

## Supplementary Paper

# Business Reinvention for Resilience in the Post-Pandemic Era

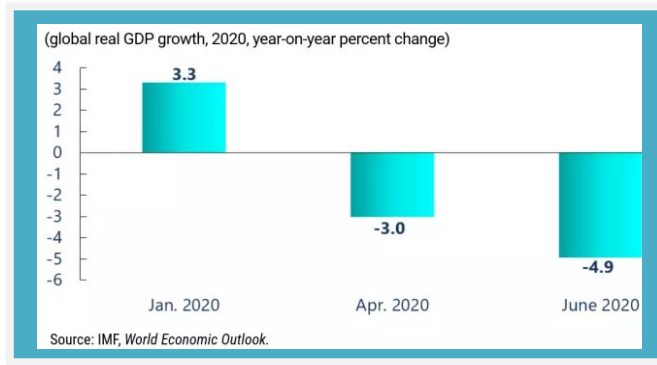
By Soe-Tsyr Daphne Yuan ([daphneyuans@gmail.com](mailto:daphneyuans@gmail.com))

### ABSTRACT

Due to the Covid-19 worldwide pandemic and resulting containment lockdown policies, various business sectors were adversely impacted. Business resilience turns into a significant theme that addresses the business ability to endure and flourish through unpredictable, changing, and potentially negative occasions. This open-access supplementary chapter aims at breaking down the required resilience elements and connects them to the business reinvention methodology as conveyed in our book. Additional suggestions to business resilience strategy and managerial implications are also provisioned. In short, our book's business reinvention methodology could provide businesses with a systematic approach to develop their business resilient ability in the post-pandemic era.

### INTRODUCTION

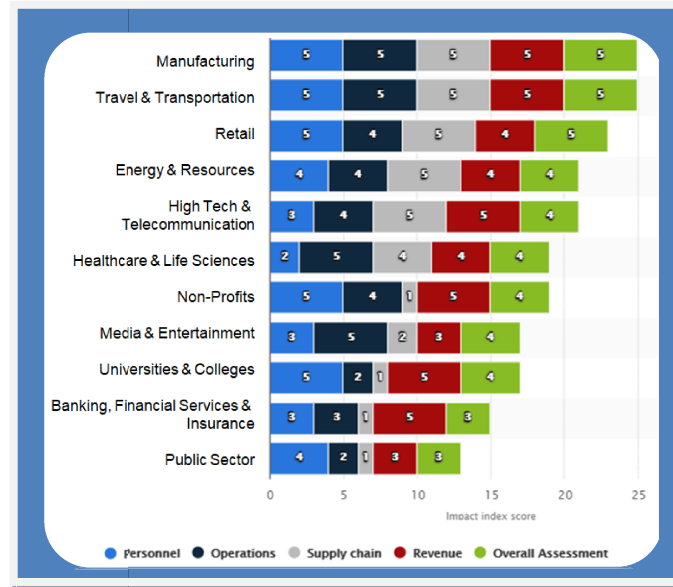
Because of the Covid-19 worldwide pandemic followed by various containment lockdown policies and executions, the global economic was adversely impacted except a few exceptions (e.g., some online retailers, pandemic-related materials or equipments, *etc.*). The great lockdown has set off the worst downturn recession since Great Depression (Figure 1), and these projections implicate an amassed loss of over US\$12 trillion to the global economy over two years (2020–21) since the crisis (World Economic Forum, 2020a).



**Figure 1.** The great lockdown triggering the worst downturn recession since Great Depression (Source: World Economic Forum)

In addition, COVID-19 negatively impacted almost all industries worldwide. Two of the most impacted industries are manufacturing and travel and transportation. Statista (2020) addressed the projected COVID-19 impact index across industries and businesses on a 5-point scale from minor impact (1) to severe impact (5) on the general issues of personnel, operations, supply chain, revenue and overall assessment that weighed differently across

different industries as shown in Figure 2. United Nations Industrial Development Organization (2020) also reported that the top five specific industry problems due to the pandemic and lockdown include fall in demand, payment of wages, difficulty in financing, value chain disruption, and logistic adversity as surveyed in Figure 3.

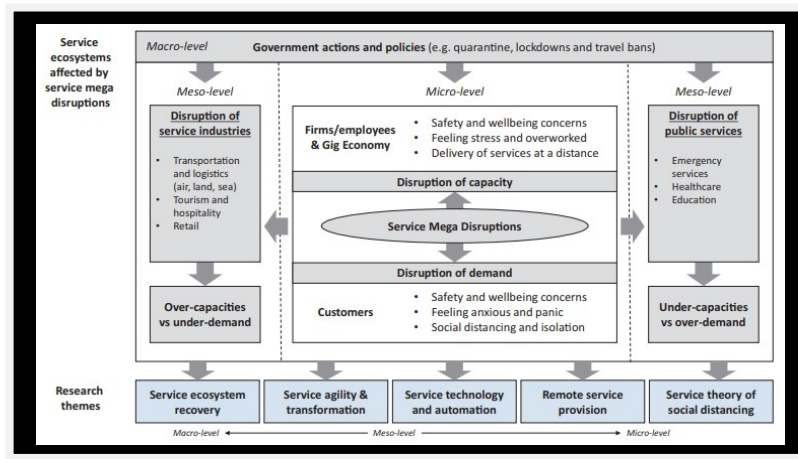


**Figure 2.** Projected COVID-19 general impact index across industries and businesses – minor 1 to severe 5 in 2020 (Source: Statista)

