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DISRUPTIVE TECHNOLOGIES: WHAT IS IT FOR INTERNAL AUDITORS?

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"The historian in all of us cares about the past. The decision maker in all of us cares about the future" (Clayton Christensen, Introduction xxxi, **Seeing What's Next, 2004***)*

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The Story Board

In September 2016, CBC's Current Affairs program launched a year-long project named *"The Disruptors*". Anna Maria Tremonti (AMT), the senior reporter for *The Current*, described this project as "Stories of people, ideas and things that are disrupting today's society, both negatively and positively". On November 8, as part of this project, AMT interviewed Clayton Christensen, (http://www.cbc.ca/radio/thecurrent/the-current-for-november-8-2016-1.3840044/november-8-2016-full-episode-transcript-1.3842442#segment3), the co-author of the ground-breaking 1995 HBR article "Disruptive Technologies: Catching the Wave", the prequel to his Innovator's Dilemma (1997), the book that revolutionized our thinking about technology, innovation and disruption.

Twenty-two years on, while the technology examples Christensen used in the last century are now in the museum of computer dinosaurs, his theory on disruptive technologies in our age of the sharing economy still rings true. Arguably, the two most dynamic online services companies – Airbnb and Uber - have elevated the relevance of technology, innovation and disruption to a new height. Co-incidental or by design, these two companies are frequently discussed alongside each other in media. In the April 2017 issue of the CPA magazine, Lara Bourdin reported that Airbnb is valued at US$30 billion, Uber at US$68 billion, and continuing to grow exponentially. Both "fast companies" are intermediaries running on electronic platforms. They match buyer and seller, fulfilling the supply and demand side of the business completely online.

This article explores the meaning of disruptive technologies as applied to Airbnb (www.airbnb.com) and Uber (www.uber.com) followed by some observations and possible implications for auditors.

Business Context

Long before disruptive innovation became "the buzziest of buzzwords in the business world" (CBC AMT- Christensen interview transcript), innovation and disruption/destruction have always been an integral part of the vocabulary of business transformation. The notion that companies must continually renew and reinvent themselves for sustainable and competitive advantage has been around for decades. Economist Joseph Schumpeter's concept of creative destruction captures it most succinctly. First published in 1943, Schumpeter's famous words on the process of "incessantly destroying the old one, incessantly creating a new one" still resonate to the present day. The reality is that no business is immune from being creatively destroyed. Business must therefore continuously innovate to survive. Schumpeter's concept of "creative destruction" embodies disruption and innovation. Perhaps the differences between technology-innovation-disruption in our time and creative destruction in the last century are in scale, speed, and impact of change brought about by technological advances (Note 1). It is hardly a surprise that Christensen added technology as a key ingredient to his book Innovator's Dilemma.

Given the above back narrative, it is easy to see that disruptive technologies are often associated with three key interdependent elements: technology, innovation and disruption. They are also the terms of reference for this article.

Christensen's Notion of Disruptive Technologies

According to Christensen, successful disruptive innovation has three ingredients: (www.christenseninstitute.org):

1. **Enabling technology** -- an invention or innovation that makes a product more affordable and accessible to a wider population.

   Both Airbnb and Uber tap markets that are ignored or under-served by mainstream service providers, namely the hotel and taxi industries. Their services are predicated on lower price made possible by sharing with other consumers.

2. **Innovative business model** -- a business model that targets "non-consumers" (new customers who previously did not buy products or services in a given market), or low-end consumers (the least profitable customers). This is most easily accomplished by new entrants since they are not locked into existing business models.

   Airbnb and Uber fit the description of the above business model. Their customers are not frequent mainstream hotel and taxi customers. In addition to more affordable pricing, they are also drawn to the convenience of one-stop end-to-end e-service, from ordering, payment and reporting using a free App on their smart phone. No cash changes hands. Payment is charged to the users' account.

3. **Coherent value network** -- a value network in which upstream and downstream suppliers, partners, distributors, and customers are each better off when the disruptive technology prospers.

   This value network provides a platform that enables users to communicate via a smartphone App with property owners willing to accommodate them (Airbnb) and car owners willing to drive them to their destinations (Uber). The websites function as digital offices accessible around the clock with minimum staffing and attractive service fees.

