

Tom Peters'

EXCELLENCE!

“THE WORKS”

A Half-Century's Reflections/1966-2016

Chapter SEVEN:

**TECH TSUNAMI/
SOFTWARE IS EATING
THE WORLD**

01 January 2016

(10+ years of presentation slides at tompeters.com)

Contents/“The Works”/1966-2016/EXCELLENCE!

- Chapter ONE: Execution/The “All-Important Last 95%”**
- Chapter TWO: EXCELLENCE (Or Why Bother at All?)**
- Chapter THREE: The “Strategy First” Myth**
- Chapter FOUR: (REALLY) First Things Before First Things**
- Chapter FIVE: 34 BFOs/Blinding Flashes of the Obvious**
- Chapter SIX: Putting People (REALLY!) First**
- Chapter SEVEN: Tech Tsunami/Software Is Eating the World++**
- Chapter EIGHT: People First/A Moral Imperative Circa 2016**
- Chapter NINE: Giants Stink/Age of SMEs/Be The Best,
It’s the Only Market That’s Not Crowded**
- Chapter TEN: Innovate Or Die/W.T.T.M.S.W./
Whoever Tries The Most Stuff Wins++**
- Chapter ELEVEN: Nine Value-added Strategies**
- Chapter TWELVE: Value Added/1ST Among Equals/DESIGN MINDEDNESS**
- Chapter THIRTEEN: The “PSF”/Professional Service Firm “Model”
as Exemplar/“Cure All”**
- Chapter FOURTEEN: You/Me/The “Age of ‘BRAND YOU’/‘Me Inc.’”**
- Chapter FIFTEEN: Women Are Market #1 For Everything/
Women Are the Most Effective Leaders**
- Chapter SIXTEEN: Leadership/46 Scattershot Tactics**
- Chapter SEVENTEEN: Avoid Moderation!/Pursue
“Insanely Great”/Just Say “NO!” to Normal**
- Appendix: Library of Best Quotes**

STATEMENT OF PURPOSE

This—circa January 2016—is my best shot. It took 50 years to write! (From 1966, Vietnam, U.S. Navy ensign, combat engineer/Navy Seabees—my 1st “management” job—to today, 2016.) It is ... **“THE WORKS.”** THE WORKS is presented in PowerPoint format—but it includes 50,000++ words of annotation, the equivalent of a 250-page book.

The times are nutty—and getting nuttier at an exponential pace. I have taken into account as best I can (there really are no “experts”) the current context. But I have given equal attention to more or less eternal (i.e., human) verities that will continue to drive organizational performance and a quest for EXCELLENCE for the next several years—and perhaps beyond. (Maybe this bifurcation results from my odd adult life circumstances: 30 years in Silicon Valley, 20 years in Vermont.)

Enjoy.

Steal.

P-L-E-A-S-E try something, better yet several somethings.* ** *** *****

*Make no mistake ... **THIS IS A 17-CHAPTER BOOK** ... which happens to be in PowerPoint format; I invite you to join me in this unfinished—half century to date—journey.

**My “Life Mantra #1”: WTTMSW/Whoever Tries The Most Stuff Wins.

***I am quite taken by N.N. Taleb’s term “antifragile” (it’s the title of his most recent book). The point is not “resilience” in the face of change; that’s reactive. Instead the idea is proactive—literally “getting off” on the madness per se; perhaps I somewhat anticipated this with my 1987 book, *Thriving on Chaos*.

****Re “new stuff,” this presentation has benefited immensely from Social Media—e.g., I have learned a great deal from my 125K+ twitter followers; that is, some fraction of this material is “crowdsourced.”

***** ***I am not interested in providing a “good presentation.” I am interested in spurring practical action. Otherwise, why waste your time—or mine?***

Note: There is considerable **DUPLICATION** in what follows. I do not imagine you will read this book straight through. Hence, to some extent, each chapter is a stand-alone story.

