How Algorithms Came to Rule the World*

*Automate  
This: How  
Algorithms  
Came to Rule  
the World*

—Christopher Steiner

*“Customer engagement is moving from relatively isolated market transactions to deeply connected and sustained social relationships. This basic change in how we do business will make an impact on just about everything we do.”*—Dion Hinchcliffe & Peter Kim, *Social Business by Design: Transformative Social Media Strategies For the Connected Company*

## Social Survival Manifesto\*

1. **Hiding is not an option.**
2. Face it, you are outnumbered. [“Level playing field, arrogance denied.”]
3. **You no longer control the message.**
4. Try acting like ... a human being.
5. Learn to listen, or else. [“REALLY listening to others is a must.”]
6. Admit that you don’t have all the answers.
7. Speak plainly and seek to inform.
8. Quit being a monolith. [“Your employees, speaking online as individuals, are a crucial resource ... can be managed through frameworks that ENCOURAGE participation.”]
9. Try being less evil.
10. Pay it forward, now. [“Internet culture is largely built on the principle of the Gift Economy ... give value away to your online communities.”]

\*Tom Liacas; [socialdisruptions.com](http://socialdisruptions.com)

Winning in Marketplace 2013: An Ethos of Helping ZMOT:  
**ZERO Moment Of Truth/Google\***

*“You know what a ‘moment of truth’ is. It’s when a prospective customer decides either to take the next step in the purchase funnel, or to exit and seek other options. ... But what is a ‘zero moment of truth’? Many behaviors can serve as a zero moment of truth, but what binds them together is that the purchase is being researched and considered before the prospect even enters the classic sales funnel ... In its research, Google found that*

**84%** *of shoppers said the new mental*

*model ...* **ZMOT** *... shapes their decisions. ...”*

—Jay Baer, *Youility: Why Smart Marketing Is About Help, Not Hype*

\*See [www.zeromomentoftruth.com](http://www.zeromomentoftruth.com) for ZMOT in booklength format.

## ***ROI/Return on Influence: The Revolutionary Power of Klout, Social Scoring, and Influence Marketing—Mark Schaeffer***

*“When [Sam Fiorella] spoke at conferences, he made sure every slide had a ‘tweetable quote’ aimed at the Klout algorithm and asked attendees to tweet his name throughout the presentation. He engineered his online engagement to attract the attention of high Klout influencers who could bend his score upward and filtered his followers by their level of influence so that he knew which contacts to nurture to affect his score ... Within a few months, Sam had driven his score up to an elite level of 70.”*

*“When Virgin America opened its Toronto route, it asked Klout to find a small group of influencers to receive a free flight in hopes that they’d effectively spread the word. ... After the initial 120 participants and an additional 144 engaged influencers had been accrued, the word-of-mouth power kicked in as those highly social individuals generated more than 4,600 tweets about the new route. That led to more than 7.4 million impressions and coverage in top blogs and news outlets such as the LA Times and CNN.”*

***“Amy Howell*** [social marketer extraordinaire, founder of  
Howell Marketing] ***ignites epidemics. In  
a good way, of course.  
Epidemics of excitement.  
Epidemics of business  
connections. Epidemics of  
influence.”***

*“Social scoring is creating new classes of haves and have nots, social media elites and losers, frenzied attempts to crash the upper class, and deepening resentments. Social scoring is also the centerpiece of an extraordinary marketing movement. For the first time, companies can—with growing confidence—identify, quantify, and nurture valuable word-of-mouth influencers who can uniquely drive demand for their products.”*

*“How do we help the restaurant that just opened find the 10 coolest people in the neighborhood they need to try their food so they can get good word of mouth going?*

*We can definitely enable that. Another idea I like: **When I slide my credit card at any register, my Klout score should come up and they should be able to see, ‘Wow, we have a whale here, and so I’m going to go above and beyond to make sure this person has a good experience.’**”*—Joe Fernandez, CEO of Klout (in Mark Schaeffer, *ROI/Return on Influence*)

***Social Business By Design: Transformative Social Media Strategies For the Connected Company*** (Donald Hinchcliffe & Peter Kim)

**Teva Canada: Supply chain excellence achieved. Share-Point/troubleshooting/Strategy-Nets/hooked to other functions; Moxie social tools, document editing, etc.**