In addition to the above pronouncements, other aspects of Christensen's theory of disruptive innovation are also strikingly relatable to Airbnb and Uber. The following are a few to note from Christensen's seminal paper "Disruptive Technologies: Catching the Wave" (Note 2):

A. Products that do not appear to be useful to our customers today (disruptive technologies) may squarely address their needs tomorrow.

   Airbnb and Uber services do not fit the conventional profile of today's hotel clients and cab-calling customers. There is some irony in Christensen's words: "we cannot expect our customers to lead us toward innovations that they do not now need. Therefore, while keeping close to our customers is an important management paradigm for handling sustaining innovations, it may provide misleading data for handling disruptive ones".

B. Breakthrough innovation through technology will bring disruption. Current customers will reject or ignore because they cannot currently use them, firms serving this customer base will miss the boat and opportunities.

   In his interview with CBC's AMT, Christensen helps us understand why well-managed companies actually get killed by doing everything right. Focusing on current customer needs and demands could blindside companies' attention to the next technology wave. Airbnb and Uber fill this void. Christensen even goes further to suggest that understanding the current customer is the wrong unit of analysis, instead we should focus on what make customers buy products and services in the first place.

C. Keeping close to customers is critical for current success, but long-term growth and profit often depend upon a very different managerial formula.

   In today's terms, this "very different management formula" is likely a breakthrough App empowered by technology and innovation. Airbnb and Uber totally deviate from the practices of mainstream hotel management and the taxi business. Airbnb does not own any hotel properties. Uber offers transport services without owning a single vehicle. Business is entirely transacted online. In Christensen's own words, it is "an innovation that cannot be used by customers in the mainstream markets" (CBC-AMT-Christensen interview transcript).

The scope of this article is limited to the application of Christensen's key pronouncements as described in the above. Airbnb and Uber are used to illustrate how disruptive technologies work within Christensen's basic framework. The above serves as a backdrop for raising auditor awareness and generating future discussions.

Opportunities for Auditors in an Age of Disruptive Change

One recurrent theme from Christensen's work on disruptive technology appears to be the risk of over-emphasis on key customer's current needs to the detriment of potential non-key customer's future needs. A corollary to this idea is that this risk may spill over to using unsuitable current and historical data for analysing emerging customers ushered in by disruptive innovation. Couched in this context, the issue on hand is more strategic than operational. A future-orientation mindset goes a long way in tackling challenges in this ever-morphing landscape.

Airbnb and Uber are prime examples. These disrupters and enablers are born at the edge of opportunity and outside of the mainstream business environment. As such, they have more leeway to explore and establish their notion of governance when regulators, compliance and legal profession are all playing catch up. Fast companies like these have yet to face the same scrutiny as well-established mainstream business enterprises. In this business environment, auditors are well-positioned when called upon to bridging the GRC (Governance, Risk & Control) gap by raising the following high-stake issues:

1. **Governance Structure:** Corporate culture, tone at the top, executive risk appetite, and attitude towards status quo will be quite a departure from what auditors are used to assess in their audits. Disrupters are usually newcomers. Both Airbnb (2008) and Uber (2009) have not celebrated their 10th anniversary, yet their technology-driven business models already show strong signs to dethrone their competitors in the mainstream. Auditors should be open-minded when listening to these top executive views on GRC (or the lack thereof). In either case, the focus should be on the urgent public issues of the day. Uber is recently "entangled in a major US court challenge of its financial arrangements with its driver partners" who claimed they were under-paid by treating them as contractors instead of employees (CPA Magazine, November 2016, John Lorinc, p.30). London UK Uber drivers recently won a legal battle over minimum wage and holiday pay (https://www.ft.com/content/a0bb02b2-9d0a-11e6-a6e4-8b8e77dd083a). Airbnb, on the other hand, is taking the city of San Francisco to court over a new rental legislation (https://techcrunch.com/2016/06/27/airbnb-sues-san-francisco/). According to CCFA research report "Nobody's Business: Airbnb in Toronto" (September 22, 2016), Airbnb's legal and tax status in Canada remains murky in many jurisdictions. (https://www.policyalternatives.ca/airbnb).

   For seasoned GRC auditors, staying alert in this space is necessary for proactive participation.

