

A FRAMEWORK FOR DEVELOPMENT OF CORPORATE RESILIENCE FOR RESPONDING TO AS WELL AS FOR FOSTERING DISRUPTIONS

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Abstract: Businesses across domains are increasingly shaken up by rapid and massive incidences of disruption in recent times, the likes of which have not been witnessed in the preceding decades. While disruptive innovations have devastating effects, even on erstwhile market leaders, they also provide tremendous opportunities to nimble organisations. There is abundant literature in the domain, the majority of them being in the past three decades which provide business cases of disruptions, analysis of drivers of disruptions as well as some on strategies to overcome them. However, a consolidated framework for developing a response to disruptions was felt necessary. This research paper aims to carry out an in-depth analysis of extant literature and provides a theoretical framework for the development of corporate resilience for responding to as well as fostering disruption. The critical elements of the theoretical framework are developing a deep understanding of customer needs and changing consumer behaviour, scanning for potential disruptive changes in the business environment including new regulations, emerging technologies and changed offerings by organisations across industries to the meet customer needs, and an overhaul of capabilities and business processes to not only adapt to but also foster innovative disruptions, to enable organizations to continue to thrive through volatility and uncertainty.

Key Words: Disruption, corporate resilience, response to disruptive innovations.

Introduction

Businesses across domains are increasingly shaken up by rapid and massive incidences of disruption in recent times, the likes of which have not been witnessed in the preceding decades. A slew of stringent regulations such as those on digital assets and protection of the environment that pose compliance challenges to organisations have joined the ranks of technological innovations, which threaten the survival of incumbents. Convergence and agglomeration of technologies have blurred traditional industry boundaries. Products have morphed into bundled services, physical business has moved to online platforms, and customer engagement is getting reoriented. Further, automation and artificial intelligence are leading to a realignment of jobs from domain knowledge experts to data experts.

Technological innovations, encompassing new products along with bundled services and business process innovations, introduced by an entrant may initially appeal to only a particular segment of innovative risk-taking customers. Over time as the entrant improves the product, customer acceptance proliferates, and the entrant increasingly gnaws away market share from incumbents. Online retailers have moved away from traditional business models - prime real estate, merchandising, inventory holding and salesperson staffing, to their new business model with online round the clock presence and streamlined supply chain with no

inventory holding to drive down their costs, enabling them to pass on some cost benefits to customers, while providing additional convenience of door delivery. Most online retailers that began with listing very few product categories initially attracted few innovative customers, then they gradually expanded their merchandise, tweaked their business models and witnessed exponential growth, weaning customers away from brick and mortar retailers.

Incumbents faced with disruption have gasped at their market share losses, flogged their existing or somewhat improved offerings through legacy channels and have streamlined business models, to protect their business from new entrants as they did not have a matching or better offering than the entrant. Later on, gaining market share, entrants got transformed into disrupters and had the dreaded potential to wipe out incumbents. Responding to disruptive innovations, therefore, is a matter of survival for incumbents.

However, opportunities to leverage disruptive innovations and regulations also arise for incumbents to adapt or transform themselves, so as to challenge other competing incumbents as well as the disrupter. International Maritime Organisation (IMO) has been working towards the reduction of pollution from ships. In October 2016 IMO decided to limit sulphur levels in bunker fuel oil to 0.5% for use on board ships from 01 some new disruptive January 2020. IMO's 2020 regulation has been viewed as one of the most disruptive changes to hit the oil industry in the last few decades. While oil refiners hesitated to undertake massive investments to de-sulphurise high sulphur bunker fuel to produce compliant low sulphur bunker fuel, scrubber suppliers stepped in to install exhaust gas cleaning systems in ships to enable ships to continue to use cheap high sulphur fuel oil while complying with revised emission norms. An opportunity to produce upgraded bunker fuel and sell at higher prices is being largely ignored by major oil refiners in view of the uncertainty of return on their investment, due to doubts on demand for compliant fuel, driven by expectations of weak compliance enforcement. This opportunity, however, is being utilised fully by scrubber suppliers who are increasing capacity and speed of execution to serve an increasing number of ship owners queuing up to meet the ensuing compliance deadline.

