

The Information Revolution's BROKEN PROMISES

BY KARL ALBRECHT



When revolutionary euphoria sets in, we may be tempted to set aside our critical judgments and enroll ourselves in the dream. Only later, after experience, might we get a more sober perspective on what we were promised and what we got. Here are eight of the “grand promises” of the digital information technology revolution, with reality checks and revised visions of what lies ahead.

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Big revolutions usually start with big hopes, big dreams, big visions, and big promises. Of all the biggest revolutions in our history—from agriculture and industrialization to the automobile and television—the Internet and all things digital have raised heart rates and hormone levels more than perhaps any other.

The “third wave,” as futurist Alvin Toffler christened it, became a tidal wave with the arrival of the microchip and digital information technology. Those made possible the Internet and ubiquitous information—knowledge at a distance. Then, between 1990 and 1995, the commercial

tidal wave of digital products and experiences rose exponentially. Today, about twenty years into the revolution, perhaps we need to waken from our infatuated trance with the electronic experience and see what the revolution has done for, with, and to us.

The rapid spread and acceptance of digital products, services, and experiences is nearly unparalleled in history, with the possible exception of television. Our lives now revolve comfortably around instant communication, with fingertip access to worlds of information, on-line shopping, and management of our personal affairs. In half a generation, the vast majority of the world’s af-

fluent people have become digital citizens.

Looking back, however, it seems that some of the grandest fantasies promoted by the early self-nominated philosophers of the digital age have not really caught fire, or have misfired, or even backfired. We didn't get some of what we were promised, and some of what we got we hadn't expected. Let's review eight of those grand promises and what really happened, and suggest new predictions for the future.

GRAND PROMISE 1: The Internet Will Create a "New Economy"

In the red-hot Nineties, that phrase became the defining mantra of the Internet priesthood. A wider, flatter, democratized marketplace would mean that every entrepreneur with a dream and a computer might strike it rich. Old-economy companies would go the way of the dinosaur. It was "e-business or out of business."

Sober Reality: More fortunes have been lost on the Internet than made.

Probably 70% or more of the Internet content has been built out by unpaid volunteer labor. The vast online marketplace is now controlled by just a handful of large monopoly firms: Google, Amazon, Facebook, eBay, Twitter, Yahoo, YouTube, LinkedIn, Skype, and a few others. Add a dozen or so secondary players, some rising and some declining, and you have about 80% of the online information structure concentrated in the hands of a few megafirms. That's a far greater degree of monopolization than has ever existed in "real space." With mergers and acquisitions, plus occasional extinctions, the "new economy" of the Internet is looking increasingly like the "old economy," only more so.

It also became painfully evident to many business operators that the Internet was not the magical profit creator they hoped it would be. In fact, it turned out to be a *profit grinder*. Price transparency, dynamic pricing, and hypercompetition, driven by price-comparison Web sites, put tremendous pressure on retail prices across the board. If the people run-

ning airline companies, for example, held any hope of escaping from their decades-long price wars, those hopes are being dashed by a multitude of fare-shopping sites.

Updated Prediction: Entrepreneurs with ideas and energy will still get their turns at bat, but the days of "garage to global" are mostly over. Small businesses will increasingly benefit from cheap and accessible cloud-based software services.

The Internet business will become a boundaryless battlefield, as the surviving giants increasingly try to invade one another's turf, offering the same products, and steadily commoditizing the online experience.

GRAND PROMISE 2: The Internet Will Create a World Community

The digital philosophers told us that the Internet will bring people together, reduce ethnic and tribal strife, and foster understanding and cooperation among all peoples.

Sober Reality: Not so much. The Internet has allowed even more walls to be built around smaller niche communities of "us versus them." Social media platforms seem to work well for family reunions, political fund-raising, worshipping celebrities, sparking uprisings, and the like, but they don't seem to be very useful in orchestrating systematic change.

The term *community* has taken on a new and somewhat bizarre connotation in the digital age: It's any collection of people who can contact one another electronically. The digital information technology environment has given us relationships that are much more numerous and at the same time more shallow, socially and emotionally.

As Tocqueville reminded us, microcommunities have been forming and dissolving for centuries, pursuing a vast array of specialized interests. Online platforms are making it easier for them to find one another, but the notion that we're all becoming one big happy electronic family remains questionable.

