Resilient by Design

Enabling Agility and Resilience in Ontario's Small and Medium Enterprises

By: Ayesha Zubair

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Abstract

At the time of writing this report, Canada has completed one year of lockdowns and restrictions due to COVID-19. The world is grappling with disruption at a scale that we haven't experienced in recent years. The devastation COVID has wreaked through the Small and Medium Enterprise (SME) community is just starting to show and it is expected to get worse. In 2020, Canada lost almost 58,000 businesses and by Canadian Federation of Independent Business' (CFIB's) estimates, Canada could lose between 71,000 to 222,000 businesses which equate to 7% to 21%, respectively. With up to almost 3 million jobs at stake, it is not hard to imagine the devastation that this could unleash. SMEs make up almost the entirety of Canada's economy, with 98.8% of businesses in Canada being organizations with 1-499 employees. Without question, where there is impact to Canadian SMEs, there is impact to Canada's well-being. Agility and resilience offer SMEs a way forward. This study looks to answer the main research question of: what are the elements of agility and resilience and how might they enable us to implement resilience in Ontario SMEs? In answering this question, this study explores the relationship between the two concepts and adds in an original contribution that enumerates the dimensions of resilience that can be used to evaluate resilience at the time of impact. In addition, original contributions of this study also include seven elements of agility and resilience and an accompanying Agility and Resilience Maturity Model that can enable SMEs to not only identify their current-state resilience but also to have a roadmap of transformation for resilience.

Dedication

This work is dedicated to:
All Small and Medium Enterprises, especially in Ontario, who are navigating an incredibly difficult situation with unparalleled grace, humility and empathy.

And especially,

To the participants of this research who, despite it all, opened their doors wide-open and welcomed me in.

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It takes a village... Of this, I am proof:

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To my family: the people who, for some reason, seem to lose all logic when it comes to me. You manage to find front row seats to everything that I do – I don't get it, but I am eternally grateful. I know of resilience because I know you.

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Introduction

At the time of writing this report, Canada has completed one year of lockdowns and restrictions due to COVID-19. The world is grappling with disruption at a scale that we haven't experienced in recent years. And, while this disruption is the largest of its kind in recent years, the world is no stranger to disruption; in fact, the history of the world, disruption is our norm. Some of our greatest discoveries and eras of prosperities have resulted from disruptions that forced us to adapt. Adaptation does not come easily, however, disruptions are usually a precursor to periods of transitions where volatility and uncertainty can exact steep costs in lives and livelihoods.

As a student of management, the scope and scale of the challenges that face businesses has always captured my interest: over the past century alone, our world has gone through transformations at a rapid pace and the pace of change seems to be accelerating at an exponential clip. As each new technology is invented and introduced, we increase in speed and complexity. It is now possible to do complicated transactions almost instantaneously; I can, for example, purchase pretty much anything I want, anywhere in the world, with the touch of a button. And, with each new advance, we come closer to a more connected, always-on, always-moving world. This realization then begs the question: if change is the only constant and we are increasingly more interconnected, what happens when something in this very interconnected system breaks down suddenly? The impacts reverberate around the world. We experienced this when the Fukushima Nuclear Reactor experienced a breakdown in 2011 (CBC, 2021) and, until very recently, we were still recovering from the 2008 financial meltdown (Washington Post, 2018). Can SMEs do anything to address the impacts of events beyond their control or are they subjected to or are they at the mercy of their environments? Larger companies often have the resources and scale to manage when things change but what happens to SMEs who may not have as many resources at hand?

Our strategies should be guiding us in uncertain times but our strategic processes generally help us prepare for a singular future we predict will happen. It often doesn't work out that way. So how do we move forward from that? It is the hope of this paper to help SMEs build the right infrastructure and processes that allow for adaptation so that organizations can come as close to an emergent strategy without entirely giving up the stability of deliberate strategies. To develop this readiness-to-respond, we need to be able to explore the space between agility and resilience. This author submits that when we bring together two, seemingly conflicting concepts, agility and resilience, we can begin to incorporate unpredictability and complexity into an organization's design.

If you speak to the average Canadian today, many recognize we live in a much more volatile and unpredictable world today, than in the years past (Global News, 2020). Similarly, Small and Medium Enterprises (SMEs) are no stranger to volatility or unpredictability but when COVID hit, many were caught by surprise by the scale and duration of the disruption. Though unfortunate, COVID has also given us unprecedented access into the realities of mass disruption, and an opportunity to learn about how to adapt. The extent of the disruption has led to many breakdowns including, but certainly not limited to, supply chains. Years of consumer preference shifts and moves to digital sales were compressed into mere months and SMEs were left scrambling to catch up to a dwindling consumer base that was moving to digital while simultaneously, customers were further pushed away by lockdowns and safety concerns.

So why does this paper specifically examine this topic for SMEs? Simply because SMEs make up almost the entirety of Canada's economy, with

98.8% of businesses in Canada being organizations with 1-499 employees (Industry Canada, 2020). Without question, where there is impact to Canadian SMEs, there is impact to Canada's well-being. The devastation COVID has wreaked through the SME community is just starting to show and it is expected to get worse. In 2020, Canada lost almost 58,000 businesses and by Canadian Federation of Independent Business' (CFIB's) estimates, Canada could lose between 71,000 to 222,000 businesses which equate to 7% to 21%, respectively. The corresponding job loss would be 962,000 jobs, at 7% business closures, and 2,951,000 jobs, at 21% business closures (Global News, 2021). With up to almost 3 million jobs at stake, it is not hard to imagine the devastation that this could unleash.

It begs an important question: are we resigned to accept the business closures and the impending economic hardships? Certainly not. In the year that has passed, we saw many businesses transform themselves almost overnight. That alone, is worth celebrating. However, the transformation came at a cost and for some businesses that was just too great. Others not only survived this overnight transformation; they thrived. It is that spirit of innovation and adaptation that has inspired this project: the ability to not just survive challenges but to thrive despite them.

What does it take to succeed in uncertain and tumultuous times for businesses? Is it necessarily the resources that they may have on-hand? This study hopes to prove otherwise. If it were only about resources, we might not see successful SMEs or even SMEs that grow to become large businesses. What is it about these businesses that allows them to stand strong against the unpredictable and move fast to adapt to their changing circumstances? Their adaptability informs the core objective of this paper.

Specifically, we will be examining how strategic agility and resilience can be built-in to organizational design and organizational practices to help SME thrive through disruptions (such as COVID).

To enable that examination, this study began with a simple but important research question: what are the key elements of agility and resilience in SMEs?

To control for scope-creep, this question was refined to focus on one geography: The Province of Ontario. It focuses on Ontario for a few key reasons:

- As one of Canada's economic engines, Ontario has a disproportionately large concentration of Small and Medium Enterprises (SMEs) (Industry Canada, 2020).

- Limiting to one province offers some similarities of context in terms of the impact of regulations, economic conditions and resource availability.

- The author is a resident of the province and therefore has the most knowledge of the Province of Ontario, as opposed to other jurisdictions. The deeper understanding is expected to play a role in exploring key aspects of this study, especially during participant interviews.

However, as this work progressed, it became clear that simply identifying the elements would not be enough to embed agility and resilience into the organization. Therefore, this study settled on the main research question of:

What are the elements of agility and resilience and how might they enable us to implement and measure agility and resilience in Ontario SMEs?

01

What is Agility?

What is Agility?

Context

The concept of "agility" is not unique to any one field but it is most prominent in business and software development literature. Despite its popularity, a unifying and comprehensive definition can be difficult to locate. Agility consists of facets such as nimbleness, suppleness, alertness, responsiveness, swiftness and activeness (Qumer & Henderson-Sellers 2006).

The concept of organizational agility largely stemmed from government sponsored research in the US and the UK. In the US, it became mainstream in business literature in 1991 when a group of researchers from Lehigh University introduced the term "agile manufacturing" in a report aimed at helping the US regain its eminence in manufacturing. This report also described agile principles taking hold in the US, Europe and Japan and positioned agility as the way forward (Baker, 1996). Since then, manufacturing companies across industries have leveraged the concept to gain competitive advantages (Conboy and Fitzgerald, 2004). As Conboy and Fitzgerald note however, "there are many diverse and often contradicting definitions of agile manufacturing, the concepts lack a theoretical grounding, and consideration is not given to the differences between industries and organisations."

The Lehigh Study is still widely credited for the popularization of 'agile' outside ofsoftware development, in 1993, Pine at the Harvard School of Business, conducted a separate study that suggested that "turbulence" would best be addressed by a strategy that allows for reconfiguration of operations to offer "mass customization" which further legitimized the idea of organizations using 'agility' to adapt to the outside environments in a business management context (Baker, 1994) instead of only in product or software development. In the UK, the Department of Trade and Industry sponsored research with PA Consulting in 1993 which also suggested that while "focus" was a good strategy, the demands of market and competition would require organizations to 'change rapidly and easily' (Baker, 1994).

In software development, an Agile Manifesto was released in 2001 by the AgileAlliance (composed of industry professionals and academics) at a time when there were multiple bureaucratic and sequential methodologies common in software development. These "heavyweight" methodologies had developed in an attempt to impose discipline as a response to the software engineering crisis of the 1960s (Wirth, 2008) but as the world shifted to a more connected and turbulent economy, the bureaucratic methodologies became cumbersome and

created barriers to success. Once the agile methodologies became the norm in IT departments and as the world continues to move largely towards digital products, organizations don't just need agility in product and software developments, they need these concepts to permeate within supporting functions like Finance, HR and Marketing (Deloitte Insights, 2019).