Epigraphs

“Business has to give people enriching, rewarding lives ... or it’s simply not worth doing.” —Richard Branson

“Your customers will never be any happier than your employees.” —John DiJulius

“We have a strategic plan. It’s called ‘doing things.’” —Herb Kelleher

“You miss 100% of the shots you never take.” —Wayne Gretzky

“Ready. Fire. Aim.” —Ross Perot

“Execution is strategy.” —Fred Malek

“Avoid moderation.” —Kevin Roberts

“I’m not comfortable unless I’m uncomfortable.” —Jay Chiat

“It takes 20 years to build a reputation and five minutes to ruin it.”
—John DiJulius on social media

“Courtesies of a small and trivial character are the ones which strike deepest in the grateful and appreciating heart.” —Henry Clay

“You know a design is cool when you want to lick it.” —Steve Jobs

“This will be the women’s century.” —Dilma Rouseff

“Be the best. It’s the only market that’s not crowded.” —George Whalin

First Principles. Guiding Stars. Minimums.

*** EXECUTION! The “Last 99%.”**

GET IT (Whatever) DONE.

*** EXCELLENCE. Always. PERIOD.**

*** People REALLY First! Moral Obligation #1.**

*** EXPONENTIAL Tech Tsunami.**

GET OFF ON CONTINUOUS UPHEAVALS!

*** Innovate or DIE!**

WTTMSW/Whoever Tries The Most Stuff Wins!

*** Women Buy (EVERYTHING)!**

Women Are the Best Leaders! Women RULE!

*** Oldies Have (All of) the Market Power!**

*** DESIGN Matters! EVERYWHERE!**

*** Maximize TGRs!/Things Gone RIGHT!**

*** SMEs, Age of/“Be the Best,**

It’s the Only Market That’s Not Crowded”

*** Moderation KILLS!**

NEW WORLD ORDER ?!

0810/2011:

Apple > Exxon*

0724/2015:

Amazon > Walmart**

***Market capitalization; Apple became #1 in the world.**

****Market capitalization; Walmart is a “Fortune 1” company—the biggest in the world by sales.**

Phew.

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Chapter SEVEN

**CONTEXT:
TECH TSUNAMI//
SOFTWARE IS
EATING THE
WORLD**

I am hardly expert enough to give a tour of tomorrow—though I have devoted a large share of the last three years to “reading (and listening) my way in” on these issues.

So what follows is directionally on the money, I’d judge—but hardly the last word, or even the next to the next to last word.

NEW WORLD ORDER

0810/2011: Apple

> Exxon

0724/2015:

Amazon >

Walmart

In August 2011, Apple's market capitalization passed Exxon's—Apple became the most valuable company on earth. In July 2015, ecommerce showed its strength when Amazon's market capitalization passed Walmart's—Walmart is a “Fortune ONE” company, the biggest of them all as measured by revenue. (These two markers could change—but the deed has been done. It is, in fact, literally a new world order.)

7.1 Context:

**1,000,000 Robots
and the
Exponential
Function**

***“The greatest
shortcoming of the
human race is our
inability to
understand the
exponential
function.”***

—Albert A. Bartlett

Hmmmm ...

I can buy this—despite the extremeness of the assertion/“greatest shortcoming of the human race.”

It truly caused me to think deeply about our present context in which, it is said, the **acceleration of change is unprecedented.**

(The late Professor Bartlett was, among other things, one of our leading nuclear physicists.)

China/Foxconn:

1,000,000

robots/next 3 years

Source: *Race AGAINST the Machine*, Erik Brynjolfsson and Andrew McAfee

We typically think of China in terms of low-cost labor. China's labor costs are soaring—and, like the rest of us, the Chinese are stepping up their game, as indicated by this case of a headlong plunge into robotics.

And not pussyfooting!

“Since 1996, manufacturing employment in

China itself has actually fallen

by an estimated 25 percent

That’s over 30,000,000

***fewer Chinese workers in that sector,
even while output soared by 70 percent. It’s not
that American workers are being replaced by Chinese workers. It’s that
both American and Chinese workers are being made more efficient
[replaced] by automation.”*** —Erik Brynjolfsson and Andrew McAfee,
*The Second Machine Age: Work, Progress, and Prosperity
in a Time of Brilliant Technologies*

I read this in disbelief.

But I do believe it.

**And what testimony it is to the ubiquity
of the automation tsunami.**

“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.”