Literature Review

Scientific and technological developments have been progressing since the dawn of civilisation. While many of them were incremental, some were genuinely disruptive. Disruptive technology has been defined as an emerging technology whose arrival in the marketplace signifies the eventual displacement of the dominant technology in that sector (Ganguly, 2010). Disruptive technology as a domain of research in business was explained as disrupters' offers of cheap substitutes to products of incumbents, which capture low-end customers first and later move upwards to capture of high-end customers (Bower & Christensen, 1995). Disruption, however, is not an event or immediate phenomenon but a process that may take several years or even decades (Christensen & Raynor, 2003), sometimes quickly and completely, but at other times slowly and incompletely (Wessel & Christensen, 2012). Researchers have often looked at the resources and capabilities of incumbents while studying their response to innovations. The Resources – Processes - Values framework helps in understanding success or failure of an incumbent in responding to disruptions, according to the disruptive innovation theory developed by Christensen & Raynor (2003), depending on the incumbents' capabilities (Christensen, 1997), values and processes used to oversee their investment decision making. Thereafter, the process of building the theory continued (Danneels. 2004, Christensen, 2006; Markides, 2006).

Disruptive innovation theories have stressed upon factors in the domain of business management and not much on technological factors that facilitated the innovation. Bridging the gap and further building on extant theories of disruptive innovation, Karimi and Walter (2015) explained that adapting or extending key components of Resources – Processes – Values enhances capabilities for digital disruption.

In most domains, many disruptive technologies are pursued contemporarily, in view of uncertainty regarding commercial viability. Some disruptions do not follow traditional adoption rates and show rapid adoption rates. To survive these attacks Downes and Nunes (2013) provide a four-pronged strategy of recognising early, slowing the disruption, readiness to divest and trying to diversify. Some disruptions, however, can take several years to develop before a prototype is fit for commercial launch. In such a scenario, it is difficult to predict, in nascent stages, which ones will survive and become commercially dominant. Wessel & Christensen (2012) advised incumbents to identify strengths of the disrupter's business model, relative advantages over the disrupter, and the five barriers that the disrupter might need to overcome the relative advantages in future – momentum, technology implementation, ecosystem, new technologies and business model. This unearths barriers to be strengthened and exposes areas of incumbent vulnerability. Furr & Snow (2015) identified those hybrid products that create a new product by infusing elements of disruptive technology along with the existing technology, as a strategic transitional response tool for incumbents. They listed seven types of hybrids and sorted them into three categories according to the stage of disruption – already set in, just started or a possibility in future.

Gans (2016) provided three prescriptions for incumbents to survive disruptions, which are – an integrated organisational model having varied technological capability to be able to respond better to product architectural disruptions, ownership of a critically important feature such as a design which consumers are deeply attached to, and a strong sense of corporate identity that can be moved away from narrow industry-specific domains to a much more comprehensive solution focussed domain encompassing multiple technology domains. The underlying strategic theme spelt out relies on building up different technological capability that incorporates customer insights and remains in sync with new developments to reinvent itself, to continue to stay abreast of the latest and endear themselves to their customers. As a response to disruptions, transforming themselves can also be a viable approach for incumbents by either adapting their core business to the changing environment or creating an altogether new disruptive business themselves, based on capabilities shared amongst these two approaches (Gilbert et al. 2012).

It is evident from extant literature that the theory of disruptive innovations is evolving, and so is the guidance for developing a response to disruptions. It is therefore felt to posit a consolidated framework for the development of corporate resilience for responding to as well as for fostering disruptions and this research paper fills that gap.

Theoretical Framework

A three-step theoretical framework for incumbent firms in their quest for the development of corporate resilience for responding to as well as for fostering disruptions is now proposed and discussed along with additional discussions on some enabling building blocks.

Step 1. Understanding Evolving Customer Needs:

1.1 *Gain an update in-depth understanding of evolving customer needs.*

Changing customer needs, generally referred to as demand-side disruptions are evolving problem sources that businesses need to gear up to address satisfactorily, but they may not initially be massive for primarily two reasons. The first being inability of customers to conceptualise a viable product to meet an aspirational need or an entirely new category of need. The second reason being sceptical initial adoption.

1.2 *Identify the compelling attributes of their products which makes them the preferred choice of their customers.*

Adoption rates of innovations are initially low because of stickiness to legacy products emanating from certain perceived or real customer benefits, perceived value for money, or lack of a compelling reason to migrate from accustomed solutions meeting their needs or regular use. There is often an overkill of features in specific innovations beyond the needs of the majority of customers along with a steep usage learning curve for some of the complex functionalities. Customer apprehensions of unreliable performance levels coupled with the expectations of later introduction of improved products, duly rectified of initial performance glitches, also deter initial adoption. These factors restrict initial adoption to a handful of high risk-taking innovative customers with surplus disposable income. However, in specific product categories, the adoption of new technology has been fast and steep, which has caught incumbents off-guard.