Despite the challenges in defining the concept, agility has still nevertheless gained traction – partly because the word easily brings to mind personal and immediate definitions and, partly because the nature of agility is grounded in speed which proves itself very attractive to private organizations looking to gain or maintain competitiveness.

Defining strategic agility

While strategic agility has garnered quite a bit of attention, especially recently, consistent treatment and definition of the concept remain elusive. Weber and Tarba (2014) highlight common themes in the definition of strategic agility:

1. Strategic agility involves a set of actions that an organization takes to operate in a rapidly changing and unpredictable environment

2. It requires changes that are unique and differentiated from other regular or routine changes. Changes stemming from strategic agility are continuous and systematic variations in products, services and structures of an organization. In addition, these are changes that are high in intensity and variety making strategically agile organizations *highly flexible.*

3. It requires speed to sense and adequately respond to environmental changes

This paper simply defines strategic agility as **a capability that allows an organization to be highly flexible and capable of maneuvering the internal and external environment with speed.** High flexibility is considered to be a valuable core competency in general, and in interorganizational partnerships. Building in high flexibility in organizational design can reduce cost and difficulty in adaptive coordination of the firm thereby increasing both the agility and the resilience of the firm (Volberda, 1996). Volberda further discusses flexibility as a derivative of managerial capabilities and the responsiveness of the organization which is fundamentally an organizational design challenge. He argues that organizational flexibility is inherently paradoxical and requires "constructive friction between change and preservation". Weick (1982) memorably illustrates this by concluding that "total flexibility makes it impossible for the organization to retain a sense of identity and continuity; in other words, *flexibility without stability results in chaos*".

02

What is Organizational Resilience

What is Organizational Resilience

Context

In 1973, Holling first introduced the idea of resilience in the context of ecological resilience which was based on the properties of natural systems to remain in a stable state despite changes to the environment. Over time, resilience has appeared in multiple disciplines in various ways. Notably:

- In Engineering, resilience focuses on constancy and predictability (Gomes, 2015) which is often referred to as "reliability".
- In Human Resource Management, researchers Mallak (1999), Patterson et al. (2007), Vogus and Sutcliffe (2007) state that organizational resilience depends on people who can respond to change quickly and appropriately with minimal stress.
- In Supply Chain Management, Christopher and Peck (2004a) equate the resilience of the supply chain to the resilience of the enterprise supported by the logic that supply chains and enterprises have many interdependencies and supply chains can often introduce new risks to the enterprise.

Defining organizational resilience

Similar to strategic agility, there are many definitions in literature, this paper defines resilience simply as **the ability of a system to achieve a new, acceptable, stable state after a disruption.** The implication of this is that resilience is overwhelmingly about the art and science of homeostasis (balance). Resilience helps systems that are disrupted manage through the transitory periods to an acceptable state.

In literature Ma et al. (2018) conducted a thorough analysis of the concept of organizational resilience and identified common characteristics of resilience. Resilience is often associated with: bouncing back (Hale and Heijer, 2006), robustness (Tierney, 2003), absorption (Berkes, 2007), awareness (Annarelli and Nonino, 2016) and surviving and thriving in difficulties (Seville, 2009). To demonstrate these characteristics, a firm's response is often conceptualized as avoidance (the ability to avoid a disruption altogether), resistance (the ability to resist any change a disruption may bring), reduction of impact (the ability to maintain system function 'as close to the way it was' prior to disruption) or as an opportunity for transformation. And, resilience is all of those things, however,

resilience as 'reduction of impact' or resilience as 'resistance' literature has seen a recent uptick which is entirely understandable given that change and unpredictability are both uncomfortable and, for many, resilience seems to offer a way to minimize that discomfort. Those that are of the opinion that resilience is about minimizing discomfort must proceed with caution however, because resilience can certainly be used to maintain the status quo but it would be doing so at the cost of prolonging the duration of the disruption, with all of its negative impacts stretched out even further. The longer the system resists the change, the more fragile it becomes. We know this to be true in nature: a tree that is very rigid, for example, snaps much faster when strong winds hit; however, a tree with some flexibility has a much higher threshold before it breaks. In addition, resilience as 'resistance', would be defeating the real purpose of resilience which is to help systems find a new, acceptable and stable state. A system that experiences a disruption can never really "go back to the way it was". With each disruption, big or small, the system learns, and adapts.

Risk management, change management and resilience

When discussing resilience, inevitably, one wonders about whether resilience is already addressed in the existing fields of risk management and change management. At first blush, it may seem like it is: what is risk management if not identifying forces that might disrupt business? Similarly, the field of change management exists to help move us to our "new normal". With these two fields available, do we really need resilience?

As in the case of agility, both risk management and change management are necessary, but not sufficient.

The Skills Taxonomy in the National Occupational Classification by the Government of Canada defines change management as "the capacity to support an initiative of change that has been mandated, involving helping others understand what the change means to them, and providing ongoing guidance and support that will maintain commitment to the change." Made explicit in this definition is the concept that change management comes into play _when the end goal is already defined._ Meaning, we already know what we want to change, we can define why we want to change it, we understand _who_ it is that we are looking to change and it is in the purview of the field of change management to define how we can get there. In this way, change management works backwards from the goal. Disruption, however, does not allow us to define _what_ we want to change. Said differently, in a disruption, we don't have an end goal. This is part of the reason we haven't been able to "change manage" out of COVID-19.

We don't know what our "new normal" is or will be. Resilience recognizes that; instead, resilience creates the right conditions to allow for change, as the system adapts.

On the other hand, risk management is about identifying the threats the organization has and establishing how to mitigate them. Fiksel (2018) identifies 3 critical limitations to the classic risk management paradigm:

1. **Not all risks can be anticipated:** risk management is about hazard identification but what it misses is that risks can also come from multiple changes that, additively or multiplicatively, trigger a tipping point for a system. Said differently, things that wouldn't normally be considered "risks" become risks when they cumulatively experience breakdowns or shocks. In a complex system, like our organizations, "emergent risks are often triggered by improbable events whose causes are not understood, and their potential consequences are difficult to predict a priori."

2. **Some risks can be hard to quantify:** and even harder to assess. Even when risks are identified, there may not be enough reliable statistical information to assess the most significant threats and managers may underestimate the probabilities of risks they've never experienced. This, in turn, may lead to incorrect resource allocation.

3. **Adaptation may be necessary for survival:** Risk mitigation and recovery practices are designed at 'going back to normal' but as we are all experiencing, it may not be possible, or advisable, to 'go back' to the way things were.

In contrast with risk management, resilience is about adaptation and charting courses forward with 'unknown unknowns'. It enables the system to reimagine new futures by empowering system actors to take charge and in doing so, the system settles into an acceptable state. In creating capacity for emergence, resilience pre-empts disruption.

Resilience: an outcome or a process?

Resilience is often thought of as an outcome, a destination companies could arrive at, once, and be "done" with resilience. It is often portrayed as such, especially in consulting firms' research papers. This, however, ignores the reality of resilience: it is very much a continuous, iterative process.

Part of why resilience is a continuous iterative process lies in the nature of resilience itself: resilience can be considered emergent in some ways because we see it when something happens and the response to this event is dependent on the people and the operating environmental conditions. We don't, however,

know what this event will be; all we know is that we want to be prepared for it. What we're "preparing" then, is our resilience potential. Building potential, of any kind, is generally a continuous, iterative process.

Conditions of resilience

Kantur and Iseri-Say (2015) conducted qualitative and quantitative analyses to find that three conditions accounted for resilience that were both valid and reliable.

1. **Building Robustness:** "the organization's capacity to withstand against and recover from unfavourable conditions"

2. **Developing Integrity:** "the cohesion among employees in the organization when faced with unfavourable circumstances."

3. **Achieving Agility:** "the capacity for the organization to take actions rapidly" and the ability of the organization to "develop alternatives in order to benefit from negative circumstances."

Missing from this is the ability of the organization to be aware of its environment. It is this precise ability that enables agility – when the organization understands its environment, it can "develop alternatives" that are robust.

Capabilities of resilience

There are 3 capabilities of resilience, as defined by Lengnick et al. These are:

1. **Cognitive Resilience:** the capability of an organization to perceive changes and interpret unfamiliar situations,

2. **Behavioural Resilience:** the capability of 'learned resourcefulness, counterintuitive agility, useful habits and behavioural preparedness where the organization is able to have the tools and procedures in place to create new routines and use its resources under pressure, and finally,

3. **Contextual Resilience:** the capability of an organization to create, maintain and utilize interpersonal connections (Lengnick-Hall et al., 2011).

03

Agility and Resilience Together

Agility and Resilience Together

There is much written on both topics and, depending on which concept you were introduced to initially, and there seems to be a tendency to include the other as an element of the initial concept. This is true for strategic agility as it is for organizational resilience. Agility and resilience are both about responding to change and both presume that change and unexpected surprises can be sources of improvement and opportunity. However, they are distinct in which type of change they are designed to respond to: agility is "needed to address change that is continuous and relentless while resilience capacity is needed to respond to change that is severely disruptive and surprising" (Lengnick-Hall & Beck, 2009). Where agility pairs response to change with speed, resilience pairs change with adaptation and transformation. Together, they form a powerful whole --a way for organizations to be flexible and adapt with speed to major shocks while retaining the learning that allows for transformation with the environment. Organizations with both qualities have the ingredients in place to flourish in spite of market turbulence, and perhaps even because of it.