**IBM: Social business tools/30 percent drop in project completion time/300K on LinkedIn, 200K on Facebook.**

**MillerCoors: Gender imbalance. Women of Sales peer support. Private network. Attrition plummeted.**

**Bloomberg: Mobi social media analytics prelude to stock performance.**

**Intuit: TurboTax struggling against H&R Block temp staffing/customers #1 asset/Live Community, focused on help with transactions.**

## **Seven Characteristics of the Social Employee**

- 1. Engaged**
- 2. Expects Integration of the Personal and Professional**
- 3. Buys Into the Brand's Story**
- 4. Born Collaborator**
- 5. Listens**
- 6. Customer-Centric**
- 7. Empowered Change Agent**

Source: Cheryl Burgess & Mark Burgess, *The Social Employee*



Marbles, a Ball, and Social Employees at IBM: *“Picture a ball and a bag of marbles side by side. The two items might have the same volume—that is, if you dropped them into a bucket, they would displace the same amount of water. The difference, however, lies in the surface area, because a bag of marbles is comprised of several individual pieces, the combined surface area of all the marbles far outstrips the surface area of a single ball. The expanded surface area represents a social brand’s increased diversity. These surfaces connect and interact with each other in unique ways, offering customers and employees alike a variety of paths toward a myriad of solutions. If none of the paths prove to be suitable, social employees can carve out new paths on their **OWN.**”*—Ethan McCarty, Director of Enterprise Social Strategy, IBM (from Cheryl Burgess & Mark Burgess, *The Social Employee*)

## **IBM Social Business Markers/2005-2012**

- \*433,000 employees on IBM Connection**
- \*26,000 individual blogs**
- \*91,000 communities**
- \*62,000 wikis**
- \*50,000,000 IMs/day**
- \*200,000 employees on Facebook**
- \*295, 000 employees/800,000 followers of the brand**
- \*35,000 on Twitter**

Source: IBM case, in Cheryl Burgess & Mark Burgess, *The Social Employee*

**Gamification: “Gamification presents the best tools humanity has ever had to create and sustain engagement in people.”**—Gabe Zichermann & Joselin Linder, *Gamification: How Leaders Leverage Game Mechanics to Crush the Competition*

*“The popularity of an unwinnable game like Tetris completely upends the stereotype that gamers are highly competitive people who care more about winning than anything else. Competition and winning are not defining traits of games—nor are they defining interests of the people who love to play them. Many gamers would rather keep playing than win. In high-feedback games, the state of being intensely engaged may ultimately be more pleasurable than the satisfaction of winning.”*

—Jane McGonigal, *Reality Is Broken: Why Games Make Us Better and How They Can Change the World*

*“The kind of thinking on my bedroom floor [as a boy, playing APBA, Strat-o-Matic, Statis Pro Baseball] became an everyday component of mass entertainment. [This book] is the story of how systems analysis, probability theory, pattern recognition, and—amazingly enough—old-fashioned patience became indispensable tools for anyone trying to make sense of pop culture. The truth of my solitary obsession with modeling complex simulations is now ordinary behavior for most consumers of digital-age entertainment. This kind of education is not happening in classrooms or museums; it’s happening in living rooms and basements, on PCs and television screens. This is the Sleeper Curve [from Woody Allen’s movie “Sleeper”] ...”*

—Steven Johnson, *Everything Bad Is Good For You: How Today’s Popular Culture Is Actually Making Us Smarter*

It Ain't About the Ws and Ls: ***“Fun from games arises out of mastery. It arises out of comprehension. It is the act of solving puzzles that makes games fun. In other words, with games, learning is the drug.”***

—Raph Koster, *A Theory of Fun For Game Designers*

Towards Addiction to ... LEARNING: ***“When I enter a video game, I learn something about a fictitious world. And in that video game, I’m allowed to go at my own pace. I’m constantly assessed—assessment becomes my friend. I feel good when I master the next level. If you could only take that experience of a video game back into student learning, we could make learning addictive. My deep, deep desire is to find a magic formula for learning in the online age that would make it as addictive as playing video games.”***—Sebastian Thrum, founder, Udacity, lead developer of Google Glass, etc. (*Foreign Affairs*, 11-12.2013)

Work.com/Salesforce.com: ***“... suite of mobile apps that enabled people inside the organization to provide instant feedback to their co-workers for a job well done” “Facebook-style newsfeed,” “badges, leaderboards, point systems” “turned the review process into something people actually want to do”***—Gabe Zichermann & Joselin Linder, *The Gamification Revolution: How Leaders Leverage Game Mechanics to Crush the Competition*