Pilot as computer operator—and emergency skills are atrophying. (That is fact, not assertion—as witnessed, alas, by a series of accidents.)

Robot Wars!

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

—Michael Lewis,

“Goldman’s Geek Tragedy,” *Vanity Fair*, 09.13

No surprise.

“Meet Your Next Surgeon: Dr. Robot”

Source: Feature/*Fortune*/15 JAN 2013/on Intuitive Surgical’s

da Vinci /multiple bypass heart-surgery robot

**Ditto surgeons.
Not “the future.”
NOW.**

(At a social event I ran into a surgical department head at a “Top 10” U.S.A. hospital. He lamented his surgical residents’ loss of tactile and problem-solving skills; the novices, he said, were now mainly “computer gamers playing with the human body.” I challenged that, to which he responded, “Come on over, I’ll let you watch.” Actually, It was a realization I’d prefer to avoid.)

“[Michael Vassar/**MetaMed** founder] is creating a better information system and new class of people to manage it. **‘Almost all**

health care 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 [doctors’] 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*

**Ditto healthcare as a whole?
(This language may be too strong—but it
is not fanciful.)**

7.2

IoT

Internet of Everything

IoT/The Internet of Things
IoE/The Internet of Everything
M2M/Machine-to-Machine
Ubiquitous computing
Embedded computing
Pervasive computing
Industrial Internet
Etc. * ** ****

*“More Than **50 BILLION** connected devices by 2020” —Ericsson

** Estimated **212 BILLION** connected devices by 2020—IDC

***“By 2025 IoT could be applicable to **\$82 TRILLION** of output or approximately one half the global economy”—GE (The WAGs to end all WAGs!)

“Everything” is more or less not an exaggeration.

Internet of Everything

“The idea of the IoE* [Internet of Everything/Cisco Systems] 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.”

*Estimated market size, next decade: **\$14.4 trillion**

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

“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 says. Left unsaid is a grander vision, with even bigger implications, many devices sensing the environment, talking to one another, and doing our bidding unprompted.”

Sensor Pills: “Proteus Digital Health is one of several pioneers in sensor-based health technology. They make a silicon chip the size of a grain of sand that is embedded into a safely digested pill that is swallowed. When the chip mixes with stomach acids, the processor is powered by the body’s electricity and transmits data to a patch worn on the skin. That patch, in turn, transmits data via Bluetooth to a mobile app, which then transmits the data to a central database where a health technician can verify if a patient has taken her or his medications.

“This is a bigger deal than it may seem. In 2012, it was estimated that people not taking their prescribed medications cost **\$258 BILLION** in emergency room visits, hospitalization, and doctor visits. An average of **130,000** Americans die each year because they don’t follow their prescription regimens closely enough...”
(The FDA approved placebo testing in April 2012; sensor pills are ticketed to come to market in 2015 or 2016.)

Source: Robert Scoble and Shel Israel, *Age of Context: Mobile, Sensors, Data and the Future of Privacy*

**Please read carefully.
(For what it portends.)
Science.
Not science fiction.
The FDA has approved trials.**

7.3

3D

**“Las Vegas Company
Could 3D Print Your
Next Car: Customers
could pick up newly
printed car within 24
hours”**

—Headline, *Las Vegas Sun*/1225.14

3D printing.

Effective thereof grows by the day.

10 years from now 

As to the quote above: Just another low key Christmas Day 2014 news story.

On the verge or not, typical of the “crazy” stories one sees every day now.

7.4 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, [the developer, 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

“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

Science fiction.

NOT.

“THE DEGENERATION EFFECT” (Title, Chapter 4)

“Calculative power grows. Sensory engagement fades.”

“ ‘Automation complacency’ creeps in when people give undue weight to the information coming in through their monitors.”

“I quickly established a romantic attachment to my GPS. I found comfort in her tranquil and slightly anglophilic voice. I felt warm and safe following her thin blue line. ... *After a few weeks it occurred to me that I could no longer get anywhere without her. ... I found I was quickly shedding all vestiges of geographic knowledge.* The price of convenience was a loss of autonomy.” —David Brooks, from his column “The Outsourced Brain”

“Problems can produce friction in our lives. And friction can act as a catalyst, pushing us to a fuller awareness and deeper understanding of our situation.”