1.3 *Recognise patterns of changes in consumer behaviour such as purchase process, deviant usage of products, physical conditions of usage, ownership pattern – whether owned, leased, shared or hired.*

The incisive customer information on product purchase and usage, at times, throw up astounding customer insights. Continual update of such insights enables the incumbent to either capitalise on their strengths or to reorient their business model to continue to remain their customers' preferred choice.

1.4 *Widen the study to include how differently some similar needs are being met by incumbents and disrupters in other industry segments and technology domains.*

Innovation may strike some industries earlier and later proliferate with modifications to other industries. Early identification of trends and patterns in other industries, the response of those incumbents and adoption data of their customers provide a breather for better preparedness.

The critical enablers for this step are:

Evolved Business Processes: Incumbents need to undertake in-depth market surveys to unravel more significant customer insights and monitor patterns in shifting purchase and usage behaviour. They need to create focus groups to identify strengths in specific utilities delivered by their products and identify attributes which are relatively weak.

Evolved Capabilities: Incumbents need to develop capabilities to monitor online chatter, augment speed and quality of response to social media feeds and watch out for emerging trial usages of innovations. They need to build an ecosystem encompassing third-party experts for early sensing of a change in customer sentiments pertaining to their products.

Step 2. Identifying potential and evolving disruptions:

2.1 Scan the business landscape for emerging technologies, new regulations, product trials, business model experiments, and even failures.

This step enables incumbents to gauge consumer response to innovations and adapt their product offerings, within the limitations of their existing product development and production capabilities, in order to extend their product lifecycles so as to continue to leverage entrenched production and distribution systems to maintain profits with limited incremental outlay so as to keep disrupter challenges at bay, albeit for some more limited time period. It also provides a scope to tweak models of usage and delivery mechanisms to address the evolved customer needs and changing consumer behaviour. New regulations generally try to catch up with disruptions much later, as is evident from upcoming policies on drones, cryptocurrency, and so on. However, some regulations such as data privacy, emission control, domestic content or local value-added requirement, are disruptive by themselves and they pose tough compliance challenges, which might require re-oriented business processes.

2.2 Track launch of new products and services even in entirely different industries aimed at different customer segments.

Innovations introduced by entrants potentially create supply-side disruptions, that can vary in magnitude and velocity at which they strike and snatch market share. Many incumbents including erstwhile market leaders have been waylaid as they either ignored innovations while continuing to invest further in their legacy products and production assets or failed to put together a cogent response to the challenges thrown up by entrants and disrupters in not only technology innovations but also in business model innovations. However, not all new innovations translate to success in the marketplace, while some take a long time to capture significant market share. This, therefore, poses a challenge to incumbents to be able to improve their efficacy to scan the emerging business landscape, predict potentially disruptive innovations from a plethora of promising ones and after that to take the plunge to commit scarce resources, instead of squandering them over all that creep out of incubations.

The critical enablers for this step are:

Evolved Business Processes: Incumbents need to create a structure to perform this activity with the utmost seriousness that it deserves. A whole time dedicated innovation scanning team may be worthwhile in many industries, but it may not find acceptance in some incumbents. Such incumbents may institute a stop-gap arrangement by creating part-time innovation scanning teams within each business unit and business function, to function as early detection and warning system. The team members while performing their routine revenue generation activities are to be given additional responsibility to spend time individually on the activity. The teams should meet periodically at sacrosanct pre-set intervals to exchange information, discuss and debate innovation events amongst the team members. These teams need to handle membership issues and team dynamics, by having dedicated and embedded specialists to manage such issues.