Where agility pushes to "move fast," resilience counsels consideration and adaptation which allows for some space for reflection and thoughtful decision-making. Popularly, the rallying cry of business leaders has become "move fast and break things" in an effort to instill agility in organizations. Resilience helps temper that with consideration to adaptation when we do, in fact, end up "breaking things."

After doing much reading on both topics, this paper aligns itself with the view that agility is a condition of resilience, not the other way around. If we were to create an equation for resilience, it would be "agility + [other conditions] = resilience". This means that agility is a necessary, but not a sufficient, condition

for resilience.

Organizations as networks

A network consists of two key elements: the individual nodes and the connections between those nodes with strength being a key property of those connections. If we imagine the nodes as employees in an organization, the connections between them represent the relationships they have. It stands to reason that some relationships are stronger than others – just as strength is a key property of the connections between nodes, so too is it a key property of relationships between people.

In a network then, where do agility and resilience belong? Based on the definition of strategic agility, in a network, agility rests in the nodes – the people. It is about creativity, exploitation and responding to new and emerging situations. It is also about being able to create new relationships. Resilience, then, is in the relationships. It is in the interaction between the ability of the nodes and the strength of the relationships that we find the resilience potential of the group or organization. Qualities and characteristics that apply to all relationships apply here as well: some relationships are great; they propel us forward and help us become better. Other relationships are indifferent and some relationships are not healthy for us and lead us to behave in ways that are ultimately bad for us.

When we think about relationships, it is much more intuitive to think about relationships between people but relationships exist between a multitude of things. They can exist between strategies, structures (for example, functional departments in an organization), processes, and technologies. Designing sustainable, viable and scalable systems that are resilient requires us to examine the nodes and the relationships between the nodes at various levels to understand where the vulnerabilities and impacts may lie.

This ability to see the relationships between different elements is what we refer to as "systems thinking". Donna Meadows, a pioneer of systems thinking, describes it as "a set of things - people, cells, molecules, or whatever - interconnected in such a way that they produce their own pattern of behaviour". What this implies is that a system causes its own behaviour, for the most part. External events simply serve to unleash that behaviour. Implicitly, we know this to be true - how else can the same event cause different outcomes for different systems? (Meadows, 2008). Systems thinking is critical to resilience and building resilience potential. It is the reason we can conclude that resilience is about relationships. These relationships exist between all sets of "things" and the type of relationship that exists produces the behaviours that we can experience (or lack thereof).

04

Research Methodology

Research Methodology

To answer our research question, this study leveraged three key methods: literature reviews, a survey and semi-structured expert interviews.

Literature Reviews:
To drive clarity around the key concepts of this study and to leverage best practices identified in academia. A literature review was necessary precisely because the concepts of agility and resilience are not well-defined in practice or, as it turns out, in academia. However, a detailed synthesis of literature identified distinct themes and treatments of these concepts that can lead to practical application.

Survey:
To better understand the temporal dimensions of a disruption and to get a better sense of the elements that were helpful or detrimental when addressing a disruption before, during or after impact. At a practical level, the survey was also chosen as a research method to encourage participation where SME Owners, Managers or Employees may not have the time or energy to participate in hour-long interviews, especially given that this study occurred in the middle of the pandemic.

The voluntary, confidential survey requested participants to answer based on their temporal experience of a disruption "before, during and after" a disruption event. For this study, 36 people who identified as SME Owners, Managers, and Employees with at least 2 years of SME experience in Ontario responded to the survey. A total of 2 responses, out of 36, were considered partially complete. Partial results were considered in the study. Of the total respondents, 67% of respondents belonged to a company with 1-4 employees while 14% had 5-9 employees; 10% had 50-99 employees. 5% of the respondents in this study had 200-499 employees.

The survey had a fairly diverse industry representation, as illustrated in the chart below.

Respondant Breakdown by Industry

- Educational services 9%
- Business, building and other support services 19%
- Professional, scientific and technical services 24%
- Wholesale and retail trade 5%
- Construction 5%
- Other 38%
  - Healthcare and social assistance 5%
  - Information, culture and recreation 5%
  - Other services (except public administration) 28%
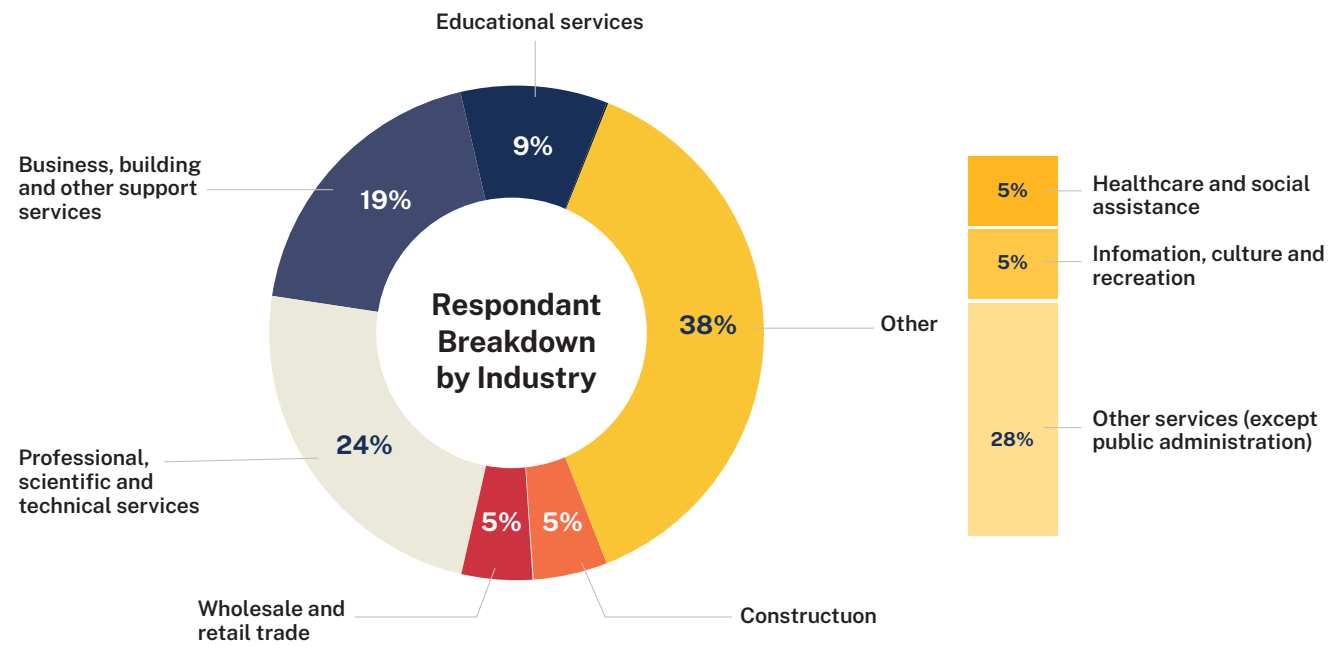
Figure 1: A breakdown of industries the survey participants belong to

Out of the 36 responses, 26 were from Owner, Leaders or Executives. Of these, about 43% of people indicated they had been with their company for 2-4 years and about 24% of respondents were with their organizations for 10-19 years.

The survey probed on what types of disruption SMEs might be facing, generally. It did include the option to select "Acts of God" which included COVID-19. While the majority of respondents (57%) did select "Acts of God", the second-most selected category was business model at 32% followed by Product disruption at 26% of respondents.

Semi-structured expert Interviews:
Individual 60-minute conversations were scheduled to develop a detailed understanding of the realities of SMEs as they navigate disruption. In addition to the 36 respondents to the survey, a total of 14 interviews were conducted with the breakdown as follows:

- 4 interviews with "front-line" employees, referring to employees that directly interact with customers
- 4 interviews were conducted with "mid-management" employees that have people management responsibilities
- 4 interviews were conducted with CEOs/business owners of SMEs
- An additional interview was conducted with an Ecosystem Actor who is a government partner to understand some of the ecosystem opportunities and challenges.

The interview participants were recruited using social media, personal connections and "snowball effect" (where participants reached out to, and recommended, people in their network for discussions).

