Using Design Thinking to Respond to Crises
B2B Lessons From the 2020 COVID-19 Pandemic
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USING DESIGN THINKING TO RESPOND TO CRISES: B2B LESSONS FROM
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Abstract

We examine the value of design thinking in times of crisis. Drawing on examples of firm innovations during the 2020 Covid-19 lockdown, we propose that responding to disruptive events represent wicked problems that require managers to break out of established patterns of thinking. Design thinking, or the problem solving approaches and tools of designers, represents one such approach. Drawing on extant research, we identify a three-stage process of design thinking: disrupt, develop and deliver, and transform. We examine each stage, identifying how careful disruptive thinking with a focus on understanding problems within their context can give rise to innovative solutions, resulting in a more resilient organization.

Keywords

Design thinking, wicked problems, crisis management, B2B, innovation.

Abstract

We examine the value of design thinking in times of crisis. Drawing on examples of firm innovations during the 2020 Covid-19 lockdown, we propose that such black swan events represent wicked problems that require managers to break out of established patterns of thinking. Design thinking, or the method and problem solving approaches of designers, represents one such approach. Drawing on extant research, we identify a three-stage process of design thinking: disrupt, develop and deliver, and transform. We examine each stage, identifying how careful disruptive thinking with a focus on understanding problems within
their context can give rise to innovative solutions, resulting in a more resilient organization and enhanced brand reputation.

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### 1.0 Introduction

As we entered into the second decade of the 21st century, few, if any, industrial marketers would have imagined that by March 2020, many of their markets would have disappeared almost overnight, with supply chains and trade severely disrupted. Furthermore, it was not clear if, and when, normal business would return, given that many of their upstream clients may not survive the Covid-19 virus lockdown. The emergence of the Covid-19 virus in the first half of 2020 represented a ‘black swan event’, or an unforeseen event with severe economic consequences (Taleb, 2007). The phrase “in these crazy times” entered into everyday common business usage, reflecting a reality characterized by uncertainty (of both the present and future). For business-to-business (B2B) marketers, the subsequent lock down by governments around the world resulted in an almost immediate loss of markets, as a rapid collapse in consumer demand ensured the bull-whip effect quickly took hold within supply chains (Lee, Padmanabhan & Whang, 1997; Hufford & Tita, 2020).

Black Swan events, although devastating, are also believed to be entirely predictable in hindsight. Given the likelihood of reoccurrence due to new viruses and/or mutations, and the high possibility of calamitous environmental events arising from climate change, what tools can B2B marketers use when these situations occur? In this short article, we draw on research on design thinking (Luotola, Hellström, Gustafsson & Perminova-Harikoski, 2017), or the problem solving method and tools used by designers to deal with wicked problems...
Why design thinking? With many nations making reference to ‘wartime conditions’ (Financial Times, 2020), we believe that design thinking, with its emphasis on disruption, abductive thinking, and reframing, offers insights for the necessary pivot (Reis, 2011) that many B2B firms will have to undergo to navigate uncertain times, and even potentially, emerge stronger (Beverland, Wilner & Micheli, 2015).

For further support for design thinking, we only need to examine the rapid adjustment of some unlikely B2C firms. At the end of 2019, who would have thought that in a few months, some of the biggest names in consumer luxury would have quickly shifted their famed ateliers away from crafting delicate perfumes, fine wines, and beautiful clothes, to supplying hand sanitiser and personal protective equipment (PPE) to stretched front line medical staff? Yet this is precisely what LVMH, Burberry, Brooks Brothers, the Miroglio Group, Coty, Zara and many others are doing. Struggling airlines such as Delta and Jetblue have been offering free flights to medical professionals to ferry them quickly to hotspots across the United States, building new networks involving local governments and not for profits such as American Red Cross and Doctors without Borders (Puhak, 2020). Even McDonalds shared the secrets of its sausage and egg McMuffin recipe to retain brand connections with loyal users who were unable to venture out and get their favourite sandwich (Hardiman, 2020). The speed at which these organizations, seemingly went off brand, and used their capabilities to adjust to a new reality was remarkable, and offers lessons for B2B marketers when the next crisis strikes.