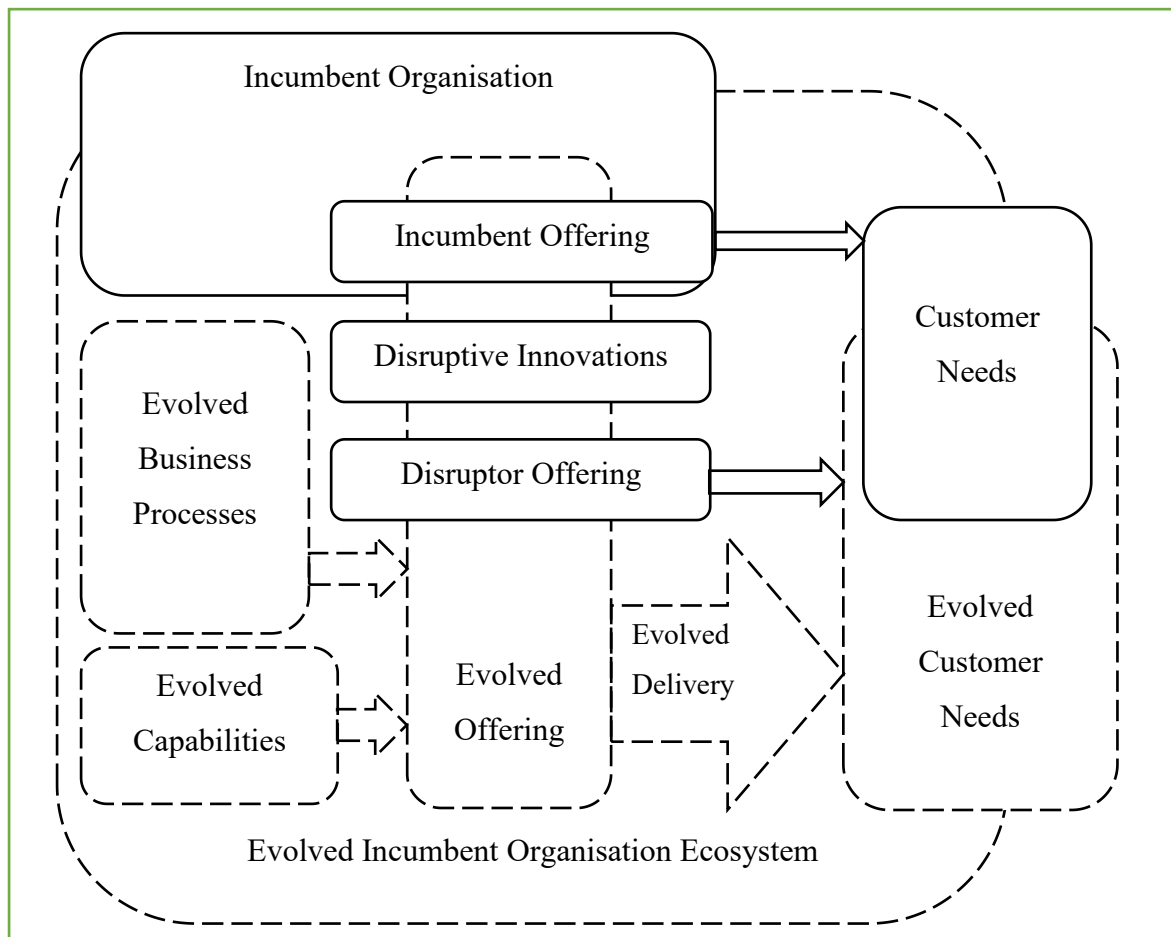
These teams can gradually be expanded to include cross-functional experts and also members from groups beyond the incumbents' boundaries like their vendors, channel partners, customers and domain experts from academia and research organisations. Such teams across the incumbent needs also to be integrated to address challenges holistically and generate

better data-driven choices of putting pieces together for the incumbent management to focus on.

India's one-time premier watchmaker HMT Limited correctly sensed the emergence of quartz technology but failed to act resiliently on it, as they buckled after their initial launch of high priced quartz watch models flopped in the market. Their flawed business process of treating the initial market setback as an indicator of long term customer preference for mechanical watches, relying on existing capabilities and continuing to invest heavily in mechanical watch manufacturing facilities, eventually led to the demise of an erstwhile giant.

Evolved Capabilities: Team members need to continually update themselves on evolving cutting edge technology, interact with domain experts, researchers and analysts. The team needs to disseminate specific knowledge and create an organisational knowledge repository. The incumbent needs to foster a broad organisation culture of a heightened sense of awareness of the latest technological developments and a sense of ever readiness to adopt massive and disruptive changes in business processes, driven by alignment towards a shared purpose.

Fig. 1. Theoretical Framework Model



Step 3. Developing evolved offerings:

3.1 Strengthen product offerings.

The preceding two steps entail venturing into the unknown. Action needs to be initiated in an environment of some amount of ambiguity. It is also foolhardy to always strive for first-mover advantage as examples abound of their failure when the second or third in line carefully watched and evaded pitfalls of the first movers to develop robust offerings, corner more significant market share and successfully sustain their business. Product offerings need to be continually strengthened by assimilating customer insights, the product features that endear the product to them, the unique product utility that they cherish, and the usage pattern that they engage into. Attributes of disruptive technologies can also be infused to prolong product life cycles and keep them relevant to customers. Launch of electric and gasoline hybrid car by Toyota is an attempt at this strategy. New offerings also require, at times, building non-existent capabilities and adopting supporting business processes uprooted from the traditional culture of the firm. Such upheaval in charting unforeseen courses demand substantial investments without any certainty of returns, may lead to cannibalisation of legacy product sales and result in diminished overall returns in the short term, not to mention the possibility of confusion amongst the ranks of the firm on the future direction of the firm and its product portfolio. These are difficult choices for a quarter to quarter performance-focused culture.