05

Research Findings
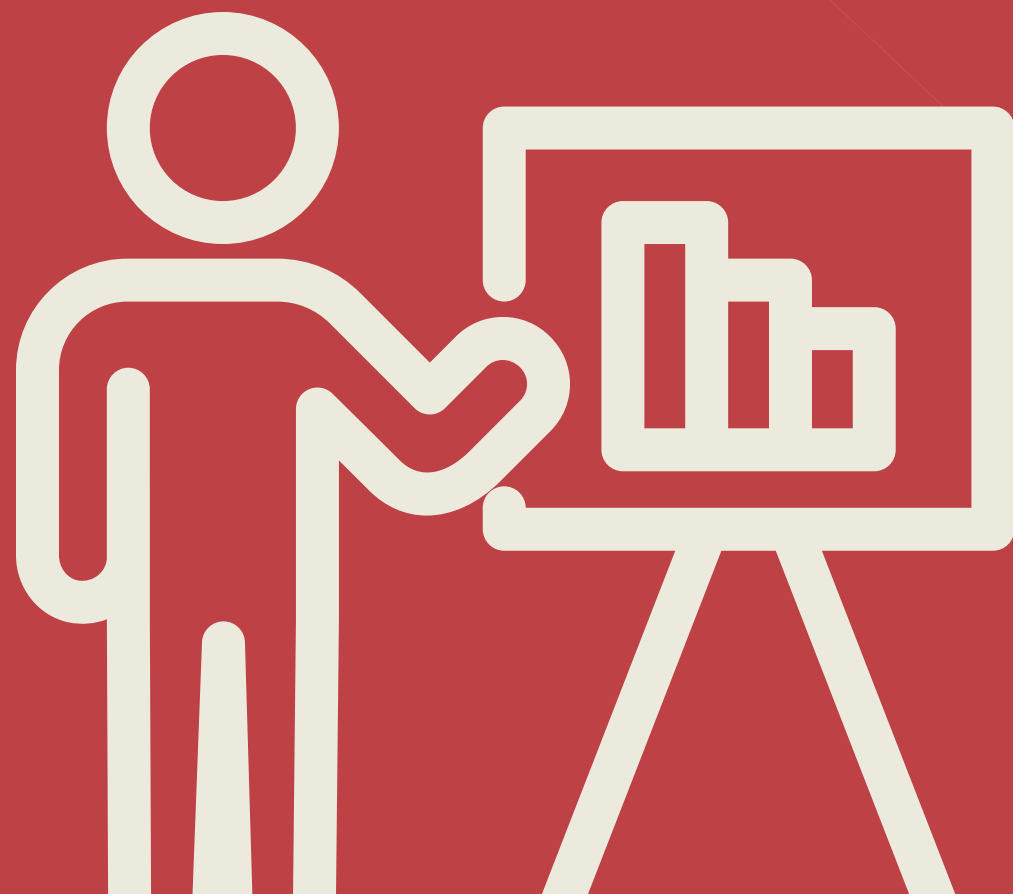
Clarifying Resilience

As the reader will recall, while there are many definitions in literature, this paper defines resilience simply as **the ability for a system to achieve an acceptable, stable state after a disruption**. What that stable state looks like and how a system achieves this stable state is the purpose of this study. In exploring agility and resilience with the participants of this study, we can offer the following insights:

From organizations as networks to organizations as organisms

First and foremost, organizations consist of people and people are organisms which means that many of the behaviours and characteristics that we ascribe to people are also behaviours that organizations display.

The beauty of seeing organizations as organisms is this: organisms have beginnings and endings. When an organism has lived its life, it ends but it leaves behind another: an offspring that charges forward in the world with the DNA from its parents and its own mission; informed by the values and purpose of its predecessor but driven by its own values and purpose. In this way, resilience is also regeneration. Every system has limits: our resources are finite and when we push beyond those limits far enough, we degrade the system. Entities that grow unchecked, without respect of system limits, ultimately lead to catastrophes. We are all familiar with these phenomena: in human bodies, we call it cancer; in ecosystems, we might call them invasive species.

So, what might be a more sustainable way forward? In seeing organizations as organisms, we can be more accepting and aware that, perhaps, our organization (as it exists today) does not always need to continue in the same way. We have an opportunity to reimagine our future and spin-off another, a new, organization and nurture it's growth until it's ready to replace the current business model. This is not new thinking. We can find its example in some of the longest-surviving companies today: these unique companies have learned to adapt their offerings when they reached their system limits but they stay true to their purpose. There are two strong examples of this:

» **CASE-IN-POINT: NINTENDO**
In 1889, 132 years ago, an entrepreneur started Nintendo as a card games company (Nintendo History, 2021). Today, however, it is popularly known as a video game company and it continues to command an impressive market share as an electronic games company: it has even secured four places in the top ten best-selling game consoles, according to Guinness World of Records (BBC, 2019). Over its history,

Nintendo's purpose has remained the same with gaming at its core, even though the Nintendo of today is hardly the Nintendo that began 132 years ago (Business Insider, 2019). Along the way, the company had come to realize that it has probably gone as far as it could with just cards so, in the 1950s and 1960s, Nintendo began experimenting with many different businesses, across different industries including transportation, hospitality and food (its specialty was ramen, curiously). In 1975, however, Nintendo worked with Mitsubishi Electric to develop a videogame system which lead to the company creating video arcade games in 1979. The success of these arcade games eventually led to the development of the video game consoles we are more familiar with today. Those consoles, in turn, became Nintendo's main business that we see today (Nintendo History, 2021).

» **CASE-IN-POINT: SAP**
Created in 1972, five entrepreneurs began with a vision to create standard enterprise software that integrates all business processes and allowed for data processing in real time (SAP History, 2021). Today, SAP continues to transform and grow but it was in 2011 that SAP made a bold move to acquire its competitor, a company that changed its trajectory and became one of its biggest offerings. SAP acquired SuccessFactors (a Human Capital Management software company) for 3.4 billion dollars in an effort to embrace cloud technology and doubling-down on its own failing offering in the HCM space. The deal was regenerative for SAP for a few reasons: talent management was a key growing area and companies in the HCM space were slow to innovate, SAP included, giving rise to a host of competitors. In addition, SAP itself was losing key talent and failing to build successful cloud solutions. By acquiring SuccessFactors, SAP not only got the technology but also got SuccessFactors CEO as a senior leader of SAP (VentureBeat, 2011). In acquiring SuccessFactors, SAP allowed it to continue as a separate until it's success essentially dwarfed other offerings and SuccessFactors became a major offering.

Via the survey and the interviews, participants of the study shared their experience of the disruption and the organization's subsequent response. Particularly in the cases of C-Suite/Owner participants, it was noted that the organizations' actions closely resembled the actions and behaviours of the C-Suite leader or Owner. This effect was particularly pronounced in organizations where participants reported having a "strong personality" for a CEO who created the company's cultural norms based on his/her personality and preferences.

Resilience in Action

How do we know whether a business is resilient or not? We can tell if a business is resilient based on how it responds to a disruption. The most successful companies, however, don't wait for a disruption to come around in order to understand their organization's resilience. They prepare ahead of time. In this way, we can think of resilience as proactive and immediate. Proactive approaches to the resilient are about shoring up your organization's resilience potential: ensuring the right strategies, structures, support systems and helping the organization prepare to give your organization the best chance of survival and perhaps even creating the space for it to thrive no matter what comes its way. "Immediate" resilience is about the emerging and present - it is about the 'moment of impact' of a disruption and the transition phase that an organization enters immediately following the impact. At that moment, the best thing we can do is to assess the impact and act. Both proactive and immediate scenarios require evaluation criteria that we can use to "dimensional-ize" the impact and subsequently, understand the extent of the response required.

What was common across survey and interview participants was a sense of "not knowing what to do" immediately after the impact of the disruption (in this case: COVID-19). In many cases, it was accompanied by feelings of not understanding what was happening accompanied by having trouble assessing and communicating the depth of the impact. In addition to this, the author noted distinct jumps between referring to individual resilience responses to disruption and efforts made in trying to tie that back to team or organizational impacts and responses. All these factors together hinted at the idea that resilience, in particular, is a topic that we don't always know how to approach or describe in a coherent or similar way. This gave rise to identifying the dimensions of resilience below.

Using the dimensions of resilience to assess disruption impact

In combining literature with the themes extracted from participant surveys and interviews, we can identify the dimensions listed and discussed below.

Each of the dimensions below helps us understand a different perspective of resilience. The key dimensions of resilience are: Level, Criticality, Lens, Impact on Organization, Type of Response Required and Time Horizon of Response Required.

Level

Resilience can exist at various levels and resilience at each level works in concert with resilience at the other levels. There are 4 key levels of resilience:

1. **Individual or personal resilience** refers to how each of us address and adapt to our own challenges and setbacks. Individual resilience contributes to Group or Team resilience. In a network, each node represents an individual which implies that individuals, or nodes, must come together to create a group or a team.

2. **Group or Team resilience** refers to how a group of people navigate challenges that come their way and find a "new normal". As groups or teams are created when individuals come together, the strength of the team depends on the strength of the relationships between the individuals in the team. A resilient team is one that is connected; its members trust one another and they feel safe to be vulnerable and admit to mistakes (psychologically-safe). In turn, when groups or teams come together, they create a system. In this way, group/team resilience contributes to system resilience.

3. **System resilience** refers to how a system leverages its resources to create capacity for adaptation. As groups and teams come together to create the system, systems come together to create an ecosystem. In this way, a system becomes a node for the ecosystem.

4. **Ecosystem resilience** refers to the relationships that an ecosystem might have either within itself (between systems) or even with other ecosystems. For example: two industries working closely together or two nations working with one another.