Some experts argue that embracing these technologies is *atomizing* human experience rather than collec-

tivizing it. Further, more and more psychologists and pediatricians are warning about the "Facebook syndrome," in which young people are becoming so addictively attached to the unreal experience of online life that they fail to develop the skills of social intelligence, and even show signs of depression. Indeed, the American Academy of Pediatrics now recommends that no child under the age of three have any significant exposure to screen-based information devices of any kind.

Online gaming may be having the same effect. And the massive preoccupation with the unreal lives and narcissistic behaviors of celebrity entertainers, on platforms like Twitter, can also distort major portions of a young person's reality structure.

And, of course, factional antagonism is almost a defining characteristic of online political activity. Futurist John Naisbitt posited the "global-tribal paradox": the more global we become in our awareness, the more tribal we tend to become in our behavior.

Updated Prediction: Social media, together with the vast and ever-growing supply of cheap and accessible information, will become the "new TV." The traditional notion of a television set as an umbilical to the world of packaged news and entertainment will give way to the notion of a distributed media experience: it's everywhere, not just coming out of a box in your living room.

The so-called electronic culture, or media culture, is no longer just a component of the culture of the affluent nations; *it is the culture*. It's a nonstop, 24/7, saturated entertainment environment. And we surely don't understand it, even though many people claim to.

Many people may begin to experience digital fatigue, turning more and more toward local subcultures of intimate personal contact. Some will be willing to pay to go to special places where they can't be connected.

GRAND PROMISE 3: The Digital Age Will Make Us All Get Smarter

We'll be forced to learn to think in whole new ways, and we'll have to



“Digital technologies will amplify the ‘smart gap,’ but probably won’t make many people smarter.”

learn to process information faster and more skillfully. The new, high-paying IT jobs will demand more of us, and we’ll rise to the challenge. The mantra was “A high school diploma will no longer be enough to get a job in the new digital workplace.”

Sober Reality: Exactly the opposite happened. The technology wizards went to work building software and redesigning work processes that would *reduce* the cognitive demands placed on workers.

Virtually all corporate IT investments have one purpose: getting more and better results with less input of skilled labor and materials. By automating those parts of jobs and business processes that required human information processing—observing, remembering facts and figures, calculating, estimating, making decisions, planning—they’re systematically dumbing down as many jobs as possible.

As a result, more low-paying jobs are becoming available to low-skilled or marginally employable workers. There are also fewer well-paying mid-skill jobs and more over-qualified people competing for lower-skill jobs, so there is a general downward pressure on wages.

Ironically, many of the higher-paying professional jobs in the corporate IT industry are being eliminated or deskilled by advances in enterprise software. IT budgets peaked and declined. With the dumbing of jobs and

the dumbing of media products, digital information technology didn’t make us all smarter. In fact, it made it unnecessary for us to get smarter.

Updated Prediction: Digital technologies will amplify the “smart gap,” but probably won’t make many people smarter. The gulf will likely grow between the “knows”—intellectually active people who are self-educating—and the “know-nots”—mentally passive people who continue to prefer an experience of escape, entertainment, and amusement. Public education systems will probably do little to change those divisions.

The “knows” will capitalize on digital products and experiences to achieve their life goals. Those of modest means can take advantage of cheap and accessible do-it-yourself educational resources, overcoming to some extent the barriers of economic privilege.

GRAND PROMISE 4: The Digital Generation Will Save Us

Digital information technologies were expected to produce a new generation of “tech-savvy” kids, smarter than their parents, who would run the world better and smarter than the generation that spawned them.

Sober Reality: Today’s kids aren’t really tech-savvy; they’re just button-savvy.

Very few of them know or care what’s going on inside their smartphones, laptops, video games, or tablet computers. Cell phones and a host of other digital products became wildly popular only after engineers figured out how to design them so that even a monkey could use one. The kids aren’t any smarter—they’re just fascinated consumers, hyperattentive to an experience they love. Most adults could learn everything a “tech-savvy” teen knows about media products in a few hours.