3.2 Heighten barriers for disrupters.

Entrenched incumbents need to leverage their stellar positions, exploit production scales, prime infrastructure, established distribution network, marketing alliances and partnerships to deny market penetration opportunities to disrupters by entering into long term supply, sales and service contracts, saturating third-party production facilities, driving down cost of ownership for customers, upgrading technology platforms, and managing the entire support ecosystem to make them continue to operate within the exclusive boundaries of the incumbent's legacy product design.

3.3 Introduce innovations.

Potential innovations identified by innovation scanning teams need to be taken forward through a robust process of agile experimental development. Incumbents will have to develop the capability not just to fend off disrupters in a reactionary mode but as cogent responder that can repeatedly churn out the latest innovations, for which incumbents may need to reinvent themselves in terms of their enhanced capabilities and redesigned processes. They also need to reorient themselves, re-position themselves from a producer of goods to a provider of solutions using the latest technologies, as well as define for themselves a broader business domain.

3.4 Revamp business model.

Incumbents need to incorporate elements of strength from disrupter's business model to revamp their legacy business models. They need to ensure improvement in customers' convenience of purchase process through an omnichannel customer experience, continued ease of usage, accommodate for altered ownership patterns, explore opportunities to sell subscription-based solutions as against ownership based products sales, examine fulfilment of superior, varied, and customised performance requirements and be mindful of appropriate positioning of their product to continue being perceived as superior value for money.

The critical enablers for this step are:

Evolved Business Processes: Incumbents need to set up independent cross-functional business units with allocated resources to pursue the development of innovations with a clear mandate of being comfortable with acceptance of failure in its efforts in business experimentation in a limited scale. They need to identify gaps in their capabilities and institute processes to fill the gaps by collaboration with competitors and disrupters to jointly develop products, use a lean approach to rapidly launch prototypes for trials and further development, enter into contract for product development, license usage of technology, invest in venture capital-backed start-ups and also actively explore acquiring start-ups that own valued and futuristic technologies, either under development or proven with intellectual property rights or have access to different markets. Amazon Alexa Fund has invested in at least 40 startups over the last three years, including IoT firms Ecobee and Owlet Baby Care, smart control firms Radio, TrackR, and others, GPS tracker firm Invoxia, and smartphone startup firm Essential. Amazon has acquired several startup firms during the last decade; amongst them, ten firms were Series A stage, eight firms were Seed/Angel stage, and six firms were Series B stage. Notable acquisitions by Amazon include a data security firm Harvest.ai, a game development firm Game Sparks, a smart camera and doorbell startup Blink, which enabled Amazon to deploy innovations and expand their portfolio rapidly. Whole Foods was acquired by Amazon for penetration into the brick-and-mortar space, while the acquisition of Dubai based online retailer Souq.com enabled Amazon to penetrate e-commerce in the Middle East.

Incumbents also need to de-risk themselves from financial exposure to several uncertain new technology development projects in their books. These projects can be pursued under select purpose vehicles or as a joint venture with a technology partner.

Once a new technology development project is successful, and experimental offering gains traction, the incumbent, now on an equal footing with the disrupter, needs to rapidly scale up to a suite of offerings either as a separate business unit or as a subsidiary or a joint venture depending on the 'positioning distance' and 'internal capability distance' of the new offering from the legacy portfolio of products of the incumbent. The journey to develop corporate resilience then gets underway.

Evolved Capabilities: Internal capabilities need to, and totally new capabilities need to be added in new technology development and production. It may not be possible or feasible to internalise all the required incremental capabilities which can be built across its business ecosystem with collaborative product or platform development and production alliances. It can also be furthered by partnerships with academia, technology innovators and research organisations.

Conclusion

Responding to disruptions is easier said than done, and the process of launching a response itself is financially more painful for incumbents, as compared to disrupters. Extant literature has sided incumbents as their survival against the onslaught of disrupters is difficult. The proposed theoretical framework developed in this paper collates research work over the past two decades and provides a comprehensive practical tool for incumbents to adopt in their quest to survive and thrive in a rapidly evolving business environment. It thus has implications almost entirely for managerial practice. The framework being a result of

theoretical study suffers from the limitation of empirical validity. The strategic management domain in which the framework is exposed to, demands longitudinal studies over multiple instances of a successful response to and fostering of disruptions in different industry segments. Hence future research on the individual constituents of the framework is advised for imparting legitimacy to the framework.

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