It is important to note that when we start speaking about the system and ecosystem level, what we define as a system, and its boundaries, determines what would be considered an ecosystem. For example, if we define the province as the system we're examining, then Canada becomes the ecosystem.
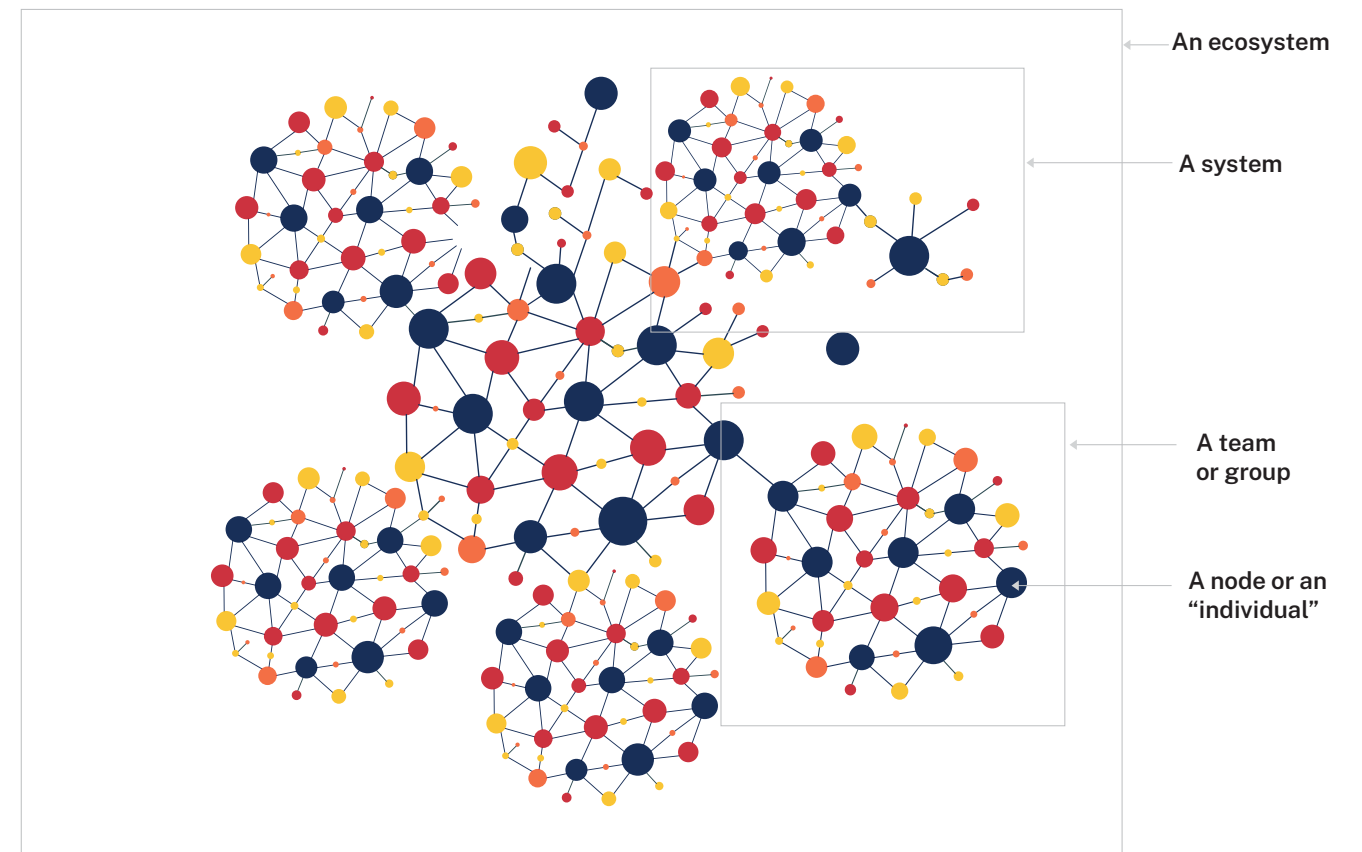
Figure 2: An author-adapted visual representation of embedded networks and different levels of resilience.

If we revisit our idea around organizations as networks, we can see that an individual node, in a network (or group). This network, in turn, is a node in a bigger system network. Following that, the system is a node in the ecosystem. It's important to remember however that relationships are two-way streets: during a disruption, the opposite is also true; the individual node is impacted based on what is happening at the system and ecosystem level. In fact, these impacts can also be compounded, in multi-directional ways, at every level.

This idea holds true in organisms as well. Take the human body for example: A cell is an individual node; that cell is part of other cells that comprise an organ. An organ works with other organs to form a system (for example: the cardiovascular system or the central nervous system). The systems, in turn, work together to form the human body, a type of organism.

Thinking of the organization as an organism is an important component in understanding the full implications of what it means to be truly resilient: resilience recognizes and respects boundaries.

Criticality

At a fundamental level, the response to a disruption depends on how severe the disruption is. Below is a simple "2x2" to help think through what type of disruption you might be facing and the level of impact it may have on the organization. Of course, it is hardly ever this 'neat and clean' in real life but this framework presents the extreme ends, or boundaries, of the concept of criticality that is important to understand resilience. If a disruption is particularly severe, you may even find that there are multiple types of criticalities at play in different parts of the organization. We heard this from multiple study participants when they spoke about the impact of COVID-19 on their business. One CEO/Business Owner, in particular, spoke about fighting 'multiple disruptions' at the same time: COVID-19, which can be considered as potentially catastrophic event, and all the multiple impacts it has had on supply chains (potentially disastrous) that has then led to multiple localized, major and minor perturbations that continue to impact his business.

The types of criticalities are:

- **Localized, minor perturbations or "everyday resilience" scenarios:** For example, a late invoice payment to a supplier. Response to these should be limited to people or teams experiencing them but, these should be captured to enable pattern recognition in the future.
- **Localized, major perturbations or "wake-up call" scenarios:** For example, flooding. Details of these events, and the way the organization responded, should be examined. Recommendations on how to improve future response of these events should be implemented at a local level and shared at a system-wide level.

- **System-wide, minor perturbations or "(potential) disaster" scenarios:** For example: the "new" Suez Canal crisis - the Ever Given Ship, operated by Evergreen Marine (National Post, 2021) or the organization discovering its own cybersecurity vulnerabilities. These events highlight a serious problem in the system that may threaten survival, if left unchecked. These should be thoroughly investigated, including the organization's response and response times. Recommendations from this should be shared broadly and implemented immediately.

- **System-wide, major perturbations or "catastrophe" scenarios:** For example: a large tsunami or climate change. These events offer an opportunity to re-examine your organization and re-emerge with a more sustainable business model. There are two types of catastrophe scenarios: the first is a sudden catastrophe like a tsunami or an explosion which happens very quickly. The second type of catastrophe is a very gradual build-up, over time. It is so slow-moving that we keep adapting to it until it hits with full-force. Climate change is an excellent example of the second type of catastrophe; the kind the builds over time. These should be thoroughly investigated, including the organization's response and response times. Recommendations from this should be shared broadly and implemented immediately.

In defining the criticalities, this paper aims to increase the identification and reporting of these events. After all, as Carmeli and Shaubroek (2008) note in their work:

	Minor perturbations	Major perturbations
Localized	**"Everyday resilience"** These events have the potential to highlight vulnerabilities in processes or systems but may be easily rectified. For example: a late invoice payment to a supplier.	**"Wake-up Calls"** These are scenarios that have impact on business continuity but they can help identify more serious vulnerabilities in the system. For example: flooding.
	IMPACT LEVEL: Individual or Group/Team	**IMPACT LEVEL:** Group/Team or System
System-wide	**"(Potential) disasters"** These events highlight the major flaws of a system. For example: the "new" Suez Canal crisis - the Ever Given Ship, operated by Evergreen Marine (National Post, 2021) or the organization discovering its own cybersecurity vulnerabilities.	**"Catastrophes"** These events threaten the existence of the system and potentially even have negative impacts on the ecosystem. These are large events that not only threaten the organization but they also reduce the organization's resilience potential by impacting the resilience potential of the ecosystem. Catastrophes can be sudden or so gradual that they are unnoticeable. For example: a major tsunami or climate change.
	IMPACT LEVEL: System level with some implications at the Ecosystems	**IMPACT LEVEL:** System and/or Ecosystem level

Figure 3: A 2x2 of criticality levels for resilience.

"According to some researchers, crises emerge as a result of a combination of relatively minor failures and dysfunctions across various organisational subsystems. Turner argued that when these signalling events are unnoticed, poorly communicated or misunderstood, they tend to accumulate to a level at which disasters are triggered."

Lens

Resilience is found in relationships. These relationships can be between people but they are also present between technologies, systems and processes. For this reason, analyzing how the different aspects of the organization work can be a powerful step in understanding and identifying key vulnerabilities and understanding your resilience potential. It can feel like a daunting task to map some of these relationships but in truth, we do have a simple process improvement tool at our disposal that we are used to: People, Process, and Technology (PPT). In fact, the PPT was designed for this purpose: historically, it came about as a way to help IT professionals and engineers think more holistically about how the different elements of an organization might interact. The intent of leveraging the process improvement frameworks is to provide business owners and employees with a lens with which they can begin to think about the relationships between the various attributes of the business.