2.0 Design Thinking & Wicked Problems

Design thinking is an umbrella term encompassing the logics, practices and tools of design (Micheli, Wilner, Bhatti, Mura & Beverland, 2019). The term ‘design thinking’ was first used by Herbert Simon (1969) in his seminal *The Sciences of the Artificial*, to refer to the unique
mental tools used by designers to solve problems. The term gained greater momentum when CEO of design-consultancy IDEO, Tim Brown, formalized his firm’s approach to strategy in a 2008 *Harvard Business Review* article and subsequent book. For Brown (2008), design thinking was something any manager could engage in - “design thinking uses the designer’s sensibility and methods to match people’s needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity” (Brown, 2008, p. 86).

In essence, design thinking was the design discipline’s pitch to C-suite (Nussbaum, 2011), where design moved out of its functional silo to provide new ways of approaching core strategic challenges and organizing (Micheli, Perks & Beverland, 2018). In a major conceptual review, Micheli et al. (2019) define the key attributes of design thinking as follows: creativity and innovation, user-centeredness and involvement, problem solving, iteration and experimentation, interdisciplinary collaboration, ability to visualize, gestalt view, abductive reasoning, tolerance of ambiguity and failure, and blending analysis and intuition. Supported by the use of design thinking tools and methods such as brainstorming, prototypes and ethnographic methods, these attributes are believed to be especially valuable for addressing the type of wicked problem that Covid-19 and other black swan events represent (Beverland et al., 2015).

For businesses, the challenges brought about by the Covid-19 pandemic are novel, multifaceted and interdependent – “CEOs must rethink their routes to market as channel partners either adjust quickly or fail fast. They need to modify their supply chains as critical components are “cut off.” They must rebuild their offshore customer care centers” (Allen, 2020). Maintaining the continuity of business activities amidst the disruption caused by the epidemic represents a “wicked problem”, which Horst Rittel defines as “a class of social system problems which are ill-formulated, where the information is confusing, where there
are many clients and decision makers with conflicting values, and where the ramifications in the whole system are thoroughly confusing.” (cited in Churchman, 1967, p.141). Wicked problems have ten defining characteristics (Rittel & Webber, 1973), which we present in Table 1 with examples of B2B challenges arising from Covid-19. In summary, how best to respond to the effects of Covid-19 on business is not obvious. The nature of the problems facing B2B marketers shifts daily, with governments changing the rules of the lockdown on a daily basis, often in response to new data that cast doubts over the key assumptions held just a week earlier.

Key practices such as JIT supply chains can no longer be supported in an environment with major disruptions to transportation and warehousing (Maidenberg, 2020). When lockdown conditions do ease, it is unclear what the ‘new normal’ will be, with many markets such as air travel potentially taking years to recover. Airbus for example has warned that, even with travel restrictions removed, passengers may be unwilling to fly in cramped environments with little social distancing, possibly extending the industry recovery period (which was healthy prior to the crisis) to five years and requiring major redesigns to aircraft (on top of the shift to carbon neutrality required of the industry by regulators) (Jolly, 2020b). Fragile sectors such as publishing, already struggling due to the disruption of social media, have seen an almost total decline in advertising revenue, leading many, such as New Zealand’s Bauer Media to shut down titles such as the Listener and North and South, leaving the nation without significant local content providers (Australian Associated Press, 2020).

<Table 1 about here>

3.0 Implications for B2B Marketers During Crisis
Given the novelty, complexity and magnitude of the crisis, organisations are forced to think beyond tried-and-tested ways of handling it. Designers “conceive and plan what does not yet exist” (Buchanan, 1992, p. 18), making design thinking a particularly well-suited way for organisations to address the complex challenges in the broader business environment (Kolko, 2015) and solve wicked problems (von Thienen, Meinel & Nicolai, 2014). We propose that B2B organisations can leverage design thinking in their responses to the Covid-19 crisis in three stages: (1) disrupt, (2) define and develop, and (3) transform (see Figure 1).