	Problem faced (ordered by share of firms reporting it)				
	1	2	3	4	5
<i>Food processing</i>	Payment of wages (57%)	Fall in demand (54%)	Difficulty in financing (34%)	Valuechain disruptions (29%)	Logistics problems (23%)
<i>Textiles and apparel</i>	Payment of wages (74%)	Fall in demand (71%)	Logistics problems (35%)	Difficulty in financing (34%)	Value chain disruptions (17%)
<i>Basic materials</i>	Fall in demand (73%)	Payment of wages (69%)	Difficulty in financing (36%)	Valuechain disruptions (32%)	Logistics problems (18%)
<i>Chemicals, rubber and plastics (inc Petroleum)</i>	Fall in demand (69%)	Payment of wages (61%)	Valuechain disruptions (35%)	Difficulty in financing (32%)	Logistics problems (22%)
<i>Machinery, electronics and transport equipment</i>	Fall in demand (69%)	Payment of wages (69%)	Difficulty in financing (30%)	Valuechain disruptions (23%)	Logistics problems (22%)
<i>Other manufacturing</i>	Fall in demand (69%)	Payment of wages (66%)	Difficulty in financing (56%)	Valuechain disruptions (18%)	Logistics problems (15%)
<i>Non-manufacturing</i>	Fall in demand (57%)	Payment of wages (44%)	Difficulty in financing (32%)	Logistics problems (19%)	Value chain disruptions (16%)

**Figure 3.** Top 5 specific industry problems due to the pandemic and lockdown in which numbers in brackets indicating the portion of businesses in the industry that revealed this specific problem (Source: United Nations Industrial Development Organization)

The phenomenon shown in Figure 2&3 shares similar implications that are defined as service mega-disruptions (Kabadayi et. al., 2020). Service mega-disruptions (SMD) refer to unanticipated market disturbances brought about by a pandemic and occur on an enormous scale simultaneously influencing various stakeholders and ecosystems that are hard to get back to normal (Figure 4). SMDs strike customers and employees at the micro level by generating disruptions/disturbances of demand and capacity, service industries and public services at the meso level by disrupting/disturbing how services are created and delivered, and government actions and policies at the macro level by disrupting/disturbing how cities, businesses and human life are running. That is, these combined disruptions/disturbances bring about those various industry impact indexes and problems (Figure 2&3) in accord with the fundamental differences of industries and businesses. Accordingly, particular attentions to some specific topics (e.g., ecosystem, agility, automation, etc.) to minimize the aforementioned disruptions/disturbances were advocated to be vital for industries/businesses to better understand the pandemic implications and develop the ability to cope with unpredictable crises in the future.



**Figure 4. Service mega-disruptions (SMDs)**

(Source: Kabadayi et. al. (2020))

In other words, most business sectors run into crises that made them incapable to maintain their core businesses during the pandemic (Hemus, 2020). In spite of the fact that it's difficult to anticipate when and where an crisis will happen, businesses must be set up to be resilient (i.e., the ability to endure and flourish through unpredictable, changing, and conceivably unfavorable occasions). For the example of Amazon, its years of cultivation and development of asset-as-a-service have made it become resilient and even progressively grow in business and avoid the previously mentioned adversary pandemic impacts. Amazon's asset-as-a-service refers to passive assets imposed by active behaviors including additional services like supply-side integration, demand-side integration, demand prediction, demand

discovery, *etc.* besides the asset's fundamental functioning service (Choudary, 2020). Their main ideas are to leverage supply-side scale to open up asset-as-a-service to ecosystem partners; leverage data across the ecosystem to continually improve prediction models; the more asset-as-a-service scales, the bigger the ecosystem partners using Amazon logistic infrastructure and the greater Amazon's data capture for enhancing prediction models.

On the other hand, the COVID-19 pandemic heightens the necessity of social innovations for the public and private sectors to provide those most vulnerable with assistances. The assistances include effectively communicating facts, offering telehealth services, providing microfinance loans, scaling community-based COVID-19 screening, prioritizing mental health and wellness, *etc.* (World Economic Forum, 2020b). For example, cities partner with hotels to house homeless populations and prevent the dissemination of the coronavirus in crowded shelters besides the screening.

That is, the pandemic additionally amplifies the connections between governments, between the public and private sectors, and between businesses' inward functions and their customers and supply chains. These often overlooked interconnections help clarify why the new recession was perceived to be more extensive, more profound, and more hard to pivot than the past (Romeo et al., 2020). COVID-19 has pushed businesses to consider and test numerous new partnerships and possibilities so as to cooperate in new approaches to create ecosystem-wide innovation and resilience with the objective of securing their returns on capital and reacting deftly to unexpected spikes and drops in demand and supply.

Accordingly, in the post-pandemic era businesses/organizations should think hard about how to reinvent themselves in broader partnerships/ecosystems in order to develop their resilience ability. This supplementary chapter then aims to explore the essential elements of business resilience, followed by connecting these elements to our book's business reinvention methodology.

### **EXPLORING CAPITAL LEVERAGE W.R.T. BUSINESS RESILIENCE**

For the overall pandemic negative impacts, higher negative magnitudes seemingly occur to capital heavier industries/businesses than those of capital lighter (Figure 2). For the example of the US largest car-rental business Hertz filed bankruptcy during the pandemic because its heavy capital of rental cars being unable to operate owing to the pandemic lockdown. Imagine what could be a resilient ability with which Hertz could do things differently so that it is able to survive through such unpredictable and unfavorable occasions.

To the contrast, during the pandemic lockdown Amazon's business was even better than

before. Although Amazon mainly is a platform-based business, it doesn't have to be asset light in light of its heavy warehouse assets. Amazon's asset-as-a-service manifests the notion of "agenthood" with which its passive heavy warehouse assets imposed by active behaviors including additional services like supply integration, demand integration, demand prediction, demand discovery, *etc.* (besides the warehouse assets' fundamental functions). These infrastructures and services sustain and cope well with the pandemic lockdown in a scalable way. The strategic combination of asset ownership and active services open to ecosystem partners underlie Amazon's growth and resilient abilities (Choudary, 2020).

Revisiting the bankruptcy-filing Hertz example, what if its asset of rental cars open to whoever want to earn extra money by being delivery men but have no their own cars during pandemic? Likewise, what if the US leading department-store chain Macy, barely dodging bankruptcy-filing, leverages its private-label partner network to make relevant pandemic necessities and utilize Hertz network of delivery assets with the aforementioned on-demand manpower? These imagined scenarios simply intend to provoke wealth of non-commonplace viewpoints/perspectives on a business' assets.