Source: Nicholas Carr, *The Glass Cage: Automation and Us*

***“Calculative
power grows.
Sensory
engagement
fades.”***

Source: Nicholas Carr, *The Glass Cage: Automation and Us*

The literal decline of sensory powers.

Scary?

I think so.

I *know* so.

(My wife and I moved two years ago. I became dependent on my GPS. Two years later I am clueless about directions when I'm more than a mile from home. My wife purposefully put her GPS out of reach in the car; two years on she knows the local turf—up to 25 miles away—almost perfectly. [At the start, I'd judge, Susan's and my sense of direction were about equal.])

“CAD software has gone from a tool for turning designs into plans to a tool for producing the designs themselves. ***The increasingly popular technique of parametric design, which uses algorithms to establish formal relationships among different design elements, puts the computer’s calculative power at the center of the creative process. In the most aggressive application of the technique, a building’s form can be generated automatically by a set of algorithms rather than composed manually by the designer’s hand.*** ... The transition from sketchpad to screen entails, many architects believe, a loss of creativity, of adventurousness. A designer working at a computer has a tendency to lock in, visually and cognitively, on a design at an early stage. He bypasses much of the reflective and exploratory playfulness that springs from the tentativeness and ambiguity of sketching. Researchers term this phenomenon ‘premature fixation.’ ” —Nicholas Carr, *The Glass Cage: Automation and Us*

“In his eloquent 2009 book, *The Thinking Hand*, the distinguished Finnish architect Juhani Pallasmaa argues that the growing reliance on computers is making it harder for designers to imagine the human qualities of their buildings —to inhabit their works in progress in the way that people will ultimately inhabit the finished structures.”

“Calculative power grows. Sensory engagement fades.”

Source: Nicholas Carr, *The Glass Cage: Automation and Us*

Atrophying creative powers.

Sad.

Scary.

(Inevitable?)

(More to come.)

(MUCH more to come.)

Betterment/ “Ambitions of a Robo Adviser”

**—FT/1217.14/ “could put tens of
thousands of U.S.
investment advisors out
of their jobs”**

Bye-bye **VERY** high end pros—
investment advisors.

Let's Welcome Our Newest Board Member: “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.”

—*Business Insider*, 13 May 2014:

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

Algorithm-as-official-Board-member: The world of finance—several steps “ahead.”

“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)

AI comes surging into **HR in the
Age of “Big Data.”**

**Katy bar the door.
(Whoops, too late Katy.)**

**7.5 THE MEDIAN
WORKER IS
LOSING THE RACE
AGAINST THE
MACHINE**

***“Software is
eating the
world.”***

—Marc Andreessen

***“Human level
capability has not
turned out to be a
special stopping point
from an engineering
perspective.”***

“The intellectual talents of highly trained professionals are no more protected from automation than is the driver’s left turn.”

—Nicholas Carr, *The Glass Cage: Automation and Us*

***“If you think being
a ‘professional’
makes your job
safe, think again.”***

—Robert Reich

***“The computers are
in control. We just
live in their world.”***

—Danny Hillis, Thinking Machines (*Wired* 01.2011)

“Human level capability has not turned out to be a special stopping point from an engineering perspective.”

—Illah Reza Nourbakhsh, *Robot Futures/2013*

“SOFTWARE IS EATING THE WORLD.”

—Marc Andreessen/2014

“The computers are in control. We just live in their world.” —Danny Hillis, *Thinking Machines/2011*

“The intellectual talents of highly trained professionals are no more protected from automation than is the driver’s left turn.”

—Nicholas Carr, *The Glass Cage: Automation and Us*

“Ten Million Jobs at Risk from Advancing Technology: Up to 35 percent of Britain’s jobs will be eliminated by new computing and robotics technology over the next 20 years, say experts [Deloitte/Oxford University].”