<Figure 1 about here>

### 3.1 Disrupt

Wicked problems cannot be solved with an extension of the same dominant logic used in times of greater certainty and stability. However, stepping outside of tried and true logics is difficult for managers. Design thinking is one approach that can enable this, as it places an emphasis on disrupting strategic assumptions and practices (Micheli et al., 2019). Disruption involves the use of abductive reasoning (Martin, 2009). Previous research has identified three interconnected practices involved in disruption: naïve questioning, problem interrogation, and contextual immersion (Beverland et al., 2015). We explore these in more detail below.

Naïve questioning involves asking seemingly simple questions to uncover existing assumptions, and help generate ideas for new alternatives. In previous research, naïve questioning was used to challenge pre-existing assumptions about brands as a means of driving through new innovations that would address critical stakeholder demands, yet initially seemed at odds with the brand’s position (Beverland et al. 2015). Examples of these questions include: “Why can’t we do the following?”, “Why can’t we meet the demands of this stakeholder / situation/ challenge?” and “What could we do to respond to this situation?"
The use of the term ‘naïve’ is deliberate as simple questions of the type mentioned help surface assumptions about ways of operating and enable one to interrogate the problem in more depth, while also helping to identify concerns that may need to be addressed in a solution. One example of this process is described below:

“In mid-March, Lennon Rodgers, director of the Grainger Engineering Design Innovation Lab at the University of Wisconsin in Madison, fielded a plea from the university's hospital to make 1,000 face shields. "Initially, I didn't take it too seriously," he recalled. But after his wife, an anaesthesiologist, told him the shields were indispensable for dealing with highly infectious patients, he scoured hardware and craft stores for parts. He teamed up with Delve, a local design firm, and Midwest Prototyping, a contract manufacturer, to design their own "Badger Shield". They expected to use 3-D printers, then concluded that wouldn't achieve the necessary scale. They uploaded the design to their website along with the necessary parts for anyone to download. A few days later Ford Motor Co. did, and, with tweaks of its own, began turning out face shields for Detroit-area hospitals.” (Ip, 2020).

Naïve questioning is characterised by the extensive use of abductive reasoning, defined by Martin (2009) as “the logic of what might be” (p. 27). The New Zealand government for example used abductive logic to define their Covid-19 response, working back from the worse possible scenario of 80,000 deaths (from a population of four million) to develop an early lockdown strategy that has been hailed worldwide for its success (Fifield, 2020). Traditional modes of reasoning (i.e., deductive and inductive) that rely on proven facts and structured experience (Kolko, 2010) often produce satisfactory outcomes under stable conditions. However, they fall short of addressing the indeterminacy of wicked problems,
which require the creation of new knowledge and insight that can be implemented into creative and innovative solutions, as the example above shows. To do this, organisations need to move beyond accepting the world as is, but “actively look for new data points, challenge accepted explanations, and infer possible new worlds” (Martin, 2009, p. 65).

This then leads to the next step which is to interrogate the problem. Whereas it is common to marvel at the final design, design thinking is initially problem focused rather than being in a rush to jump to solutions (Micheli et al., 2019). Early on in the spread of Covid-19 many firms were quick to rush to solutions, focusing on leveraging capabilities to produce quick outcomes. Scottish based BrewDog was one example, leveraging its alcohol production facilities to produce hand sanitiser for hospitals. However, the sanitiser failed to reach the alcohol levels necessary for hospital use and therefore production was rejected (Butler, 2020). In contrast, in the example quoted above, scalability at rapid pace, followed by distribution, was the ultimate problem (rather than basic manufacturing) and one that has been hampered many similar local productions of PPE. Lennon Rogers, as with many other marketplace actors turned to sharing platforms, which then enabled Ford to leverage its scale and reach to equipment found its way to healthcare professionals.