An alternative case of Fathom is a 3D-printing services model that utilizes its capital assets to print parts used by businesses working on rapid prototyping or low-volume production. Fathom's Covid-19 winning strategy was following the supply chain to source, design, or make whatever the medical community needed to battle Covi-19 (Inc., 2020).

This strategic on-demand leverage of existing capital assets in response to unpredictable unfavorable pandemic occasions is an important resilient ability for businesses to survive or even thrive in light of the presence of those pandemic negative impacts. Krogh et al. (2020) called this resilient ability as ultrafast innovation that repurposes the existent assets, knowledge, resources and technologies to cope with the pandemic crisis. This resilient ability is very different from typical SKU proliferation referring to the addition of different forms of the same product to serve diverse market segments (Shih, 2020). In addition, the extent of capital leverage could be unfolded in different levels (say low, middle and high) which means the magnitude of the possible ways of capital assets being leveraged on demand.

However, business resilient ability requires their workforce to be empowered to leverage their capital assets on which the active behaviors of resilient services could be designed and created to cope with various crises. That is, leveraging or creating capital assets and their imposed resilient services in an on-demand way could be regarded as a vital business resilience element. For empowering business workforce in avoid of employee furlough during pandemic, this chapter would then demonstrate the approach with which the workforce's

required resilient ability could be developed and also explain the approach's connection to our book's business reinvention methodology.

### **EXPLORING SHARED VALUE W.R.T. BUSINESS RESILIENCE**

For strategic leverage of capital assets, it is imperative for businesses to identify their goals of asset leveraging in advance. For example, Tesla's capital assets were proposed to be used for manufacturing ventilator for the pandemic; Amazon capital assets were used and expanded for delivering household grocery during pandemic lockdown; Hilton offered sheltering in place for local and national governments to provide housing to first responders and health care workers during the pandemic, *etc.*

These examples demonstrate the goals of being able to create shared value (Porter & Kramer, 2011) of which the main conception refers to the competitiveness of a business and the wellbeing of its surrounding communities being mutually dependent. This dependence involves the societal or the environmental. Perceiving and exploiting the connections between the societal/environmental and the economic progress could unleash the potentials of launching future growth development and rethinking capitalism. In addition, Serafeim (2020) addressed that businesses are bound to be more resilient despite running into unexpected crisis as long as they are managed for the long term and in accordance with societal megatrends (not simply short-term profits) in view of their data analysis of more than 3,000 firms between late February and late March 2020 (i.e., the initial peak period of the pandemic collapsing global industries and markets). Kaplan (2020) likewise claimed that resilient businesses incorporating this thinking as an indispensable aspect of their innovation and transformation endeavors could help them go through occasions of crisis.

The extent of shared value could also be unfolded in different levels (say low, middle and high) which means various value capacities intended by the shared-value goal. Accordingly, setting the goal of shared value should be regarded as a vital business resilience element before leveraging/creating capital assets and their imposed resilient services. This chapter would then demonstrate how this shared value goal setting could be related to our book's business reinvention methodology.

### **EXPLORING EMPOWERMENT AUTONOMY W.R.T. BUSINESS RESILIENCE**

For staying resilient upon unpredictable, changing, and potentially unfavorable occasions, a business usually needs a bigger diversity of on-demand capital leverage, yet it is favored for the business to push along its operations with a productive and sustainable way even considering its greater on-demand capital leverage diversity. This subsequently leads to the necessity of ecosystem's empowerment autonomy according to our book's chapter 2&6, owing

to uncertainty making flexibility vital and empowerment autonomy serving the flexibility with a productive and sustainable way.

In other words, orchestrating the ecosystem's empowerment autonomy should be regarded as a vital business resilience element. COVID-19 has provisioned a definitive awakening on the reality check, and stressed the importance of this empowerment autonomy trend and the crucial need of future flexibility (Nunes et al., 2020). In addition, customer wellbeing has been widely recognized to be positively related to those contributions from free/beneficial digital services, which could also be regarded as instances of empowerment autonomy even though they are not accounted by GDP (Brynjolfsson & Collis, 2019).

Meanwhile, the extent of empowerment autonomy could likewise be unfolded in different levels (say low, middle and high) which refers to various flexibility capacities enabled by empowerment autonomy. This chapter would then demonstrate how this orchestration of ecosystem's empowerment autonomy could be related to our book's business reinvention methodology.

### **CONNECTING TO OUR BUSINESS REINVENTION FRAMEWORK**

By further examining the three essential business resilience elements in relation to the three dimensions of our business reinvention framework (Chapter 2's Figure 1) together with the value universe (Chapter 3's Figure 11), as follows are the explanations about how the aforementioned three business resilience elements really are special embodiment of our business reinvention framework's three dimensions:

- **Shared value element:** By examining the dimension of strategic directions within the value universe (Chapter 3's Figure 11), the highest wellbeing extent of strategic directions includes the societal and the environmental that mean the designated value space to which a business' value propositions should comply with. This then corresponds to the essence of shared value – the mutual dependence between business economic progress and the societal/environmental wellbeing. In addition, connecting to the customer meaningful value dimension of the business reinvention framework (Chapter 2's Figure 1), a shared value could then manifest itself in the capacities of the functional, the emotional or the life-style changing that address different kinds of value co-creation impacts on the part of customers.
- **Capital leverage element:** Connecting to the business priority dimension of the business reinvention framework (Chapter 2's Figure 1), the higher priority a business attempts to create improved/new business values for old/new segments of prospective customers, the higher leverage of capital assets the business usually exert (rather than merely utilizing their assets for functional efficiency). This is because the business often needs

to think hard to explore the leverage of its assets to achieve something new or better upon the priority of creating/improving value being high. These endeavors often involve creating additional active services imposed on the assets or exercising strategic ownerships of the assets in order to realize the fulfillment of improved/new business values. In addition, the higher the requirement of on-demand asset utilization is, the higher diversity business asset leverages need to be explored, bringing about different magnitudes of capital asset leverage.