There’s little evidence that today’s high-school grads are becoming smarter, better informed, or more socially aware than any previous generation, regardless of the unctuous and admiring attention given to them by some social observers. A 2006 Roper Poll for National Geographic found that 63% of young American adults (age 18–24) could not find Iraq on a map, and half said it was unimportant to know how to find other countries on a map. In comparison, 60% said having computer skills was vital to success in today’s world.

American universities continue to fill as much as half of their quotas in science and engineering majors with foreign students. Millions of kids spend billions of hours playing “massive online games,” with many becoming masterful players. Yet, almost no evidence has been presented to support the claim that this addictive experience makes them smarter than non-gamers or more competent in any otherwise useful way.

Updated Prediction: The bell curve of individual achievement will continue to depend on individuals, on their formative environments, and, to a much smaller extent, on digital information technologies, which will amplify rather than diminish the differences between kids. Giving laptops to poor kids won’t change the culture that creates built-in advantages for some kids over others.

Public schools, particularly in America, will probably continue their dogged pursuit of mediocrity, leaving most kids to find an education in their own ways. Globally,

those in the “have” nations will certainly benefit more from technologies than those in the “have-not” nations, where it is much less available, and where social and economic circumstances amplify the digital divide.

As to whether today’s young digital natives will grow up to be better (or worse) leaders than their parents, we have little evidence to go on.

GRAND PROMISE 5: Digital Technologies Will Narrow the Wealth Gap

The hope was that access to the digital world would give everyone a shot at the good life. Free and abundant information, including education, would raise the poor out of their imprisoning circumstances and create more jobs, better educated workers, and a fairer distribution of wealth. A “digital middle class” would thrive as never before. More than ever before, a good education would be one’s ticket to the party.

Sober Reality: Paradoxically, digital technologies appear to have done more to widen the wealth gap than any other phenomenon—social, political, or economic. This is perhaps one of the biggest surprises of the

digital society. Maybe we should have seen it coming, but most of us didn’t.

The massive corporate investment in ERM (enterprise resource management) systems has driven up productivity and profits at record rates. As corporations make more money with cheaper labor, the profits are flowing increasingly into the pockets of the executives who run the firms and the shareholders whose interests they serve. Real wages have stagnated for nearly two decades—starting with the 1995 Internet “big bang”—while company profits, executive salaries, and investor returns skyrocketed. Bloomberg Media reports that the ratio of Fortune 500 CEO salaries to worker salaries shot up from 20 to 1 in 1950 to about 200 to 1 currently.

Updated Prediction: The wealth gap will almost certainly continue to widen for some time, until its consequences become acute, including stagnant wages, loss of middle-class jobs, and scarce jobs for young educated people. At that stage, populist movements will put intense pressure on governments at all levels to adopt economic policies and tax mechanisms that rearrange the playing field.

Activist groups, including ethnic

advocacy groups, labor groups, and social reformist groups, may cause civil disorder, and may even go to the point of organized violence to promote the reforms they seek.

Corporate accountability and social responsibility will become political watchwords, and legislators will be caught in powerful crosswinds, pitting the interests of their corporate benefactors against the interests of their most vocal constituents.

GRAND PROMISE 6: The Internet Will Spread Democracy

A new age would dawn, in which oppressed peoples have a powerful voice, and dictators can no longer rule by fear.

Sober Reality: “Swarm advocacy”—the use of social media to get citizens out into the streets—has helped to bring dictators down in some cases, but has proven mostly useless in setting up democratic alternatives.

The overcaffeinated rhetoric of the Arab Spring, for example, pushed the wishful proposition that democracy would naturally arise in such toxic environments as Egypt, Libya, and Syria once the cruel dictators were kicked out. A brief review of history would have reminded us that violent turnovers in developing countries usually involve one band of thugs replacing another. Mobs can only destroy things; they cannot assemble something new.

Most Americans and their governments have long cherished the quixotic ideal of “xerox democracy,” a naïve belief that the unique American democratic system and thinking process could be copied to any troubled society, if only the people there would just wake up and see its obvious value. A long series of failed nation-building campaigns—most recently Vietnam, Iraq, and Afghanistan—have apparently taught us nothing.