“Idea Street”/UK Department of Work and Pensions (28% UK budget): ***“Staff provide innovative ideas and vote for the best ones” “first nine months: \$16 million in savings” “meaning was within the game itself, not the external reward”***—Gabe Zichermann & Joselin Linder *The Gamification Revolution: How Leaders Leverage Game Mechanics to Crush the Competition*

*“Why exactly are we competing with each other to do the dirty work? We’re playing a free online game called **Chore Wars**—and it just so happens that ridding our real-world kingdom of toilet stains is worth more experience points, or XP, than any other chore in our apartment. ... A mom in Texas describes a typical Chore Wars experience: **‘We have three kids, ages 9, 8, and 7. I sat down with the kids, showed them their characters and the adventures, and they literally jumped up and ran off to complete their chosen task. I’ve never seen my 8-year-old son make his bed. I nearly fainted when my husband cleaned out the toaster oven.’ ...**”*

*—Jane McGonigal, **Reality Is Broken: Why Games Make Us Better and How They Can Change the World***

*“When I work with experimental digital gadgets, I am always reminded of how small changes in the details of a digital design can have profound unforeseen effects on the experiences of the people who are playing with it. **The slightest change in something as seemingly trivial as the ease of use of a button can sometimes alter behavior patterns. For instance, Stanford University researcher Jeremy Bailinson has demonstrated that changing the height of one’s avatars in immersive virtual reality transforms self-esteem and social self-perception.** Technologies are extensions of ourselves, and, like the avatars in Jeremy’s lab, our identities can be shifted by the quirks of gadgets. It is impossible to work with information technology without also engaging in social engineering.”*—Jaron Lanier, *You Are Not a Gadget*

“[Michael Vassar/MetaMed founder] is creating a better information system and new class of people to manage it. ‘Almost all healthcare people get is going to be done—hopefully—by algorithms within a decade or two. We used to rely on doctors to be experts, and we’ve crowded them into being something like factory workers, where their job is to see one patient every 8 to 11 minutes and implement a by-the-book solution. I’m talking about creating a new ‘expert profession’—medical quants, almost like hedgefund managers, who could do the high-level analytical work of directing all the information that flows into the world’s hard drives. Doctors would now be aided by Vassar’s new information experts who would be aided by advanced artificial intelligence.”—New York/0624.13

*“When you ask [Cloudera founder Jeffrey] Hammerbacher what he sees as the most promising field that could be hacked by people like himself, he responds with two words: ‘Medical diagnostics.’ And clearly doctors should be watching their backs, but they should be extra vigilant knowing that the smartest guys of our generation—people like Hammerbacher—are gunning for them. The targets on their [M.D.s] backs will only grow larger as their complication rates, their test results and their practices are scrutinized by the unyielding eye of algorithms built by smart engineers. Doctors aren’t going away, but those who want to ensure their employment in the future should find ways to be exceptional. Bots can handle the grunt work, the work that falls to our average practitioners.”*

—Christopher Steiner, *Automate This: How Algorithms Came to Rule the World*

*“[These HP] pioneers may not realize just how big a shift this practice is from a cultural standpoint. The computer is doing more than obeying the usual mechanical orders to retain facts and figures. It’s producing new information that’s so powerful, it must be handled with a new kind of care. We’re in a new world in which systems not only divine new, important information, but must carefully manage it as well.”*—Eric Siegel, *Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie, or Die* (based on a real case, an HP “Flight risk” PA model developed by HR, with astronomical savings potential)

*“1-800-FLOWERS improved its ability to detect fraud by considering the social connections between prospective*

*perpetrators.”*—Eric Siegel, *Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie, or Die*

*“Aviva, a large insurance firm, has studied the idea of using credit reports and consumer-marketing data as proxies for the analysis of blood and urine samples for certain applicants. The intent is to identify those who may be at higher risk of illnesses like high blood pressure, diabetes, or depression. The method uses lifestyle data that includes hundreds of variables such as hobbies, the websites people visit, and the amount of television they watch, as well as estimates of their income. Aviva’s predictive model, developed by Deloitte Consulting, was considered successful at identifying health risks.”*