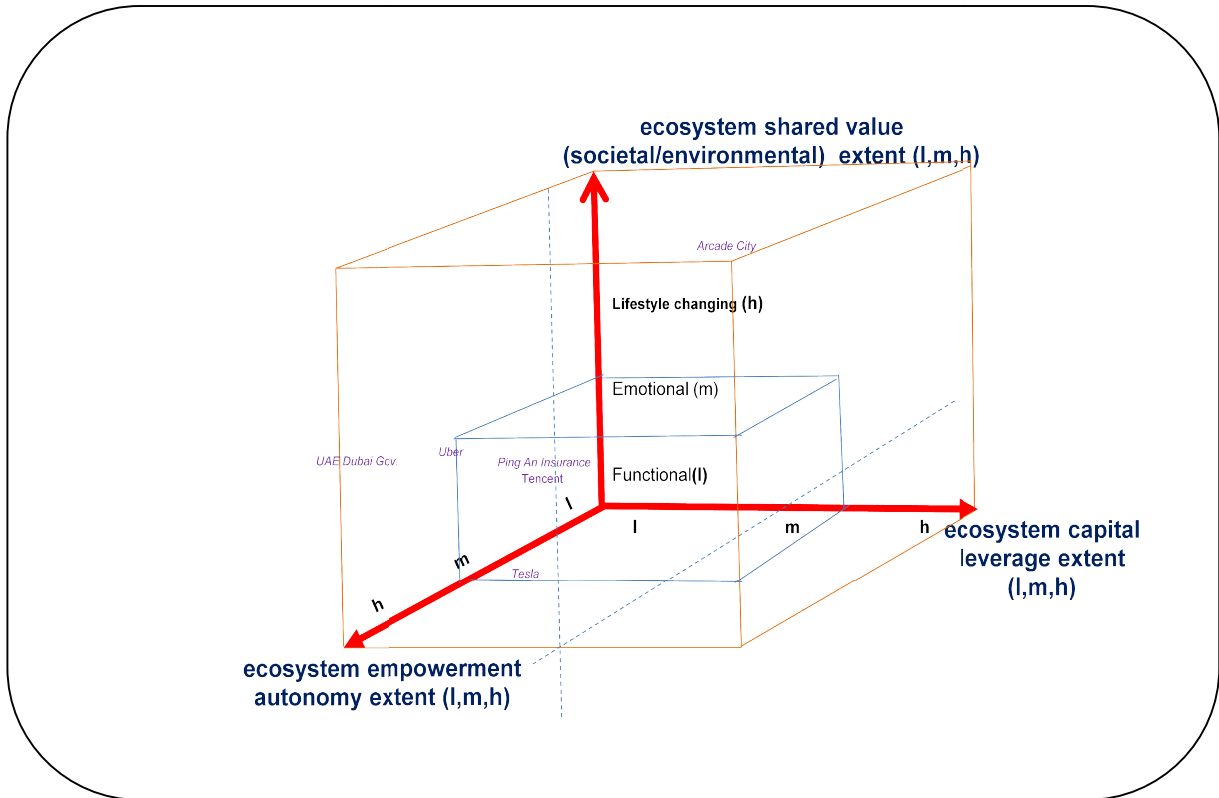
- Empowerment autonomy element: Connecting to the digital business strategy dimension of the business reinvention framework (Chapter 2's Figure 1), the higher on-demand diversity of capital asset leverage a business attempts to create, the higher flexibility the business' digital solution architecture and operants should embody. This higher flexibility is for supporting dynamic empowerment autonomy required by those on-demand assets' active services seamlessly exercised among ecosystem stakeholders so as to achieve productive and sustainable business operations. This consequently leads to various flexibility capacities enabled by empowerment autonomy.

## **ANALYZING EXISTING CASES OF BUSINESS RESILIENCE ALONG THE THREE RESILIENCE ELEMENTS**

Per the above discussion, the three business resilience elements could be regarded as ordinal elements of which their extents/capacities unfolded are then set to be low, middle and high without loss of generality. An analysis of some exemplar cases against the three essential business resilience element dimensions is provided in terms of examining their things done during the unpredictable and unfavorable pandemic occasions, manifesting their distribution as depicted in Figure 5.

For example, besides the environmental value of using clean energy, the automaker Tesla retooled its facility assets to engineer a prototype of functional ventilators (aiming to provide oxygen to critically ill covid-19 patients) so as to create the societal value for the COVID-19 crisis (Cnet, 2020). Tesla's ventilator prototype utilized many existing parts that were normally found in a Model 3, including its touch-screen display as the monitoring user interface and its infotainment system as the main computing system (together with lithium-ion battery, pumps, compressors, tubes, oxygen mixing chamber) to drive valves controlling the flow of gases into the ventilator. Their design mainly hoped for showcasing to relevant manufacturing about how to accelerate the minimal effort to assemble ventilators in light of their shortage then. Without loss of generality, these endeavors could be regarded as exerting low-level capital leverage diversity (i.e., limited diversity) and middle-level empowerment autonomy (i.e., centralized empowerment autonomy).





**Figure 5.** The distribution of some exemplar business cases' things done against the three essential business resilience elements

China Ping An Insurance, China's biggest insurer, has been investing on new technologies of AI, Blockchain and Cloud Computing to transform itself and develop its five ecosystems (financial services, health care, auto services, real estate services and smart city services). In the health care ecosystem, Ping An has an extensive model to serve online/offline patients, providers and payers through its subsidiaries and affiliates, including Ping An Good Doctor, Ping An HealthKonnnect and Ping An Smart Healthcare being a part of Ping An Smart City. During the pandemic outbreak, online health care services were exceptionally adopted by customers, businesses and regulators. Ping An's research institute helped in excess of 30 urban cities in China to analyze and predict the pattern of cases to more readily guarantee fitting local control measures (individual/societal mental assurance) given their forecasts achieving a 99% precision rate for expectations one day ahead of time and 98% precision rate seven days ahead of time (PRNewswire, 2020). Without loss of generality, these endeavors could be regarded as exerting middle-level capital leverage diversity (i.e., median diversity) and high-level empowerment autonomy (i.e., centralized/decentralized empowerment autonomy).