A much more alarming impact of the pervasive use of digital technologies is the relentless destruction of one of the key pillars of democracy. In less than a decade, Americans completely and willingly surrendered one of the most cherished of



all constitutional rights—the right to privacy. They enthusiastically handed over their personal data and their personal lives to ever-present corporations like Google and Facebook, and—inadvertently—to government agencies like NSA, CIA, FBI, and many local police agencies.

We find ourselves in a surreal world of pervasive—even invasive—surveillance and persuasion, where corporations and government agencies know more about us and our activities than we do. Our cell phones can now track us and report our locations everywhere we go. Our credit-card purchases provide a mosaic of meaning about who we are, what we believe, and what we want. Our online activity profiles us as never before. Corporations justify this unlimited surveillance in the name of our own commercial convenience, so they can offer us more of what we want. Government agencies justify it in the name of proactive law enforcement and the conduct of the perpetual war on terror.

The irony of this massive surrender of privacy is that we've voluntarily and enthusiastically provided commercial corporations with the kinds of data they'd have had to spend billions of dollars collecting—all for free. Consider the so-

bering proposition that a company like Facebook, for example, has used “free” online experiences to herd together a target population of a billion people, each one identified and catalogued in detail. These “useful idiots” can be commercially exploited in countless ways, all the while being kept happy by the fun of participating in an addictive social media experience. What is the real cost of “free?” Lately, George Orwell's dystopian *1984* scenario seems less far-fetched than it always has.

Updated Prediction: Social media will probably be more instrumental in populist uprisings, particularly in less-stable developing countries. It will increasingly highlight human rights abuses and may lead to the downfall of a number of oppressive governments. It will do little, however, to construct democratic replacements for the fallen regimes; that will continue to depend on the rise of leaders with rare capacities.

Some regimes may opt to democratize slightly, to pacify resistance; others may apply brutal countermeasures.

Chinese leaders will probably continue to resist democratization of the Internet, but at an ever-increasing cost to the fabric of Chinese society.

They will be increasingly forced toward a middle-road policy, hoping that rising prosperity will siphon off some of the populist anger that seeks expression in the online subculture.

The personal privacy issue, particularly in America, is probably already a dead horse. Although government and corporate spying into the personal lives of citizens has sparked outrage and legislative attempts to push back, it's difficult to imagine a significant retreat from the “all-seeing eye.” Surveillance—as newly defined—is just too lucrative a business, both for the big Internet companies and for governments at many levels.

GRAND PROMISE 7: The Internet Will Make Us Better Informed

The promise was that the Internet will create a better-informed public, with access to vastly improved sources of news. Alternative sources and channels for delivering news would bypass the traditional gatekeepers at the TV networks and large newspapers. Superior information products, offered by a host of online outlets, would force them to lift their game, and the general public would learn more and think more.

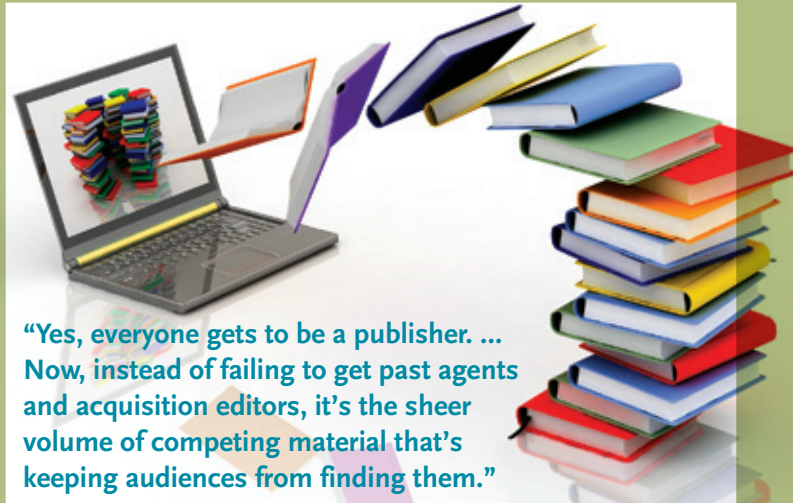
Sober Reality: The “news” that we have increased access to has become dumber than ever, for some very good commercial reasons.