—Headline, *Telegraph* (UK), **11 November 2014**

“I believe that 90 percent of white-collar/‘knowledge-work’ jobs—which are 80 percent of all jobs—in the U.S. will be either destroyed or altered beyond recognition in the next 10 to 15 years.” —Tom Peters, Cover, *Time*, **22 May 2000**

“The machine plays no favorites between manual and white collar labor.”—Norbert Wiener, **1958**

Welcome to 2016!

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

—Dan Sullivan, consultant and executive coach

Robotics and Artificial Intelligence are taking on (taking OVER?) high-end white-collar (and “white coat”) jobs.

And we’re only warming up ...

“I believe that ninety percent of white-collar/“knowledge-work” jobs (which are 80 percent of all jobs) in the U.S. will be either destroyed or altered beyond recognition in the next 10 to 15 years.”

—Cover story/Time/22 May 2000/Tom Peters

(I was a little premature with my Y2K prognostication. But, perhaps, not by much.)

“Ten Million Jobs at Risk from Advancing Technology: Up to 35 percent of Britain's jobs will be eliminated by new computing and robotics technology over the next 20 years, say experts at Deloitte and Oxford University.”

—Headline, *Telegraph* (UK), 11 November 2014

The source is unimpeachable, even if the argument is speculative. Predictions like this are garden variety in 2015.

“Off”?

Perhaps.

“Off” by much?

Unlikely.

“Plausible hypothesis”?

Absolutely.

“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.”

Source: *Race AGAINST the Machine*, Erik Brynjolfsson and Andrew McAfee

This is a principal explanation as to why the economy is coming back—but new jobs and wage increases are lagging* lagging

l-a-g-g-i-n-g.

(*When it comes to wage-rate movement, “non-existent” or even “declining” are the correct words.)

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

**—Erik Brynjolfsson and Andrew McAfee,
*Race AGAINST the Machine***

***“Occupations intensive in tasks that can easily be computerized are usually in the middle class.” (MIT’s David Autor)**

“New technologies aren’t just labor-replacing. They’re also knowledge-replacing. The combination of advanced sensors, voice recognition, artificial intelligence, big data, text-mining, and pattern-recognition algorithms, is generating smart robots capable of quickly learning human actions, and even learning from one another. **If you think being a “professional” makes your job safe, think again.**”

—Robert Reich

- (1) Interviewee re TurboTax: “No way. I don’t use an H&R Block tax preparer any more. I’ve switched to TurboTax software. It’s only \$49 and much quicker and more accurate.” Brynjolfsson/McAfee: *“The creators of TurboTax are better off—but tens of thousands of tax preparers now find their jobs and incomes threatened.”*
- (2) CEO interviewed by the authors says he installed new infotech equipment before the Great Recession, but did not cut payroll when profits were soaring. And then: *“When the recession came, business as usual was obviously not sustainable, which made it easier to implement a round of painful streamlining and layoffs. As the recession ended and profits and demand returned, the jobs doing routine work were not restored.”*
- (3) “For most of the 19th and 20th centuries, employment usually rebounded after each recession, but since the 1990s employment didn’t recover briskly after recessions. *It’s not coincidence that as the computerization of the economy advanced, post-recession hiring patterns changed.*”

Source: *The Second Machine Age*, by Eric Brynjolfsson and Andrew McAfee

The New Logic: Scale w/o Employment

Kodak: 1988/145,000
employees; 2012/bankrupt

**Instagram: 30,000,000 customers/
13 employees**

**(WhatsApp: 450,000,000 customers/
55 employees/
Valued @ \$19,000,000,000)**

Source: Robert Reich's Blog/0317.15

More or less trading 145,000 jobs for 13 jobs? Yeah, more or less.

Just pause and read/re-read/re-re-read this.

Form your own conclusions about implications.

“It’s now possible to sell a new product to hundreds of millions of people without needing many, if any, workers to produce or distribute it. At its prime in 1988, Kodak, the iconic American photography company, had **145,000** employees. In 2012, Kodak filed for bankruptcy. The same year Kodak went under, Instagram, the world’s newest photo company, had **13** employees serving **30,000,000** customers.

“The ratio of producers to customers continues to plummet. When Facebook purchased “WhatsApp” (the messaging app) for \$19 billion last year, WhatsApp had **55** employees serving **450,000,000** customers.