—Viktor Mayer-Schonberger and Kenneth Cukier, *Big Data: A Revolution That Will Transform How We Live, Work, and Think*



*“By harnessing the ‘wisdom of crowds,’ many subjective observations taken together provide a more objective and accurate picture of an employee’s performance than a single subjective judgment. It averages out prejudice or baggage on the part of both manager and employee.”—Eric Mosley, *The Crowd Sourced Performance Review**

*“Some people rush for a deal, others think that the deal means the merchandise is subpar. Just by eliminating the persuasion styles that rub people the wrong way [as deduced from prior Web behavior patterns], [the marketer] found he could increase the effectiveness of marketing materials from **30** to **40** percent.”—Eli Pariser, *The Filter Bubble: How the New, Personalized Web Is Changing What We Read and How We Think**

*“Analytics can yield literally hundreds of millions of data points—far too many for human intuition to make any sense of the data. So in conjunction with the ability to store very big data about online behavior, researchers have developed strong tools for data mining, statistically evaluating correlations between many types and sources of data to expose hidden patterns and connections. **The patterns predict human behavior—and even hidden human motivations.**”*

*—Illah Reza Nourbakhsh, *Robot Futures**

***“Predictions based on correlations lie at the heart of big data.”***

—Viktor Mayer-Schonberger and Kenneth Cukier, *Big Data: A Revolution That Will Transform How We Live, Work, and Think*

*“Flash forward to dystopia. You work in a chic cubicle, sucking chicken-flavor sustenance from a tube. You’re furiously maneuvering with a joystick ... Your boss stops by and gives you a look. ‘We need to talk about your loyalty to this company.’ The organization you work for has deduced that you*

*are considering quitting. It predicts your plans and intentions, possibly before you have even conceived them.”*

—Eric Siegel,

*Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie, or Die (based on a real case, an HP “Flight risk” PA model developed by HR, with astronomical savings potential)*

*“LinkedIn offers a career trajectory prediction by comparing your resume to other peoples’ who are in your field but further along. LinkedIn can forecast where you’ll be in five years. ... As a service to customers, it’s pretty useful. But imagine if LinkedIn offered the data to corporate clients to weed out people who are forecast to be losers. ... It seems unfair for banks to discriminate against you because your high school buddy is bad at paying his bills or because you like something that a lot of loan defaulters also like. And that points to a basic problem with induction, the logical method by which algorithms use data to make predictions.”—Eli Pariser, *The Filter Bubble: How the New, Personalized Web Is Changing What We Read and How We Think**

*“With new forms of ‘sentiment analysis’ it’s now possible to guess what mood one’s in. People use substantially more positive words when they’re up ...”—Eli Pariser, *The Filter Bubble: How the New, Personalized Web Is Changing What We Read and How We Think**

*“I believe this is the quest for what a personal computer really is. It is to capture one’s entire life.”* —Gordon Bell

# “Internet of Things”:

*“The algorithms created by Nest’s machine-learning experts—and the troves of data generated by those algorithms—are just as important as the sleek materials carefully selected by its industrial designers. By tracking its users and subtly influencing their behaviors, Nest Learning Thermostat transcends its pedestrian product category. Nest has similar hopes for what has always been a prosaic device, the smoke alarm. Yes, the Nest Protect does what every similar device does—goes off when smoke or CO reaches dangerous levels—but it does much more, by using sensors to distinguish between smoke and steam, Internet connectivity to tell you where the danger is, a calculated tone of voice to convey a personality, and warm lighting to guide you in the darkness. In other words, Nest isn’t only about beautifying the thermostat or adding features*

*to the lowly smoke detector. **‘We’re about creating the conscious***

***home,’** Nest CEO Fadell.” Left unsaid is a grander vision, with even bigger implications, many devices sensing the environment, talking to one another, and doing our bidding unprompted.”—Steven Levy,*

*“Where There’s Smoke ...,” *Wired*, November 2013*

**“Internet of Everything”**: *“The idea of the IoE\* [Internet of Everything/Cisco Systems/Estimated market size, next decade: \$14.4 trillion] is a networked connection of people, processes, data and ‘things,’ which is being facilitated by technology transitions such as increased mobility, cloud computing and the importance of big data.”*

Source: “The Big Switch,” *Capital Insights*

*“Robotics will drive this very innovation. Landing page tuning will bust out of the Internet and become ‘interaction tuning.’ Companies will apply their analytics engines to all interaction opportunities with people everywhere: online, in the car, in a supermarket aisle, on the sidewalk, and of course in your home.”*—Illah Reza Nourbakhsh, *Robot Futures*

## Summary 2013: What I've Come/Am Coming to Believe

\*The power to invent (*and* execute) is switching/flipping rapidly/inexorably to the network. “Me” is transitioning to “We”—as consumers and producers. Nouns are giving way to gerunds—it’s an “ing”/shapeshifting world!