The UAE's Ministry of Community Development (MOCD) has been exerting digital identity of citizens, AI systems, blockchain systems, and chat systems for government services. UAE was positioned 8th globally in the Online Service Index (issued by the United Nations within the e-Government Development Index 2020). In response to COVID-19, Dubai Police used smart helmets furnished with AI-enabled sensors (e.g., thermal camera) to detect those infected from a safe/peace-of-mind distance. These smart helmets could perceive appearances and vehicle plate numbers to more readily guarantee real-time neighborhood control, like distinguishing individuals walking out during the disinfection hours without permit and vehicles having movement permits or belonging to individuals working within indispensable sectors, from vehicles of individuals in violation of the lockdown regulations (ITUNews, 2020). Without loss of generality, these endeavors could be regarded as exerting low-level capital leverage diversity (i.e., limited diversity) and high-level empowerment autonomy (i.e., centralized/decentralized empowerment autonomy).

Different from Uber's continuous monitoring of its US drivers for new criminal offenses (by searching a national sex offender database, federal and local court records) to guarantee traveler safety and genuine feelings of serenity, Uber launched another compulsory practice of Go Online Checklist and Mask Verification. In this practice, drivers must be checked if they took certain safety measures and wore a mask or face cover by requesting that they took a selfie. This technology identified the cover as an item in the photograph, and didn't measure biometric data or contrast mask selfies with driver photographs in their databases. Drivers not wearing a mask or face cover would not have the option to go online to guarantee traveler safety (Innovation Village, 2020). Without loss of generality, these endeavors could be regarded as exerting low-level capital leverage diversity (i.e., limited diversity) and middle-level empowerment autonomy (i.e., centralized empowerment autonomy).

China's tech giant Tencent has been endeavoring in the field of healthcare using cloud computing, artificial intelligence and blockchain. Its highly popular mobile messaging application WeChat has been globally renowned as a super app (allowing third-party apps developed/operated within an app) embodying millions of mini-app services about every moment of the user's daily life. The super app has a medical health module added to WeChat Wallet that gave free COVID-19 online health consultation services by leveraging Tencent's five online healthcare platforms. This is functioning like a friendly and specialized chatbot of automated messaging service which frictionlessly allows individuals to approach questions and obtain essential diagnosis worrylessly (CNBC, 2020). During the pandemic, Tencent also provisioned free services of VooV Meeting for customers and organizations to host or join meetings anytime, anywhere in more than 100 nations around the world (Tencent, 2020). Without loss of generality, these endeavors could be regarded as exerting middle-level capital

leverage diversity (i.e., median diversity) and high-level empowerment autonomy (i.e., centralized/decentralized empowerment autonomy).

Arcade City facilitates decentralized blockchain-based marketplaces owned and operated by its ridesharing participants. This ridesharing permits riders the opportunity to pick their drivers, negotiate special terms for payment or service, and fabricate direct relationships with riders for a steady and repeating self-organized customer base. This model extends to a degree of employment security and soundness that that no centralized organization could offer. These distributed frameworks grow the capability of crowd-based capitalism and change the crowd from assuming the source of capital and labor to really possessing and running specialty groups of marketplaces in a decentralized manner (Arcade City, 2016). Exemplar particular specialty groups included female Arcade City drivers who took exceptional consideration to get ladies home securely late at night. Some others specialized in service for the handicapped, or for the elderly, or for a particular geography, or for deliveries and other services for more readily worry-free lifestyle. Without loss of generality, these endeavors could be regarded as exerting high-level capital leverage diversity (i.e., high diversity) and high-level empowerment autonomy (i.e., decentralized empowerment autonomy) although Arcade City’s marketplaces are still awaiting their growth (Arcade City, 2020).

**Table 1.** Case exemplars of reframing stretch for the pandemic

<b>Business</b>	<b>Shared-Value Scope</b>	<b>Association</b>	<b>Capital Asset Leverage by Reframing Stretch</b>	<b>Empowerment Autonomy</b>
<b>Tesla</b>	societal	Similarity (relevance about similar properties on air flows between the ventilator and the automaker air flow system)	Tesla retooled its facility assets to engineer a prototype of functional ventilators, which utilized many existing parts that are normally found in a Model 3 (e.g., touch-screen display, lithium-ion battery, compressors, oxygen mixing chamber, etc.) to drive valves controlling the flow of gases into the ventilator.	m
<b>Ping An Insurance</b>	societal	context/contiguity (relevance about causal and proximity properties on the big data predictions)	PingAn utilized its technology-based ecosystems (e.g., HealthKconnect, Good Doctor,	h

		between the spatial health records and the spatial COVID-19 cases)	etc.) to achieve a 99% precision rate of forecasting about the trend of COVID-19 cases so as to help on local control measures.	
<b>UAE Dubai government</b>	societal	similarity/context (relevance about similar and causal properties on the intelligent ability of identifying spatial abnormality between the initiatives endeavors and the COVID-19 preventative measures)	Leveraging the decade-long achievements/resources from the initiatives of Strategy for Artificial Intelligence/Blockchain, Dubai Government's Police used smart helmets furnished with sensors to detect people infected with COVID-19 from a safe/peace-of-mind distance, recognized and utilized AI solutions to determine vehicles that had movement permits or belong to people in violation of the lockdown regulations.	h
<b>Uber</b>	societal	similarity/context (relevance about similar and causal properties on the real-time ability of qualifying eligible drivers to go online between the monitoring of new criminal offenses and the monitoring of wearing-mask safety measure)	Uber's Mask Verification Technology identified the cover as an item in the photograph, and did not measure biometric data or contrast mask selfies with driver photographs in their databases. Drivers who were not wearing a mask or face cover would not have the option to go online.	m
<b>Tencent</b>	societal	similarity/context/contiguity (relevance about similar, causal, contact properties on intelligent interactive diagnostic messaging between the doctor	Leveraging the AI, cloud computing and blockchain technologies, Tencent provided individuals with free online health consultation services via five online	h