An emphasis on understanding problems helps avoid the rush to poor solutions. Problems often emerge out of a context of stakeholder rules, decisions, and practices that must be addressed in order for solutions to be viable (Beverland et al., 2015). Contextual immersion enables design thinkers to empathise with users and buyers (e.g., Brown, 2008). Since wartime allegories were common during the Covid-19 crisis, one example of contextual immersion from WW2 was the logic behind much Soviet weaponry (often adapted from Western designs). The Soviets had large reserves of personnel, however desperately needed to get them to the front line. The Soviet Union’s formidable T34 tank was designed to address this need, being simple to manufacture (resulting in thousands being ready in the key
battle at Kursk), and requiring little training in use (and providing crews with protective armour and significant firepower). Popular video call application Zoom has had to quickly plug holes in its platform security and privacy policies, removing software development kit that sent data to Facebook following user and LinkedIn, additions that were previously thought to add significant value to the platform, but now gave rise to legal concerns that limited its adoption by sensitive government and business users (Morrison S., 2020).

3.2 Define and develop
Disrupting results in either pivoting (changing or adding to your offering) or reframing (putting a different emphasis on an existing offer). This step involves taking stock of existing resources and capabilities to support disruptive solutions. Following Figure 1 this involves capabilities matching, problem scoping, and solution development.

Capabilities matching is evident in many of the examples of firms pivoting and reframing during Covid-19. For example, chemical manufacturer Ineos promised to retool their operations inside of two days to ensure adequate supplies of hand sanitiser (Jolly, 2020a). As an example of reframing, furloughed British Airways staff decided to leverage their skills for customer care by creating a lounge-experience within hospitals to serve exhausted NHS staff during breaks in lengthy (up to 72-hour) shifts (Campbell, 2020). Along with many fashion brands, Burberry pivoted by retooling its Castleford factory, home of its iconic trench-coat, to quickly produce over 100,000 surgical masks, drawing on its extensive supply chains across the globe to ensure an adequate supply of the relevant material inputs (Street, 2020). Tech giants such as Apple and Tesla also drew on their existing expertise and supply lines in offering to source and produce much needed medical equipment in the USA (Masunaga, 2020). In many instances, companies went beyond their organisational boundaries and pooled experience and resources in line with the ‘interdisciplinary
collaboration’ principle of design thinking (Micheli et al., 2019). Tech companies such as Microsoft and Facebook partnered with WHO to organise #BuildforCOVID19, a global hackathon to promote the development of software to address Covid-19 related challenges in a wide range of areas (Mihalcik, 2020).

Once capabilities have been identified, the problem needs to be scoped in order for a solution to be developed. In times of crisis, the need for rapid pivoting or reframing require an emphasis on what we call ‘de-design’, or stripping offers down to their essentials. For example, it is worth thinking about how modular production and simplicity were the hallmarks of many WW2 successes (e.g., Mulberry harbours for D-Day). De-design enabled US ship builders to quickly produce an almost endless supply of modular “Liberty ships”, vessels that could be laden with much needed supplies for the United Kingdom and the Soviet Union. The effectiveness of Germany’s U-boat blockade meant vast numbers of ships were needed to replace lost vessels, necessitating the development of designs that were quickly scalable, able to be manufactured by the large numbers of initially inexperienced women entering the workforce, and were functionally and cost effective (Allen, 2020).

The wicked nature of the problems that emerged during Covid-19 also meant that designers’ emphasis on iteration became an invaluable tool for responding to possible threats to national health services. While a consortium of high-tech manufacturers (Airbus, Rolls Royce) focused on scaling up production of ventilators made by smaller specialists such as Smiths Medical, local manufacturer Gtech offered a stripped back approach. The firm made a stripped back ventilator design open-source to ensure rapid production should the worse-case scenario of an overwhelmed National Health Service (NHS) emerge (a very real concern given that the long lead times and subsequent regulatory approval challenges the likes of Dyson who had offered their services; Davies and Rankin, 2020). The design was made of
standard industrial parts, many of which could be produced using 3D printing. Founder Nick Grey stated:

“There was a basic option in the brief and a more sophisticated one and what we set out to do was the very basics within two weeks. If you need us, great, if you can get something more sophisticated then that is fine as well.” (Barnett, 2020).