2. **Accountability and Responsibility:** Regardless of the nature of the business of the auditable entity, fundamental issues of accountability and responsibility still prevail. The real-life legal issues cited in the above section confirm the need for a clear definition of the

roles and responsibilities of the players within the disrupter enterprise. Are they just an intermediary and a technology platform provider? What is the legal relationship between the property owner with Airbnb and the "driver-partner" with Uber? Who runs and controls the business, property owner or Airbnb? Driver or Uber? Only when we have clear documented answers to these fundamental questions can we determine the status and relationship of the key players and making these entities auditable.

Carl Mortished, a London-based Canadian journalist for the Globe and Mail nailed it in his initial concerns that auditors can fully resonate with. Although his issue is with Uber, the following statement is equally relatable to Airbnb:

If we are looking further than what it purports to be, in a different perspective, in a larger context as "a system that manages and controls a work force" – this "platform" or App has implications beyond selling rides to consumers, or pretending to be something it is not or delivering a service that is more complicated that it appears?" (Globe and Mail Report on Business, B2, November 3, 2016)

3. **Status of New Regulations to Address Disruptive Apps:** There is a general sentiment that the risk of being overtaken by disruptive technology could in turn bring on latent or new operational risks along the fault line. If Uber service becomes an integral part of urban transport infrastructure, or Airbnb taking over the hospitality industry, these entities could end up being regulated, more highly taxed and further disrupt the already broken landscape. In the interim, can auditors seize this timely opportunity to contribute in the midst of disruptive change? Are checks and balances built into the software? Who are the parties that ascertain the quality of the App? Are there external independent parties that opine that these Apps work as designed?

   Auditors can begin by paying attention to the development of new regulations or exposure drafts that address the most pervasive/disruptive Apps. CRA for one, has recently posted a page on the potential tax obligations in the sharing economy targeting 5 key sectors. Airbnb and Uber top the list (http://www.cra-arc.gc.ca/nwsrm/txtps/2017/tfsk27-eng.html).

New Audit Lens for a New Era

Airbnb and Uber remind us that when businesses are swept by disruptive technology and innovation, the future is going to be very different from the past. When this happens, "the paradigm breaks down", says Christensen. Given that the paradigm has shifted, we can no longer use the same yardstick to assess GRC. Essentially Christensen reinforces what Einstein said decades ago that we can no longer solve our problems with the same thinking we used when we created them. We have to continue to search for new meaning in our audits. What was value-adding in the past may not be relevant in the present, let alone in the future.

Airbnb and Uber have also shown us how quickly new technology-driven business models can take off with the potential to dethrone established leaders. According to a recent report from The Economist Intelligence Unit, companies of all sizes are now constantly on the lookout for disruptive trends, and seek to be disruptive in their own right (Note 3). We can take cue from what leading companies are doing to meet the challenge (Note 4).

Although the forces of disruptive technologies are real, we should be cognizant that how disruption affects companies and how quickly existing companies are disrupted depends on many unique factors. Some heavy industries such as forestry and shipping, which are subject to costly licensing arrangements, intensive capital investment and current low margins, may not be financially attractive to disrupters as markets or targets.

Disruptive trending reports provide useful insights into current and emerging technology and innovations that are likely to disrupt. They may yield some Eureka moments to rethink your audit universe. As a first step, we can pose some top-down questions to a mainstream/established entity ahead of the next wave of disruption:

- How vulnerable is your industry/sector as a disrupter's target?
- What is the tone at the top regarding the strategic significance of disruptive technology?
- What is the entity's technology risk appetite?
- From the patterns of major business-technology decisions, is there a strong indicator that favours the status quo?
- Does the entity use algorithms to spot, track and size-up Apps that could potentially benefit or disrupt its business of the day or environment?
- What are the current pressing governance issues for disrupter companies in media?
- Are major business decisions solely grounded in solid analysis of past data?
- Is there any indication of discord between senior management teams on disruptive technologies in emerging markets?
- What is the entity's position regarding its current and future customers and customer segmentation?
- Are there any signs of excessive focus on current customers at the expense of neglecting potential new customers for future products or services?
- Is corporate performance measured solely in the short-term, at a point in time?
- How does the entity score on the "Future Orientation" aspect of the Balanced Scorecard (in terms of customer relationship, product positioning and operational processes)?

The Last Question: Is Disruptive Technologies on your Playlist?

To stay current in an age of rapid disruptive change is daunting. To put knowledge to practical use is even more daunting. At this time, there are more questions than answers. To participate and contribute to the answers, we have to be in the game.

References

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