		consultation and the pandemic-related consultation)	healthcare platforms through WeChat, which is a specialized chatbot allowing individuals to approach questions and obtain essential diagnosis frictionlessly.	
<b>Arcade City</b>	societal	similarity/context/contiguity (relevance about similar, causal, proximity properties on self-organized specialty added-value local transportation among different specialty customer groups including pandemic-related groups)	Arcade City facilitates decentralized blockchain-based marketplaces owned and operated by its ridesharing participants. This ridesharing permits riders the opportunity to pick their drivers, negotiate special terms for payment or service, and fabricate direct relationships with riders for a steady and repeating self-organized customer base. Exemplar particular specialty customer groups included female drivers who took exceptional consideration to get ladies home securely late at night.	h
Walmart	societal	similarity/context/contiguity (relevance about similar, causal, proximity properties on the entertaining effects between the local drive-in cinemas and the local theaters/parks)	Walmart partnered with Tribeca Drive-In to transform its 160 retail location parking lots into drive-in cinemas, in which shoppers could get picnic stuff at store curbside before the movies and safely enjoy movies prohibited by pandemic-constrained social distancing (Hollywood Reporter, 2020).	l

<b>Google/Apple</b>	societal	similarity/context/contiguity (relevance about similar, causal, proximity properties on location-based recommendation/alert services among different mobile platforms)	Contact-tracing apps intended to automatically make individuals aware of whether they were at high danger of having the virus infection, in view of whether another person they were as of late close to had been diagnosed so. Google collaborated with Apple designed the bluetooth-enabled contact-tracing API (with user privacy and security key to the design) to help governments and health agencies diminish the spread of the infection (BBC News, 2020).	m
<b>Amazon/Lyft</b>	societal	similarity/context/contiguity (relevance about similar, causal and proximity properties on last-mile delivery between Amazon's delivery teams and Lyft drivers' delivering packages and groceries)	During the pandemic lockdown, Amazon collaborated with Lyft on a recruitment initiative that enabled Lyft's ride-hailing drivers to help deliver groceries, Covid-19 tests and other medical supplies as part of a partnership programme with Amazon.	m
<b>STARLUX Airline</b>	Societal	similarity (relevance about similar properties on getting away from monotony life between fly-abroad and fly-out fly-in)	The "Pretend to Go Abroad" tour was a popular travel package to get away from the confined homes owing to COVID-19. STARLUX Airline allowed individuals to experience the sentiment of 3-hour voyaging abroad without the danger of being	l

			<p>infected, by flying south from eastern Taiwan to the direction of the Philippines with a lower flight altitude for passengers taking a bird's eye view of Taiwan before voyaging east again from the coast back to Taoyuan Airport (Taiwan News, 2020).</p>	
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## CONNECTING TO OUR BUSINESS REINVENTION METHODOLOGY

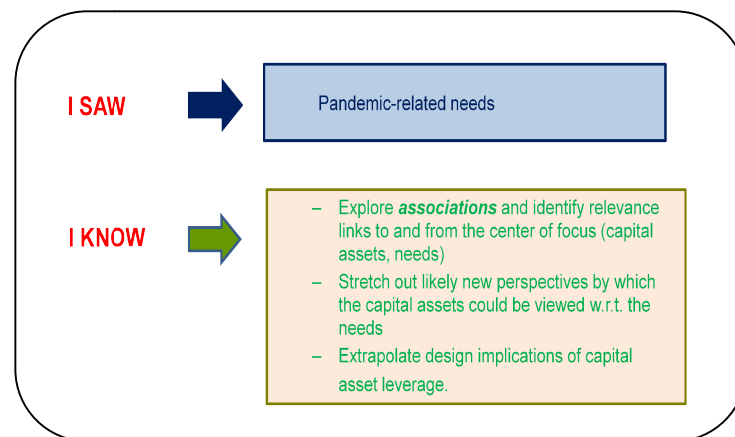
The business reinvention methodology, as conveyed in Part 2 of our book, could be briefed as an iterated design process that consists of value design (i.e., topics about design challenge, value space boundary, empathy map & data contradiction analysis, association reasoning, reframing & synthesis, POV, *etc.*), ecosystem design (i.e., topics about value exchanges & configuration, ecosystem actor sensemaking, strategic ecosystem flexibility, *etc.*), ecosystem operation design (i.e., topics about ecosystem operational strategy choices, ecosystem's digital solution architecture & digital operants, digital business, *etc.*), business reinvention viability & business model, and business reinvention strategy, and so forth. In order for cultivating an existing business' resilience capability regardless it being capital heavy or capital light, the methodology could be exercised in either way of the followings:

### 1. Business core/side value/function incorporated with Reframing Stretches (RS):

A business' core/side value/function could be extended using the five types of association reasoning (context, analogy, contiguity, contrast, and similarity as shown in Chapter 3's Table 3) to uncover different types of Reframing Stretch (RS), which help identify the potential capital asset leverages of designated shared values. If a side value/function chosen, chances are the extended side shared value/function and capital asset leverage could become the business' future core value/function.

For typical value design (Chapter 3), reframing associations aim at uncovering resolutions for identified data contradictions, or called reframing resolutions. As depicted in Chapter 3's Figure 24-25, the resolution discovery process iterates by combining what I SAW (i.e., those identified contradictions) and what I KNOW (i.e., better explanations behind the contradictions in terms of changing the perspectives via reframing out of new frames identified).