Abductive reasoning is iterative in nature, as decision makers become exposed to new information and explore new potential explanations, they update and clarify their understanding of the problem (Beckman and Barry, 2007). This allows problem scoping, whereby the organisation has a more concrete idea of the problem and is able to re-define it in terms of one that is narrower, and better lends itself to solution development. Solution development involves creating alternative ways by which the problem can be addressed. This process is aided by the use of design tools such as visualising and prototyping (Liedtka, 2014) to experiment with the solutions and assess their usefulness “in draft form” (Micheli et al. 2019, p. 14). By doing so, they can learn from their mistakes and feed their newly generated insights into the next iteration loop. Gtech’s design was ultimately rejected by the NHS, as the government’s shift from containment to mitigation took pressure off the health service and ultimately saw orders for ventilators scaled back and cancelled. Nonetheless, Grey’s iterative approach for a worse-case scenario also offered solutions to underfunded health systems globally, who demanded less complexity, resulting in uptake around the globe. After having their first batch of hand sanitizer rejected, BrewDog worked closely with the NHS to revise the formula to meet the clinical standards, and was able to deliver the second batch to hospitals in parts of Scotland (Morrison H., 2020).

3.3 Transform
Design thinking is transformative (Brown, 2008) in so far as it aims to enhance a firm’s competitiveness and, in the context of crises, resilience. In their study of brand innovation, Beverland et al. (2015) identified that design thinking enabled brand managers to balance relevance with consistency, with the new design both mapping back to the brand’s heritage and also expanding it in the minds of key users, opening up the possibility of new opportunities in the future (restabilization). For firm’s operating through the Covid-19 crisis, actions that reek of authenticity, such as BrewDog’s decision to use its idle transportation capacity to deliver school lunches to stay at home children (in lower socio-economic areas) got widespread praise on Twitter, and will no doubt reshape the brewer’s abrasive ‘punk’ reputation with end-users and key channel buyers.

Luxury brands leveraging their productive capacity to produce protective equipment for medical staff will also enhance their reputation. These firms have an intuitive understanding that they must step up in times of crisis precisely because they are seen as non-essential (Joy et al., 2012). They also have a long heritage of linking their brand stories with that of the nation state (Beverland, 2009), with firms such as Burberry and Brook Brothers having produced military uniforms since founding (WW1 And the American Civil War respectively) (Dumcius, 2020). The actions of firms such as LVMH in producing a plain label sanitiser to be given away to French hospitals (Moné, 2020) will enhance their reputation across multiple stakeholders, and potentially opens up new business-to-business markets in times of spare capacity. The decision of fast fashion giant Zara will likewise cement its reputation in home country Spain (Reuters, 2020).

For many business to business organizations, reputational effects will be felt in key markets, such as potential employees, institutional buyers (governments for example), and channels. Through their actions, firms such as Gtech have gained a higher profile among the general public than they enjoyed previously. Although they may not sell directly to
consumers, one outcome of design thinking would be for B2B to move to B2B2C and vice versa, a possibility for professional chef uniform maker Hedley and Bennett who quickly pivoted to producing protective gear for hospital staff (Bennett, 2020). With their heightened reputation, employment of these organizations’ brands will undoubtedly rise.