\*The Internet *must* stay open and significantly unregulated to enable, among other things, the entrepreneurial spurt that will significantly underpin world economic growth.

\*Entrepreneurial behavior and upstart entrepreneurial enterprises have underpinned every monster shift in the past, such as farm to factory. This time will likely be no different.

\*An obsession with a “Fortune 500” of more or less stable giants dictating “the way we do things” will likely become an artifact of the past. (Though big companies/“utilities” will not disappear.)

\*There is simply no limit to invention or entrepreneurial opportunities! (Please read twice.)

\*The new star bosses will be “wizards”/“maestros.”

\*Sources of sustained profitability will often be elusive in a “soft-services world.”

\*Control and accountability will be a delicate dance. Now you see it, now you don't ...

**\*Trial and error, many many many trials and many many many errors very very very rapidly will be the rule; tolerance for and delight in rapid learning—and unlearning—will be a/the most valued skill.**

\* “Gamers” instinctively “get” the idea of lots of trials, lots of errors, as fast as possible; for this reason among many, “the revolution” is/will be to a very significant degree led by youth.

\*Women may well flourish to the point of domination in new leadership roles in these emergent/ethereal settings that dominate the landscape—power will be exercised almost entirely indirectly (routine for most women—more than for their male counterparts), and will largely/elusively inhabit the network per se.

\*The “Brand You/Brand Me” idea is alive and well and getting healthier every day and is ... not optional. Fact is, we mostly all will have to behave/be entrepreneurial tapdancers to survive let alone thrive. (Again, the under-35 set already seem mostly to get this; besides, this was the norm until 90 years ago.)

\*Individual performance and accountability will be more important than ever, but will be measured by one’s peers along dimensions such as reliability, trustworthiness, engagement, flexibility, willingness to spend a majority of one’s time helping others with no immediate expected return.

\*AI is ripping through traditional jobs at an accelerating pace. Virtually no job, circa 2000, no matter how “high end,” will remain in a recognizable way within 15-25 years. It’s as simple—and as traumatic—as that.

\*Wholesale/continuous/intense re-education (forgetting as well as learning) is a lifelong pursuit/imperative; parent Goal #1: Don’t kill the curiosity with which the child is born!

\*STEM (Science-Technology-Engineering-Math) is no doubt significant to a landscape being transformed by technology, though it has severe limitations. I favor the somewhat more robust formulation labeled STEAM/steAm. The “A” is for Art, or the arts. “The arts” are to some extent “what’s left” in terms of value creation as AI/robotics vacuum up traditional high-end occupations—think Apple.

\*The surprisingly good news: Education is busily re-inventing itself and leaving the ed establishment in the dust! The idea of and shape of education per se are erasing all that’s come before.

\*GRIN/Genetics-Robotics-Informatics-Nanotech: Overwhelming transformation is hardly just the provenance of AI/Robotics. Change, entrepreneurial activities and early adoption in the “G”/genetics and the “N”/nanotech arenas are accelerating. In fact, our 25 year horizon may border on the unrecognizable.

\*Government has a large role to play, like it or not. E.g., government-funded BASIC-research and development is a major-league necessity—which is growing rather than diminishing. Acknowledging the limits, at times severe, of markets is imperative!

\*Governance: It is hard to imagine that fundamental systems of human arrangement-governance will remain unchanged.

\*Downside? I have during my months of forced re-education personally moved from a position of deep pessimism to one of guarded optimism. Will “everything be different” in 10 or 25 years? Perhaps. Will we adapt individually and organizationally; history says yes, but common sense says there are no sure bets, and frightful issues (from genetics to war-and-peace) can readily be imagined. Stay tuned!

## Big Data: (Severe) Limits Thereto

As I read more and more gushing BIG data tributes, I must say I'll be shocked if BD doesn't eradicate disease-famine-human conflict-all error w/in next 10 years.