Simplifying the aforementioned process, reframing stretch (RS) is defined as the attempts to uncover possible capital leverages in terms of stretching out to new perspectives by which the capital assets could be viewed and the likely capital asset leverage could be generated. As depicted in Figure 6, this is conducted by iterating the combination of what I SAW (e.g., pandemic-related needs) and what I KNOW (e.g., likely capital asset leverages behind the needs in terms of stretching out new perspectives by which existent capital assets could be viewed in relation to the needs via the associations). Table 1 then provides some exemplar RS cases for the pandemic.



**Figure 6.** Reframing stretch (RS)

**2. Business core/side value/function incorporated with the societal/environmental value space boundary to attain a new shared-value-based design challenge, followed by an implementation of the whole business reinvent methodology to drive innovative reinvention**

As mentioned earlier, the resilient element of shared value embodies the designated value space of the strategic directions complying with the societal or the environmental (as depicted in Chapter 3's Figure 11). To attain meaningful innovation, a business core/side value concept could incorporate the societal/environmental value space boundary to attain a new shared-value-based design challenge that serves as the triggering point calling for the whole business reinvent process (as depicted in Chapter 3's Figure 10).

As follows are some exemplars of businesses being incorporated with the imagined shared value space boundary so as to identify new shared-value-based design challenges, which could uncover innovative reinvention with the implementation of the whole business reinvention methodology afterwards:

- Tesla + Societal Boundary: an exemplar design challenge could be “How could vehicle of automated transportation delivery become vehicle of societal wellbeing delivery?”



- Airbnb + Environmental Boundary: an exemplar design challenge could be “How could the accommodation sharing economy boost the environmental consciousness/behaviors among the public?”
- Dubai government + Societal Boundary: an exemplar design challenge could be “How could digital government boost the consciousness/actions of fair wealth distribution among the business owners?”

COVID-19's threat to businesses isn't only the prompt loss of revenue from slowed or disrupted operations. The greatest danger would originate from not observing the accelerated changes of mega trends and taking advantage of the opportunities of transforming themselves to generate new products and services that are either tending to the crisis needs or addressing the latent/implicit needs. Our business reinvention methodology is believed to provide businesses with a set of tools/methods/models to cultivate the abilities of resilience or reinvention.

## **BUSINESS RESILIENCE STRATEGY**

COVID-19 has demonstrated that negative megatrends (e.g., pandemic, climate change) can never again be treated as general menace, and businesses have to build up resilience to uphold sustainable profits by being set up to play against possible negative megatrends. To further supplement the conceptions as conveyed in our book's Chapter 8 (about the business reinvention strategy) for business resilience, additional examinations of the contextual situations in relation to business resilience are to be provisioned, followed by extra suggestions on the planning of business resilience strategy and the managerial leadership implications.

### **The Contextual Situations of Business Resilience**

#### **Economics Resilience**

Businesses need to understand the economics of the financial aspects are not generally viable with the economics of resilience aiming at implementing decisions, strategies, activities that can moderate both the risks and results of severe crises towards sustainable (macro/micro) welfare impact (Romeo et al., 2020). Macroeconomic resilience relies upon the capacity of the economy to adapt, recuperate, and recreate and therefore to limit aggregate losses (i.e., reducing macro welfare impact). Microeconomic resilience then depends on reducing the exposure or vulnerability of people and assets (i.e., reducing micro welfare impact of individual asset losses). Accordingly, economics resilience could be regarded as the capabilities of increasing macroeconomic resilience (reducing aggregate consumption losses for a given degree of individual asset losses), or increasing microeconomic resilience (reducing individual asset losses for a given degree of aggregate consumption losses).

### **Shared-Value Resilience**

Upon the COVID-19 pandemic, many governments advocated that businesses ought to think even harder about what they could accomplish for the society. For example, several European governments assumed a greater function in deciding how wealth was appropriated through financial stimulus packages, with which pushing businesses to meet broader environmental, societal, and governance norms towards shared-value megatrends, such as building social safety nets, sustaining innovation efforts and productive capacity, aligning with long-term policy objectives, *etc.* (OECD, 2020). These endeavors are believed to be able to increase macroeconomic resilience as well as microeconomic resilience because broader value spaces would contribute to greater collective/individual welfare and wellbeing as addressed in our book's Chapter 2&3, particularly in consideration of the wanted flexibility or resilience as discussed in the beginning of this chapter. These endeavors could then be regarded as shared-value resilience. Meanwhile, recognizing and capitalizing on the connections between the societal/environmental and the economic progress would likewise bestow businesses the power to unleash their next wave of global growth and to redefine capitalism.

### **Ecosystem Resilience**

To more readily address the macro/micro economic resilience, businesses need to invest on the capabilities of broadening and deepening partnerships or ecosystems besides cutting costs so as to create ecosystem-wide innovation and resilience (e.g., just-in-case supplier coalitions) upon unexpected spikes and drops of demand and supply. Meanwhile, these capabilities would likewise help businesses better unfold their quest for more extensive environmental/societal shared-value megatrends and new surge of global growth and capitalism. These capabilities could then be regarded as ecosystem resilience.