Crisis also offers firms more tangible opportunities. Should Zoom solve its privacy and security issues, it may become the dominant platform for video conferencing, for example. The leveraging of capabilities may represent the first steps into new markets for many of the firms discussed within this article. Those of us teaching within universities will be all too aware how the sudden need to shift everything online enabled an outpouring of innovation and change. Common among many academic staff was the observation how things deemed institutionally impossible in February suddenly became entirely possible and necessary in March. Sweeping away past practices and bureaucratic systems may enable faster innovation and greater appetite for change, or at the very least, stimulate the reassessment of how necessary previous practices really were. Pharmaceutical companies for example have fast tracked trials of vaccines, in much the same way as they did for the Ebola outbreak in 2013-4 in the Democratic Republic of Congo (Salem, 2019).

Finally, transformation will require business marketers to rethink established practices. For example, while make or buy decisions are essential to B2B marketing, in the context of pandemics, relying entirely on distant global supply lines may limit a firm’s ability to respond to crisis events. Shortages of personal protective equipment for medical staff have seen governments scramble to secure supplies from key producing nations. However, producing nations such as Turkey understandably placed restrictions on such sales to guarantee their own access to critical supplies. Some commentators have already noted that for many de-industrialized economies, Covid-19 may trigger strategic re-tooling to ensure key capabilities can be activated as and when needed. Design thinking can help in
redesigning existing ecosystems, potentially in favour of a mix of local and global suppliers to ensure risk is adequately managed.

4.0 Conclusion

The 2020 Covid-19 pandemic generated a number of wicked problems for industrial marketers, who were suddenly faced with a lack of markets and potentially disastrous future. Wicked problems require tools that enable decision makers to break out of preferred patterns of thinking. Drawing on the literature, we identify a three stage process of design thinking that involves disrupting previous assumptions and practices, developing ‘good enough’ solutions, and transforming firm practices to ensure greater future resilience. For some firms, surviving the crisis may be the best possible outcome; however for others, enhanced reputations, forward and backward integration and new markets may result from the use of design methods and tools. Critically, the ‘new normal’ will require greater attention to risk management and scenario planning, involving the deployment of design thinking rapid responses to emergent and fluid challenges.

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### Table 1. Covid-19, Wicked Problems and B2B challenges

| Characteristics of wicked problems (Rittel & Webber, 1973) | Covid-19 pandemic as experienced by B2B marketers |
|------------------------------------------------------------|--------------------------------------------------|
| 1. There is no definitive formulation of a wicked problem. | Market demand collapses; no clear idea of future viability of customer and supply base. |
| 2. Wicked problems have no stopping rule. | No clear path out of lock down; lack of clear timeline to ‘normalcy’. |
| 3. Solutions to wicked problems are not true-or-false, but good-or-bad. | Solutions need to “make do”; to focus on survival or so form of resource use or longer term but undefined opportunity. |
| 4. There is no immediate and no ultimate test of a solution to a wicked problem. | Normal time to market disrupted by immediate need. |
| 5. Every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial-and-error, every attempt counts significantly. | Failure can potentially cost lives and waste precious time. |
| 6. Wicked problems do not have an enumerable (or an exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan. | Solutions involve combinations of resources that may be novel; solutions will require ‘off-script’ approaches that temporarily park taken for granted assumption and operational shibboleths. |
| 7. Every wicked problem is essentially unique. | Future challenges may take different forms, have different timelines, and impacts. |
| 8. Every wicked problem can be considered to be a symptom of another problem. | Derived demand collapses; labour subject to illness and stay at home orders; suppliers of resources may collapse or face difficulties; transport of inputs severely disrupted. |
| 9. The existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution. | Evolving government responses shift with updates in data, explanations and beliefs about best likely approach. What was ‘correct’ yesterday may be ‘wrong’ today. |
| 10. The planner has no right to be wrong. | Failure can potentially cost lives and waste precious time; impact on reputation may be long lasting. |
Figure 1. Three Stages of Design Thinking

Disrupt
1. Naïve questioning
2. Problem interrogation
3. Contextual immersion

Define & Develop
1. Capabilities matching
2. Problem scoping
3. Solution Development

Transform
1. Mapping
2. Re-stabilizing