More contemporary versions of the PPT model (for example: Prodan et al., 2015) have argued that the PPT model is simplistic and misses out on critical dimensions like information, customer focus, innovation and management functions. It is true that the PPT model is simplistic but adding the lens of Strategy and Structure would complete some of the major components of an enterprise. This study recommends using the following lenses, in the presented order to help illuminate whether these elements support one another:

• Strategy
• Structure
• Process
• Technology
• People

Information, and knowledge, often exists in different silos and in different systems and we cannot often understand its flow or even the true relationships that exist between these elements until we explicitly map these out. Much of our knowledge is explicit and codified but people can also be reservoirs of implicit knowledge (or things "they just know"). Implicit knowledge is what is often what creates challenges when people leave. Colloquially, in workplaces, this is the "getting hit by a bus" factor, as shared by the Secondary Advisor of this study. This is something many of us can relate to: a colleague leaves suddenly and the team has to step in to support their portfolio but team members may not know how to support because, they might not have ever had to in such detail. Participants of the research mentioned the breakdowns they experienced when their colleagues left. Their colleagues "knew how to do the job", leaving the remaining employees scrambling to pick up the pieces, which in turn caused challenges in their relationships at work.

Impact on Organization

It can often be helpful to spend the time upfront to better understand what is and isn't critical to the organization, explicitly. Having this clarity across the organization before it becomes necessary creates a similar context that empowers employees to act appropriately when the chain of command may be impacted. An explicit understanding of the organization and its priorities are both critical especially in start-ups and small businesses because much of this understanding resides within the mind of the Founder or Owner. This is a critical risk for the business, especially in SMEs with a strong Founder/Owner/CEO, because were the Founder or Owner to be indisposed, the business would likely face great difficulty, in navigating the environment, if it manages to survive at all.

Arrows represent the potential shifts in boundaries between survival minimum, strategic minimum and discretionary spend

Survival Minimum   **Strategic Minimum**   **Discretionary**
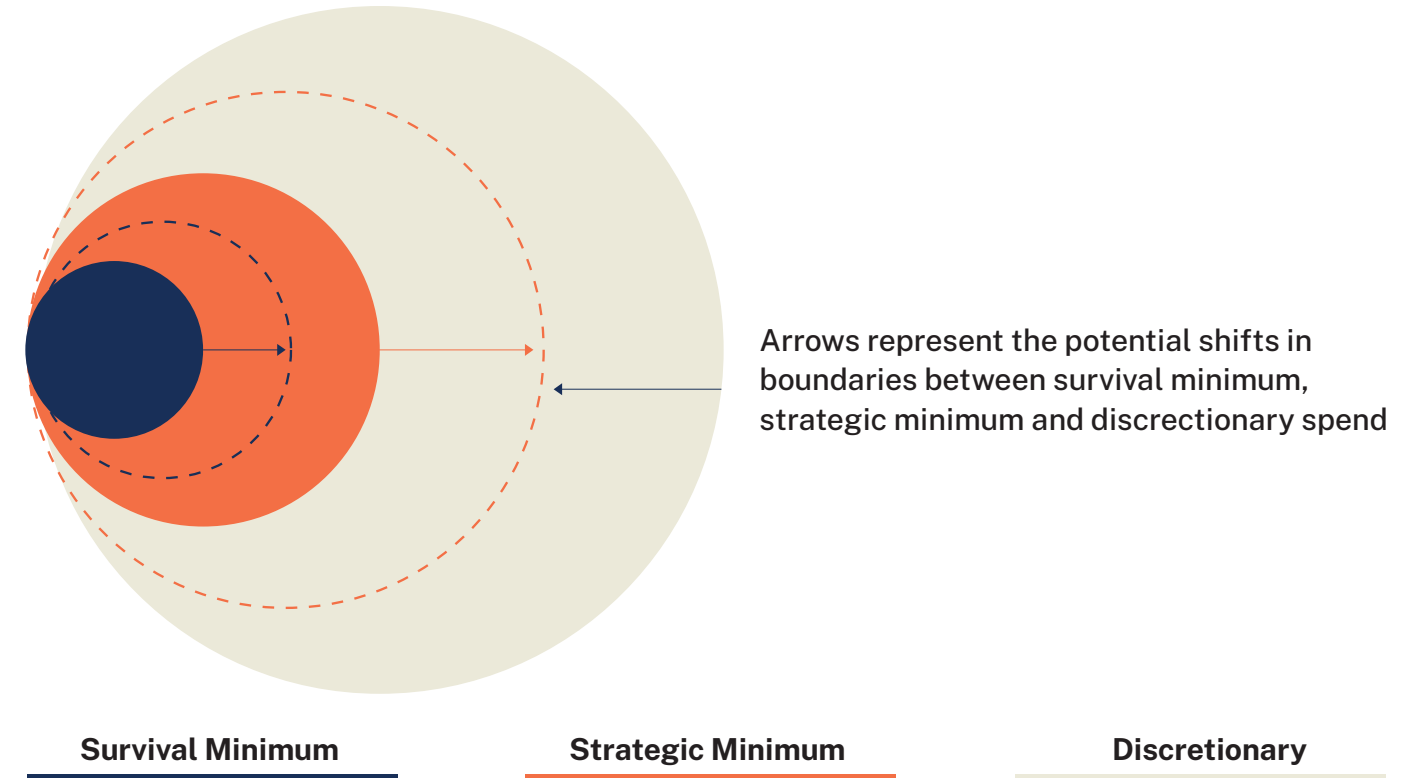
Figure 4: An adapted visual illustration of the Survival Minimum vs Discretionary activities and their adjustable boundaries.

To better understand organizational priorities, a simple framework that categorizes organizational activities in 3 categories, introduced by Oliver Wyman in The Post-COVID *Opportunity for Banks*, can be helpful.

1. **Survival minimum:** What is absolutely core to the survival of the company? A massive disruption may redefine what 'survival minimum' really is for your organization but companies need to spend the time to really understand what their 'survival minimum' really is. Likely, your 'survival minimum' is directly connected to your raison d'etre (reason for existing).

2. **Strategic minimum:** What is necessary to implement your organization's strategic objectives? This is usually the next level up from what is absolutely required for the company's survival and may include near-term development and growth activities (Abrahmson et al., 2020). This is also related to what your organization perceives its future role in the ecosystem to be: what are the activities that will allow you to define your future role in the ecosystems? These are the activities that allow you to establish your new "acceptable, stable state", in resilience terms.

3. **Discretionary:** What are other activities that your organization might be engaging that may not be necessary? Important to note is that depending on the disruption, some activities that might have been considered discretionary might become part of the strategic minimum (Abrahmson et al., 2020).

Type of response required

Most of us are intimately familiar with the response that humans are likely to have when faced with a threat. Humans are likely to:

- Fight or "defend"
- Flight or "avoid"
- Freeze or "stay the course"

Organizations, being a collective of humans (organisms), tend to exhibit the same responses.

Missing from the list above is a response that is critical but entirely counterintuitive: Speed up or "attack". Speeding up or "attacking" in response to a threat is not a natural response for many of us and that is often precisely the reason why organizations don't respond in this way either. There is, however, one other key reason that we don't speed up when faced with a threat: we don't know how. Knowing how to respond with an attack in response to a threat requires clarity of thought, incredible discipline to restrict our own natural instincts, impeccable preparation and

improvisation. It's a tall order when all red flags are up and everything is screaming for attention. In the current environment of lean operations, it is precisely this kind of preparation that we tend to deprioritize, especially when the system is in an acceptable, stable state.

A more complete list of responses available to us therefore, includes the option to speed up:

- Speed up or "attack"
- Fight or "defend"
- Flight or "avoid"
- Freeze or "stay the course"

Knowing what types of responses might be required is important but it is equally important to know when to respond. Burnard et al. (2018) propose an Organizational Response Framework that helps identify when, and where, response decisions may be required, illustrated below.
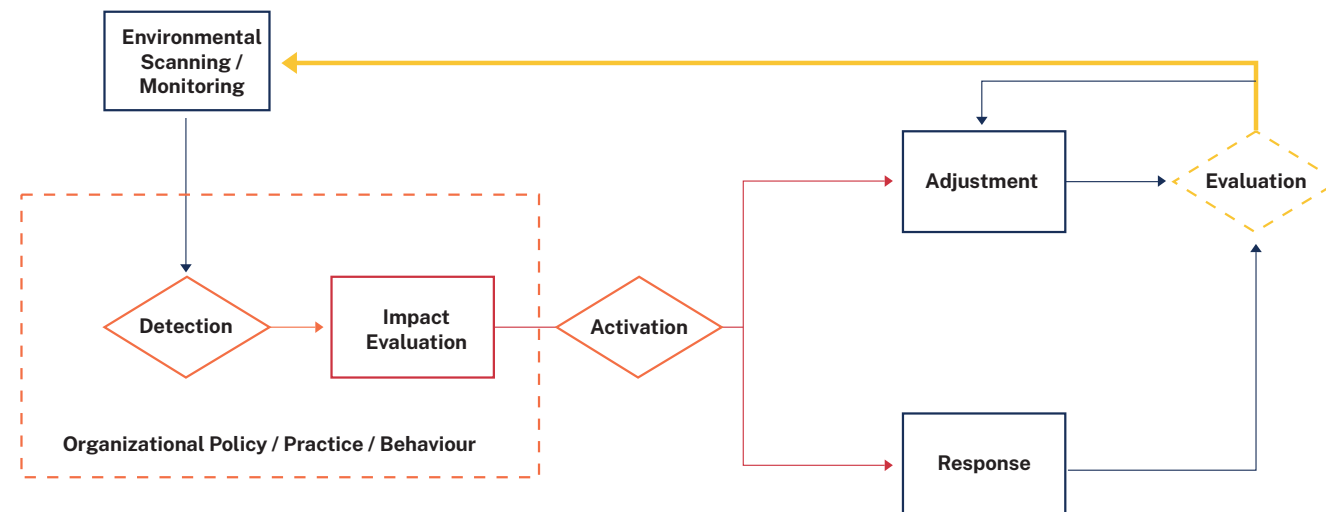
Figure 5: An adapted visual illustration of the Organizational Response Framework.

