

PREPARING FOR QUANTUM BUSINESS

BY

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The shift from analog to digital, two decades old, is just now truly transforming business and government, and life in general. What's happened is prologue. Today's digital reinvention acknowledges that the mechanical innards of our systems and operations must be ripped out and replaced. That is *discontinuous* and we have to be ready for it.

What's coming will make the *new economy* disruptions seem quaint. Figuratively, we are on the bridge between classical and quantum mechanics. With this wholesale discontinuity, we will surely lose our footing and tumble into the land where old assumptions and methods no longer hold. Even computing's next stage is aptly called "quantum computing."

Systems integrators like IBM, CGI, and Accenture are restructuring their practices under various marketing-sensitive banners to focus on transformative digital structures and processes such as Cloud, cybersecurity, data analytics and machine learning. They are the canaries in our coalmine.

Symptoms of digital change are everywhere: certainly in the nature of our explorations (e.g., data analytics) and *real* innovation (AI is algorithmic judgment applied to data analytics). They are revealed in decreasing value of *incremental* innovations and in how current digital environments seem to be compromised at will. They show up in evolving debates about net neutrality, privacy, and the right to be forgotten. Moreover,

the foundational structures of high speed mobile networking and powerful computing reach widely (though arguably not far enough into the hinterlands), while generational change is helping normalize new social mores.

Today, digitization affects strategic competitive advantage, costs, and the mere existence of businesses beyond music and entertainment, finance, retailing, and readable content distribution (e.g., newspapers and the post office). Even those organizations that will continue to trade in physical logistics of goods in perpetuity (or at least until 3D printing obviates location-sensitivity or mass production) will also have digitization rewrite *fundamental* elements of business operations.

Government trauma will happen on several levels. First, painlessly rewriting the operational processes of these enormous and diverse organizations will not be easy. Consider the Phoenix pay and Shared Services Canada email fiascos as foreshadow. Second, civil servants will be displaced, full stop. How devastating the impact on individuals and society will be depends on how well the transition is anticipated and executed. Third, and most significantly, government will have to sagely anticipate and prepare for coming societal, commercial, and even constitutional challenges.

Whether addressing intellectual property, the limits of privacy, or state intervention into the (private) cyber-realm, for government not to respond to—or, better, lead the wave of digital change will effectively sanction arbitrage and rent-taking by the advantaged from the disadvantaged. This applies equally to foreign interests that act quicker on the disparity between the old written rules and the new operating rules, as it does to powerful corporations over weaker citizens. In this last area especially, government's burden is that it **MUST** act deliberately.

What does this mean? What can be done by business to weather and evolve into the real digital age?

1. Use the opportunity/pressure to restructure. This crossroads spells the end of effective incrementalism. Those that make good, non-conforming changes (because, by

definition, conforming will fail), will eventually succeed and prosper. It will be hard on businesses, on people, on society. But it is unavoidable.

2. Effectively displace, not destroy work. More people will need to anticipate and prepare to change. Critical thinkers and creative individuals better able to adapt their skills will be more resilient. For corporations, this is not a wholesale shrinking of the labour force. It means strategically redeploying labour to create new value. Don't forget: (1) the unemployed buy much less stuff and (2) a "commodity" business loses its ability to self-direct and its value diminishes. It's people's ingenuity that separates a business from fungibility.

3. Think differently. Representing a curve as an infinite number of horizontal and vertical steps, calculus is the conversion of analog to digital. It's how grey emerges from discrete elements of only black and white. The critical nuance to keep in sight is that these switches are not big: not Left or Right, nor buyer or seller. Rather, they are exceedingly small but persistent. Our practical discomfort with calculus manifests in the prototype of the "gig" economy best revealed via Uber and waning job stability. It will only expand, affecting more individuals and organizations. We all must adapt to ongoing, rapid cycles of angst and ease resulting from the direction and velocity of each of millions of changes in our days.

4. See bigger even as stuff gets smaller. Physical objects will continue to shrink. So what about the famous advice not to sweat the *small* stuff. Unfortunately, if digital transformation turns *big* stuff into an infinite stream of *small* stuff, the advice is inoperative. It demands a rethink. Going forward, sweating the *big* stuff will be to continually sweat the velocity and amplitude of change in the *small* stuff. Because humans are poorly designed for this, tending toward bias and falsely intuiting change, machine learning and AI become very important. Silicon chips do this sort of thing exceedingly well. So, learn to love AI without letting it control you. Caution is in order: while we will have to appropriately use evolving tools we don't yet understand, let's remain firmly in control of the wheel, governing the system.

Digital transformation will change lots. It will, however, not change the moral, human decisions about what's right and wrong in the biggest of contexts. In the new context, using (and valuing in the next generation of leaders) broad knowledge and critical thinking skills beyond any narrow confine of ideology, religion, function and expertise, or culture will be paramount. As always, leaders have to lead... even if it's just endless 1s and 0s.

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