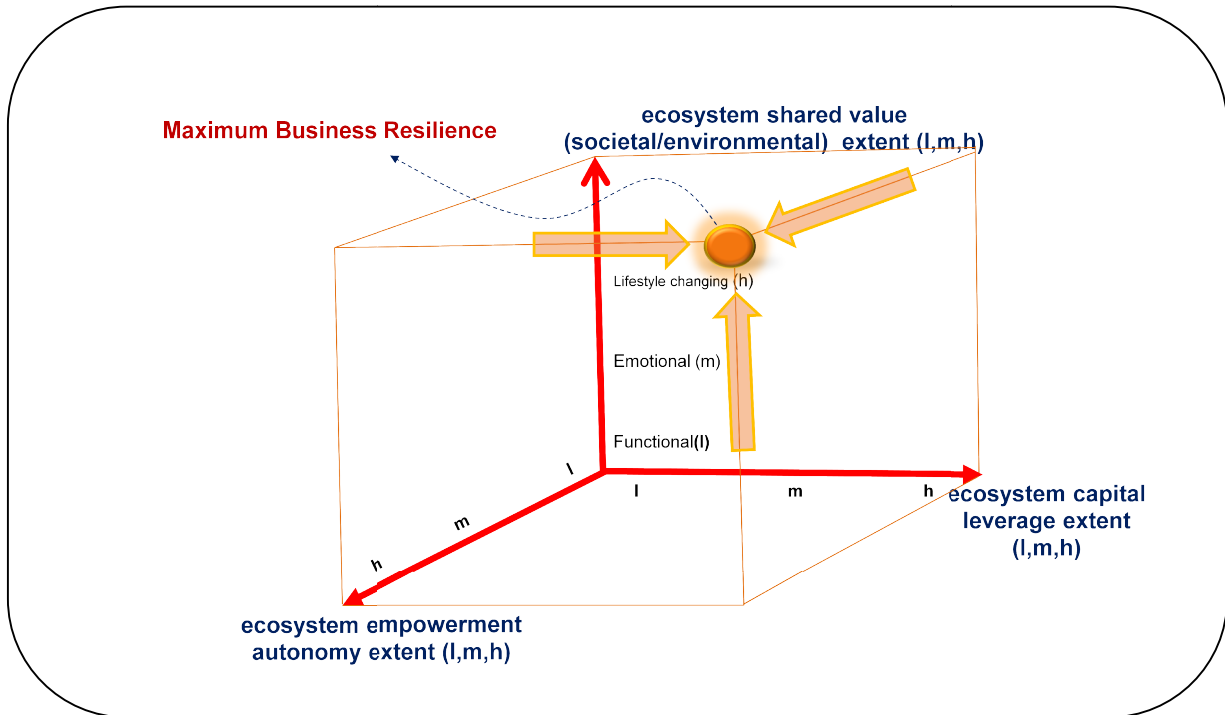
### **Digital Autonomy Resilience**

The pandemic has also sharpened the focus on digital business transformation, as many businesses are dashing to move operations to the cloud and embrace more intelligent substitution of digital solution infrastructure and digital operants. For macro/micro economic resilience, the very nature of competition is increasingly about the capabilities of identifying new agile ways to collaborate and connect into digital ecosystems upon unexpected spikes and drops of demand and supply. These capabilities could then be regarded as digital autonomy resilience.

## **BUSINESS RESILIENCE STRATEGIC PLANNING**

Successful applications of business resilience reinvention vary in different business/industry contexts, and the strategic planning of business resilience could likewise be developed by

stages as those discussed in Chapter 8. Any business attempting to reinvent itself could move from inward to outward indirectly or directly until its maximum business resilience point (i.e., the round orange point shown in Figure 7). A business resilience strategy refers to their strategic choices for paving the way to do indirect and direct movements towards maximum business resilience.



**Figure 7.** Conception of business resilience strategic planning

Besides what discussed in Chapter 8, the strategic choices for these indirect and direct movements also include the choices between the aforementioned two approaches of cultivating business resilience capability (i.e., business core/side value/function incorporated with reframing stretches, or business core/side value/function incorporated with the societal/environmental value space boundary to attain a new shared-value-based design challenge and then implement our whole business reinvention methodology).

### **Managerial Leadership with Resilience Mindset**

The economy in recent decades aggressively sought after the efficient use of assets and come to be vulnerable to disruption or crisis. Besides the proper mindset and behavior for different business reinvention roles as shown in Chapter 8's Table 1, there are additional mindset and behavior required for resilience. For example, a business' board should have an important responsibility for building the necessary resilience capabilities to guarantee that the business is sustainable in terms of the guidance of governance and culture, leadership development, and compensation programs, etc. (Burchman & Jones, 2020).

At the point when a crisis strikes, a business' survival depends on whether having a crisis management plan. As per Jonathan Hemus, a crisis management specialist, the definition of a crisis for a business is something that makes the business incapable to maintain its core business, and a crisis is a conclusive success test of management manifesting the genuine quality of the leadership (A.Digital, 2020). For example, in a week of 2018, KFC/UK (a fast-food chain that serves fried chicken) ran out of chicken given its core business depended on selling chicken, resulting in as many as 800 out of about 900 KFC locations were shut (CNN, 2018).

Meanwhile, a crisis is not quite the same as an issue, which refers to things that don't affect a business' capacity to function but are required to be managed as part of the everyday business in avoid of running into serious situations if unsolved (Mosaic, 2020). That is the reason why it is significant for a business to think of a set of criteria that could enable the business to decide when it is in a crisis with speed (Nichols et al., 2020). For example, when the criteria is connected with the business' values, it is more likely to be a crisis than an issue as exemplified by the aforementioned KFC/UK case.

In spite of the fact that it is difficult to foresee when and where a crisis will happen, yet businesses ought to prepare their leaders for a crisis about how to venture into their characterized jobs, react with transparency/clarity/confidence, and create quick and long haul reaction plans, which however need to be reviewed on regular basis (Beehive Strategic Communication, 2020). These endeavors could then be regarded as managerial leadership with resilience mindset.

## **CONCLUSION**

This supplementary chapter investigates the three business resilience elements (shared value, capital leverage, empowerment autonomy) required for businesses to survive through crisis like the COVID-19 pandemic. For a systematic approach to reinvent business for resilience in the post-pandemic era, our book's business reinvention methodology well tending to these elements precisely gives the way to serve the purpose with some additional supplements (e.g., reframing stretches for uncovering possible capital asset leverages) as exemplified and conveyed in this chapter. In addition, this chapter gives additional notes about business resilience strategy (e.g., resilience of economics, shared value, capital leverage, and empowerment autonomy, and managerial leadership). Obviously, there are as yet emergent research directions to further the investigations, such as, in-depth empirical studies of business resilience cases to uncover proper measurements of these ordinal resilience

elements, advanced explorations of reframing stretches, finer operational meanings of various resilience capabilities, *etc.*

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