Time horizon of the response required

A resilient response can look very different depending on the time horizon of the response required. If the time horizon is immediate then the response might lean more heavily on "stopping the bleeding" by fighting, fleeing or freezing. If the time horizon is longer term, then it might be more appropriate to speed up or "attack" Research shows that "short-termism" is ultimately harmful to the organization in the long-term (McKinsey Global Institute, 2017).

Elements of Agility and Resilience

A strong source of agility and resilience comes from the organization itself. A strong foundation in operational excellence is the basis on which resilience is built. In analyzing study participants' experience with our current disruption, COVID-19, the 7 elements of agility and resilience below were identified. Each of these elements include the principle of operational excellence and focuses on developing the conditions of resilience. Namely: robustness, integrity and agility.

The elements of agility and resilience are:

1. Value and Purpose,
2. Trust,
3. Leadership,
4. Preparedness,
5. Support systems
6. Exploration, exploitation and improvisation
7. Rest

Values and purpose

"It is in times of great disruption and uncertainty that our ability to stay grounded in our sense of purpose and remain true to our identity is of the utmost importance."
– Satya Nadella, Microsoft (2020)

Purpose unites - it offers a north star to all employees, and customers, that is especially needed when disruption and/or crisis are at hand. Essentially, it is the articulation of the organization's impact on their customers' or communities' lives. During disruptive events, it is hard to have clarity, and importantly, clarity of information as things might be changing rapidly. This is where purpose provides stabilization. It gives people an anchor with which they can make sound decisions without having all the information. Interestingly, there are two metrics that offer an indication of a strong purpose: hiring and retention (EY, 2018). We heard this loudly and clearly in our interviews: where employees felt like the purpose of the organization was diminished or implicitly being changed without clear communication, employees left. There were two interviews in particular where their CEO's personality implicitly, and sometimes explicitly, acted in lieu of an organizational purpose. In both cases, employees report feeling lost and abandoned once the disruption hit and the CEO "disappeared". The interestingly implies that people may unite around a strong leader even in the absence of purpose, which we will discuss in detail later in the paper but what it clearly illustrates is this: lack of a strong organizational purpose, coupled with strong, individualistic personalities as CEOs led to the fragility of the organizations to the point that employees left the organization in droves, further reducing the organization's resilience.

In addition to providing strategic clarity, a strong purpose is linked to:

- **Innovation:** a strong purpose can help employees feel empowered to act and become problem solvers.
- **Transformation:** it anchors people which creates space for people to engage in change meaningfully rather than evaluating their options for "fight, flight or freeze".
- **Relationship building:** purpose provides a common ground for people which can help build strong partnerships and relationships (EY, 2018).

Innovation, and particularly transformation and relationships, are the key to resilience. At its core, resilience is about helping the organization find a new, acceptable, stable state. To do that, an organization must leverage its relationships (between Strategies, Structures, People, Processes and Technologies) to innovate and transform.

Purpose, it turns out, quite literally pays: "Companies that operate with a clear and driving sense of purpose outperformed the S&P 500 by a factor of 10 between 1996 and 2011 ...and between 1998 to 2013, it rose to an increase by a factor of 14 (EY, 2018)".

By itself, having a purpose is good but it is not complete. Purpose requires values to bring it to life. Values are "ideals and principles which guide the thoughts and actions of an organization and define its character (Horwath, 2005) which also "describe the desired culture" (Kenny, 2014). Values help guide people on how to achieve the organizational purpose. They are the compass employees can use to navigate their environment. The ability to navigate uncertainty using values and purpose as a guide is especially critical during times of disruption.

Interestingly, the role of 'values and purpose' was specifically indicated by various participants as enablers of decision-making as they looked to determine their new, acceptable state. In one particular case, one business led with their value of "helping the customer" in such a way that they hired their business client's staff until their client could afford to pay the salary. Many other businesses shared that they deferred payments for their clients or lowered their prices altogether.

Trust

Merriam-Webster defines trust as "assured reliance on the character, ability, strength, or truth of someone or something" and it can further be simplified into three components of trust: Ability, Benevolence and Integrity (Mayer et al., 2005). The distinction between 'trust' and 'trustworthiness' is illustrated as follows: "Trustworthiness must be demonstrated or offered to the intended subject. In return, trust is offered from the subject. Trust cannot be given to a subject; it can only be given by a subject (Schreiber, 2021)." Said differently, Mayer et al. (1995) define it as "a willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that party."

At an individual level, it is up to us to display trustworthiness and give our trust to someone we perceive to be trustworthy. The same applies at the group/team, system and ecosystem level. Similarly, trust is not limited to people-to-people interactions, it can be applied to any interaction that involves people interacting with another product, service or system. Mayer et al. (1995) illustrate this simply:

Trust is expressed at three levels within the organization: individual, teams and organizational (Costa and Anderson, 2011). For the purposes of

resilience however, we're not just examining trust within the organization: we will also be examining trust between the organization and ecosystem actors.

Creating a culture of trust within the organization has tangible benefits. Employees in high-trust organizations report 106% more energy at work, 50% higher productivity, 76% more engagement, and 29% more satisfaction with their lives. In addition, high-trust workplaces had 40% less burnout. The benefits didn't stop there: those in high-trust organizations enjoyed their jobs more, aligned much better with their organization's purpose and felt closer to their colleagues. What's more is that employees at high-trust organizations earned an additional $6,450 (or 17%) (Zak, 2017).

Participants of this research highlighted the role of trust in multiple ways:

- **Trust between management, colleagues and employees:** where the trust was high between management and employees, employees who were participants of this study reported lessened impact of the crisis. They openly acknowledged that they were working longer and much harder but that they enjoyed working with their team and had a manager who "had their back" so they didn't need to worry. They instead brought forward competitive intelligence by highlighting the practices that were working well for competitors. Where the culture was not healthy, participants told us of high attrition;
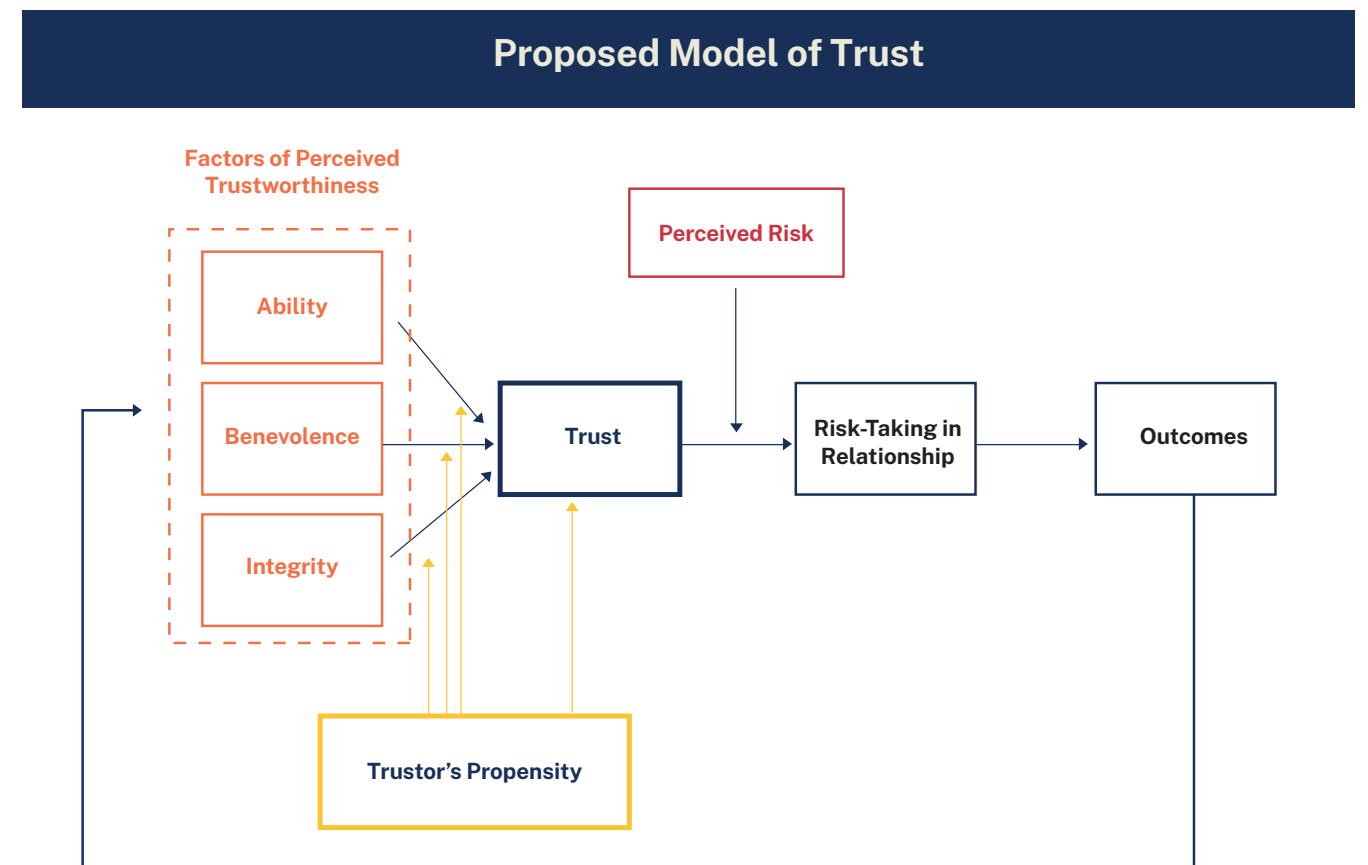

Figure 6: Proposed Model of Trust.

infighting, low morale and low engagement. Ultimately, employees didn't want to report into leaders they perceived to be untrustworthy and, in fact, left the organization just to avoid reporting to people they perceived to be untrustworthy. Staggeringly, this wasn't an isolated case. This was a theme across all study participants.