The news business—including print, broadcast, cable, Web portals, and blogs—has become a live-or-die fight for viewer attention. A vast number of enterprises now use stories as “clickbait” to draw people to paid advertising (e.g., “Surprising Things Your Pet Is Thinking,” “Five Things Successful People Do in the Evening,” or “Should a Teacher Have Gotten Fired Over This Facebook Picture?”). The only variable that counts now is “eyeballs”—how many people view the ad message before, while, or after viewing the story. Search engine optimization (SEO) has become the shibboleth of the webosphere.

Virtually all providers of electronic news and entertainment have been driven to the most degenerate prac-

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tices for attention-grabbing: violence, conflict, vulgarity, voyeurism, and gratuitous use of sexuality. Entertainers are forced to make their personal lives ever more bizarre and provocative as they fight for precious seconds of media time or mentions on social media platforms such as Twitter. Probably the one defining feature of news now is the loss of subtlety, and with it the sense of innocence and wonder.

The major news sites now continuously tally page views for every article, on a moment-to-moment basis. Software algorithms dynamically render news pages with stories selected based on numbers of clicks and viewing times, not on interest, topicality, or journalistic value. Even Wikipedia, once touted as the most democratic of all information sources, is widely suspected of special-interest contamination, although it’s still very useful.

Updated Prediction: A new psychographic divide may emerge in the wealthy economies, with a certain segment of the population consciously rejecting the pop-culture values of narcissism, hedonism, and immediacy. This self-identified cohort will favor “subtle-culture” values such as respect for scientific thinking; ecological consciousness; humanitarian policies; appreciation

for education, literacy, art, literature, and the humanities; social and political civility; and civilized discourse about the ideas that matter.

Psychologist Abraham Maslow identified a coping skill that he named “resistance to enculturation.” This is the ability to see past the images, icons, and artifacts of the prevailing culture and to make independent choices about values, issues, and preferred futures.

As with other aspects of the modern culture, individual differences—family environment, early education, and exposure to more sophisticated value systems—will determine which individuals opt to stay with the media-acculturated herd and which become part of a new counter-culture. In the decades to come, the term *radical* might describe someone who defies the majority culture and opts for a view of life that is both new and old.

GRAND PROMISE 8: **Everyone Gets to Be a Publisher**

Before e-books, blogs, and on-demand printing of books, aspiring writers had little choice but to humble themselves before the editors of commercial publishing firms, hoping to get their knowledge products out into the marketplace. The Internet

would now push the gatekeepers aside, democratize publishing, and allow everyone to have their say. Writers would be able to sell their creations directly to the public; publishers would be unnecessary.

Sober Reality: Yes, everyone gets to be a publisher. Print-on-demand (POD) book manufacturing made it possible to print books one copy at a time. No longer would the economics of printing require large set-up costs and print runs of several thousand copies. Then followed the e-book in various incarnations, and books could be published to handheld readers at almost no cost.

This is bringing hordes of wannabe authors into the publishing market, with no particular means of assuring the quality of the writing. Within a few years, the tide of home-made literary sludge has risen so high that any individual’s book gets drowned.

Big-name authors are mostly unaffected, except for seeing an additional format for the publication of their works. Ironically, however, most would-be authors are in almost the same place where they started: unable to reach a reading public. Now, instead of failing to get past agents and acquisition editors, it’s the sheer volume of competing material that’s keeping audiences from finding them.

Bloggers—perhaps the biggest category of self-publishers—are becoming the new Hyde Park orators. Some of them are brilliant, some lame, some eccentric, and some crazy. Even the *vox populi* is largely unfiltered by editors: “Comment trolls”—people who hang out at news sites and attack news writers and one another—are the new tomato throwers of the culture.

Updated Prediction: Managing the “infosludge” will be one of the major challenges facing tomorrow’s digital citizen. Educated and enlightened people will seek new ways to reduce the tide of information coming at them, not increase it.

Smart browsers and filters may allow sophisticated screening of the content offered by news sites, blogs, and commercial sources; the user will define the level of quality he or she seeks, and the filters will screen

out articles and reader comments that don't meet the discursive standards set by the user.

Proactive users will use software tools to compile their own news reports and information summaries, rather than wading through compilations of stories selected only for their arousal value. News sources and writers will be user-scored and rated for the honesty, credibility, balance, political neutrality, and journalistic quality they present.