“A friend, operating from his home in Tucson, recently invented a machine that can find particles of certain elements in the air. He’s already sold hundreds of these machines over the Internet to customers all over the world. He’s manufacturing them in his garage with a 3D printer. So far, his entire business depends on just one person — himself.”

—Robert Reich, “Robert Reich’s Blog”/0315.15

More.

7.6 **Context:**

**Let's Not Get
Too Carried
Away**

**“We are in no danger of
running out of new
combinations try. Even
if technology froze today, we have more
possible ways of configuring the
different applications, machines, tasks,
and distribution channels to create new
processes and products than we could
ever exhaust.”**

—Erik Brynjolfsson and Andrew McAfee, *Race Against the Machine: How the Digital Revolution Is Accelerating Innovation, Driving Productivity and Irreversibly Transforming Employment and the Economy*

“The ecosystem used to funnel lots of talented people into a few clear winners. Now it’s funneling lots of talented people into lots of experiments.”

—Tyler Willis, business developer, to Nathan Heller in **“Bay Watched: How San Francisco’s New Entrepreneurial Culture Is Changing the Country,”** *The New Yorker*, 1014.13

We have adapted before to monumental change. ...

7.7 Context:

**Let's Not Get
Too Carried
Away**

Life BEFORE Clay Christensen “Invented” “Disruption”: My mom (1909-2005) lived through the advent of mass market cars, commercial radio, routine long-distance phone calls, portable phones, cell phones, satellites, satellite phone call transmission, movies with sound, color movies, TV, TV dinners, microwave ovens, commercial use of aircraft, jets, extensive electrification, the Great Depression, Ty Cobb, Babe Ruth, Walter Johnson, Bob Feller, Barry Bonds, Derek Jeter, the West Coast Offense, the Civil Rights Movement, an African-American Chairman of the Joint Chiefs of Staff/Secretary of State, Gay Pride, women win the right to vote, Gandhi, Churchill, WWI, WWII, the Holocaust, the birth of the U.S. Navy Seabees, relativity, the A-bomb, H-bomb, the EEC, the EU, the Euro, the Korean War, the Vietnam War, the Iraq War, 9/11, the Cold War, the disintegration of the USSR, the resurgence of China, the death and resurrection of Germany and Japan, Oklahoma & New Mexico & Arizona & Hawaii & Alaska become states, William Howard Taft* (*just missed Teddy Roosevelt!), FDR, Ronald Reagan, Father Coughlin, Jim and Tammy Bakker, mainframe computers, PCs, hyperlinks, the iPod, DARPA-net, the Internet, air conditioning, weed whackers, Mickey Mouse, Frank Sinatra, Elvis, the Beatles, Madonna, the Model T, the Cadillac Escalade, Nancy Drew, the first four Harry Potter books, antibiotics, MRIs, polio vaccine, genetic mapping, WWII rockets, space flight, man-to-the-moon, probe on Mars, more or less permanent space station.”**

(**But, to be sure, not long enough to see the Cubs win another World Series or to take a selfie.)

My Mom's life was not exactly a yawner when it came to "disruption"!

(As management guru Henry Mintzberg put it years ago [approximate], *"It is the conceit of every generation to see the present as tangled chaos, whereas the past was linear, readily explainable and much slower paced."*)

7.8 Context:

Let's Do Get
Carried Away

Genetics

Robotics

Informatics

Nanotechnology

More to come.
Lots more.

Genetics

Robotics

Informatics

Nanotechnology*

*Decision **#1**: GRIN and BEAR it? GRIN and

SAVOR it?

Soooooooo????????

7.9 Context:

Let's Do Get
Carried Away

AI/Be Careful of What You Wish For

Hawking*

Gates**

Musk

Etc.

* “The development of full artificial intelligence could spell the end of the human race.”

** “I don’t understand why people are **NOT** concerned.”

***“The greatest
shortcoming of the
human race is our
inability to
understand the
exponential
function.”***

—Albert A. Bartlett

There are nightmare scenarios about software/AI more or less taking over—and some of our best and brightest are asking us not to stand idly by while it occurs.

Arguably ...

We shouldn't panic.

We shouldn't stand around with our hands in our pockets.