One Big Data/HR advertorial promises “*data metrics* [that provide] *complete picture of an individual ... everything.*” Golly gee. Wow. Zounds. “EVERYTHING.” Whowouldathunk ...

Quick! Send John Kerry a Big Data Team! Wrap up the Israeli-Palestinian peace process before Easter! (Written 10 days before Easter.)

**FYI: In actual fact I am a Big Fan of Big Data.**  
**Big Data-**INFORMED** decision making?**  
***Bravo!* Big Data-**BASED** decision making?**  
***Run for cover!***

**The joy of life is surprise.** The joy of Big Data is what a small share of human reality it actually captures. Phew.

I have TWO degrees in engineering/TWO degrees in biz. I love data. But it captures but a sliver of reality. And a damned small sliver at best.  
“Fact” implies capturing reality. A frightening illusion!  
Bond Lady: if “data” isn’t what you are looking for, what else do you use for judgments?

Crystal balls work pretty well in situations of high ambiguity.

**I rarely make judgments. I just do shit**  
[perturb the system] **and watch what happens.**  
**And giggle a lot.**

Mark Riffey: “Poke the bear.”

Why else bother to get up in the morning?



*“The first step is to measure what can easily be measured.*

*This is okay as far as it goes.*

*“The second step is to disregard that which cannot be measured, or give it an arbitrary quantitative value.*

*This is artificial and misleading.*

*“The third step is to presume that what cannot be measured is not very important.*

*This is blindness.*

*“The fourth step is to say what cannot be measured does not really exist.*

*This is suicide.”*

—Daniel Yankelovich (from *Enough!*, by Jack Bogle)

Limits to the value of “body counts” in Vietnam: *“To his  
dying day, [Robert S. McNamara]  
puzzled over facts  
and figures being no  
match for hearts and  
minds.”*

Source: *Boston Globe* review of a Donald Rumsfeld documentary/04/04.14

As people have said forever, it is soooooooooo easy to lie with statistics.

A sound grasp of big data will help you support any conclusion you wish to jump to.

Nathan Jones: “tom\_peters has a great discussion of the risks of how with massive data sets you can ‘prove’ anything you wish.”

## Is Big Data the end of lying with statistics?

# No!

## It's the beginning!

Rich Duszak MD: “Unfortunate but true.”

“Fact” *implies* capturing reality: **A frightening illusion!**

Big Data koolaiders point out that they are using “population data,” not a sample—as if their definition of “population data” included all facets of life-as-we-know-it. Pity the poor naïfs!

Phil Manning: “With stats, you’re always #1 in something.”

Well said, bro!

Ashis Basu: “As George Bernard Shaw famously said, ‘There are lies, dammed lies and Statistics!’”

That superb GBS-ism had slipped my mind. Thanks.

**Comment: “How do you deal with this situation as an exec?”**

**I believe there are few more important and few less studied subjects than the art of asking questions!**

**Re questions: A lot of Big Bank CEOs rolled by failure to acknowledge they did not comprehend the information the quants were proffering.**

**Quants are like all specialists. They are narrow-minded to a fault. (A quant w/superb presentation skills is among the most dangerous of human beings.)**

**Gerhard Oliver: “That is very very funny, but I agree 100%!”**

**Big Data-**

**INFORMED**

**decision making?**

***Bravo!***

**Big Data-BASED**

**decision making?**

***Run for cover!***

## On another Big Data Note ...

Janelle Milo: “Distinction worth highlighting: Data are already there. Just becomes much easier to access and distill it during discovery.”

Very well said. Big Data koolaid swillers act as if business today is a data-free zone.

Big Data koolaid swillers act as if binary/two worlds: (1) Big Data. (2) Intuition. Ridiculous. In many cases, data-slavery is a long-time problem. (Peters-Waterman: “Hard is soft. Soft is hard.”)

Betcha ...

Re HR-Big Data hookup, I bet: **Within 10 years, there will be an entire new division added to the EEOC to deal with big-data-driven employee discrimination claims.**

HR-Big Data hookup: **Law suit bonanza, here we come!**

**Big Data, HR, and Social Business ...**

**SocBiz emphasizes individuality.  
HR-Big Data hookup emphasizes  
homogeneity. Hmmm ...**

**Each marble in the social business bag has**

**priceless** individual characteristics. But  
**Big Data-HR linkage rewards mimicking past success.  
How do you reconcile?**