Those developments will mean that aspiring publishers and self-publishing authors will have to improve the focus, relevance, and readability of their material. They will probably see more demand for smaller, more neatly packaged books, with fewer *War and Peace*-scale megabooks. They will also have to channel their products more skillfully, and be content to reach smaller audiences with more focused material.

More people will be reading more stuff. Printed books will survive, and probably continue to sell fairly well. However, publishers—both large and small—will increasingly have to build multimedia combinations, extending print formats with online material, downloadable extras, and interactive or streaming media.

So What—and What's Next?

Toffler gave us the term *future shock*, referring to the sense of anxiety that people are feeling with the pace of change, the increasing impermanence of their environments, and the loss of familiar social and psychological landmarks. Now, we would update his terminology to *digital shock*.

Those whom I'd characterize as digital zealots, who can't or won't recognize a dark side to the revolution, will probably view this discussion as unfairly critical, pessimistic, or ungrateful. Those who are concerned about long-term effects, such as the impact of social media on child development and maturity, might feel that their concerns are validated.

The larger purpose for this discussion, however, is to advocate an open-minded and balanced view of

digital information technology. I believe we can value and appreciate the many benefits it has brought, and will bring, while also understanding its side effects, unanticipated consequences, and potentially destructive impacts. Neither zealots nor Luddites can give us a balanced perspective. That will take thoughtful analysis and informed conversations about its many implications.

Business gurus used to advise us to learn skills and methods such as *time management* to make ourselves more productive. It's likely that the most important emergent skill for this new age will be *attention management*. What shall we pay attention to, and what shall we tune out? How do we reclaim the time and attention that's being wasted by floods of e-mail, news pollution, and entertainment overload?

The human impact of digital information technologies—both costs and benefits—is likely to become one of the dominant themes in social and political discourse over the next decade. By the time we fully realize what the pervasive use of these technologies has done to us, it will be too late to change their course. Either we'll be living with a default future, one that simply arrives one day at a time, or we'll have confronted the major issues and questions head-on and shaped the technological future we want.

There's an interesting analogy lurking within this discussion. A hundred or more years ago, manufacturing corporations of all kinds freely disposed of their refuse and toxic waste into rivers and landfills, believing either consciously or unconsciously in the infinite capacity of the environment to absorb it. Now we're coming to the painful realization that the costs of those externalities must be shifted back to the corporations themselves. This has been a politically unpalatable necessity, but we are now on the way to the kind of grand correction that will be necessary to preserve a sustainable economy.

Similarly, the digital revolution has come upon us so rapidly that few of us could foresee the impacts of unbridled corporate exuberance. Now we're beginning to realize that

the "digital industry" is creating its own figurative "pollution." Government oversight in the United States, as well as in many other developed economies, has been relatively permissive. Parallel to the "green" issues and ideologies, we will have to grapple with the concept of a sustainable information environment. Maybe we should christen it the "blue" issue, for want of some favored color metaphor.

Four crucial questions will confront the digital citizens of the developed countries for a long time to come. They are:

1. What rights and privileges do we grant to corporations to do business in this strange new world of information?

2. What rights and privileges do we grant to governments and public agencies to monitor the lives and activities of ordinary citizens?

3. How can we facilitate the healthy development of normal social and emotional intelligence in young people, in the presence of nonstop pandering by commercial purveyors of addictive media experiences?

4. How can we reverse the unprecedented shift of wealth from working-class people to mega-corporations and their owners, and restore the rising middle class standard of living?

Perhaps the biggest question, the one that arches over all the rest, is: How can we construct and manage a national and international discourse that can lead to answers? □



About the Author

Karl Albrecht is an executive management consultant, business futurist, lecturer, and author of more than 20 books on professional achievement, organizational performance, and business strategy. He is listed among the top 100 thought leaders on leadership in America. The Mensa Society honored him with its lifetime award for contributions to the understanding of human intelligence. Among his books are *Social Intelligence: The New Science of Success* (Wiley, 2005), and *Practical Intelligence: the Art and Science of Common Sense* (Wiley, 2007). Web site www.KarlAlbrecht.com.