- **Trust between employees and the organization:** employees have to believe their organization is trustworthy. The strongest organizations demonstrated their trustworthiness and they were rewarded for it. where the organizational culture was healthy, employees persisted and supported the organization even as their hours were being reduced or cut. They instead brought forward competitive intelligence by highlighting the practices that were working well for competitors. Where the culture was not healthy, participants told us of high attrition; very strong organizational silos, infighting, low morale and low engagement.

- **Trust between customers and the organization:** where there was high trust between the customers and the organization, participants reported that their customers adapted to their new (and mostly, digital) ways of delivery. In fact, even in cases where the digital experience would be sub-optimal to their original offerings, customers continued to purchase and support the organizations.

- **Trust between competitors:** in a unique case, one participant reported receiving customers from his/her competitors.

Leadership

Leadership is a key element of agility and resilience however, we need to distinguish between 2 types of leadership: hierarchical and non-hierarchical. In an organizational context,

when we think of leadership, we are most often discussing hierarchical leadership, or leadership that is as a result of a job or a role. For example: when we refer to those higher in the organizational hierarchy, we might refer to them as "Senior Leadership". By virtue of calling a "senior leader", we confer leadership qualities on someone that may or may not be there but they are the appointed "leader", regardless. Management literature and practice have many ways of identifying and developing hierarchical leadership but for agility and resilience to flourish, organizations require non-hierarchical leadership. Hierarchical leadership still has roles to play in enabling leadership but it may not entirely be the role "traditional leaders" used to playing, as discussed later in this section.

Non-Hierarchical or "Shared" Leadership

IIn a crisis, people often want to help (Bregman, 2019). Some want to help by leading because they feel that they know exactly what to do, while others want to help by contributing. Both are equally important contributions but many workplaces are still very much structured in "command and control" leadership styles, which can stifle innovation and creativity (Psychology Today, 2014).

Shared leadership is defined as "a process that results from the dynamic interactive influence among a group of members who are pursuing similar group or organizational goals" by Morgeson (2005), Pearce (2004) and Pearce & Conger (2003) and when leadership is shared, as Friedrich, Vessey, Schuelke, Ruark, & Mumford (2009) describe, "an individual's role may repeatedly shift from leader to follower or follower to leader, as new events are encountered which require the unique expertise of team members" (Shondrick, S.J. et al., 2010). This type of leadership is important to consider for a resilient organization because it implies that, in complex

systems, "adaptive responses can develop from bottom–up emergent processes" as described by Uhl-Bien, Marion, & McKelvey (2007) and "where leaders are part of diverse networks of interacting individuals", as described by Balkundi & Kilduff (2005) and, Hooijberg, Hunt, & Dodge (1997) (Shondrick, S.J. et al., 2010).

The role of Hierarchical or "Management" Leadership

The hierarchical version of leadership is perhaps the type of leadership with which people are familiar with. It is the type of leadership that portrays an individual operating in a stable environment whose authority is determined by their role in an organization and it confers on them an authority over those who might be "lower" in the hierarchy than them (Shondrick et al., 2010). A move away from this may be perceived as a move towards a more chaotic state and there might be those who assume that organizing in a hierarchy is inevitable. After all, when a system is part of an ecosystem, for example, doesn't that already create a hierarchy? These assumptions can act as barriers to innovation and creative solutions.

The basic assumption which creates bureaucratic hierarchical structures is that each member is restricted to a single specialized task. As a result, a single structure of hierarchical linking relationships is established within which the functioning of each level is controlled by the next higher level. "If the 'one-man, one-task' principle is abandoned, then the requirements for a hierarchical organization disappears, and what results are organizations which instead of having a single rigid structure of relationships have the capacity for multi-structured functioning (Herbst, P.B., 1976)." It's interesting to note that the nature of our work and workplaces is changing so that no one is are truly doing "one task" which implies that the bureaucratic, hierarchical structure may already be out-of-date. Crucially, as Herbst states

in the quote above, bureaucracy and hierarchy are barriers to relationships which, in turn, means that they are barriers to resilience as well.

In a crisis or disruption, "management" leadership, in the way that it exists during normal operations, is not helpful. In fact, it can actively become a barrier that delays a system's movement to a new, acceptable, stable state. In a crisis, organization need leaders to emerge, not be appointed. The role of "management leaders" then becomes one of facilitation.

Of course, as advisors and one of the principal actors of the organization, it stands to reason that managers of the organization are aware of their agency and responsibility of enacting and facilitating organizational change. In this way, leaders are also the facilitators of agility and resilience. Management Leaders that thrive in continuous change leverage the strategies listed below. These "ways of working" for managers are an example of the kind of behaviour an agile and resilient organization's manager would engage in. These strategies are:

- Low cost "future probes": Strong managers have multiple futures for their team or product and they devise low cost ways to test out the multiple potentials. Examples include: experimental products, futurists, strategic partnerships, and frequent meetings.

- Link-in past, present and future: Managers that thrive in continuous change make it a point to link past and current project to future ones to keep their teams focussed and aligned to what might be coming next.

- Semi-structured "command": Managers that help set clear responsibilities and priorities balanced with freedom and communications help set-up a command that is informed but with autonomy to respond to a changing environment (Brown & Eisenhardt, 2017).

Participants of this study highlighted the role of leadership from the perspective of traditional or "management" leadership. Particularly in cases where hierarchical leadership was acting in the place of Values and Purpose, the impact of COVID on the organization was harder. Employees reported feeling "left behind" by the senior management team. Employees also reported higher levels of internal breakdowns in communications and relationships that became marred by non-productive conflict.

Preparedness

The true test of resilience is disruption but that does not mean that organizations have to wait for something to happen to understand their resilience potential or vulnerabilities. There are quite a lot of steps organizations can take to be prepared for any disruptions or systemic shocks.

A. Strategic preparedness

For an organization to be prepared at the strategic level, it must first have a strong understanding of its own business model and continuously engage in having a strong situational awareness of the market. In an environment of uncertainty and volatility, it is not sufficient to only plan for a singular future that we think will likely come to pass because none of us can truly predict what will happen next. Agility and resilience require us to regularly monitor our environment and leverage strategic foresight to create multiple scenarios that we can 'stress test' our strategies against. As pointed out by Abdelkader, strategic foresight in organizations helps us mitigate some of the uncertainty when facing exponential change. She highlights a study by Rohrbeck and Schwartz that utilized the data of 77 multinational companies to determine that formal strategic foresight adds value in the following ways: "1) an enhanced capacity to perceive change, (2) an enhanced capacity to interpret and respond to change, (3)

influence on other actors, and (4) an enhanced capacity for organizational learning" which, in turn, allow for agility that can position organizations for innovation (Abdelkader, 2016).

Most participants we spoke to reported a lower awareness of changing market conditions outside of the COVID-19 developments (and in a couple of cases, even a lower understanding of COVID-19 outside of the immediate impact it was having on them or their business). For a majority of our participants, the unplanned pivot that COVID-19 and stay-at-home orders have prompted took up most of the capacity that they had available. This is, of course, understandable but when attention is so thoroughly occupied by something that feels critical, we can miss out on important signals that might give us a "heads up" before the impact is felt. However, this is also where we saw resilience in action: some CEOs/Owners reported that their network stepped in to support; family members, mentors and advisors started reaching out and sharing the market conditions and new developments in the industry. Said differently, unprompted, a couple of the participant CEOs/Owners had a news-scanning, sensing and awareness network outside of the organization. In the absence of the CEOs/Owners and employees being able to conduct continuous environmental scans, having an informal network that is willing to help you build awareness is great. Unsurprisingly, however, this is not an approach that is sustainable or overly-reliable because people outside the organization don't have the full context or understand exactly what might be an important signal for the organization. Worryingly, a large majority of manager and employee participants reported spending little, or no time, keeping up with what was happening in their industries or their environment at all. In fact, many employees considered it their manager's job; most managers also saw it as either theirs or their leader's job.

For agility and resilience potential to exist, the thinking that environment scanning is a "management" job has to change. A key aspect of resilience is redundancy or "slack": what happens when that manager leaves or is incapacitated in some way? The employees', and the organization's, relationship to the knowledge, breaks. The knowledge and the connection to that knowledge is gone, and with it, a source of resilience potential is, as well. Furthermore, the 'home of best fit' for environmental scanning is at every level of the organization, and especially with the employees in the 'front-line', who are far more intimately aware of environmental changes.

B. Structural preparedness

In a crisis or a disruption, an organization may very well have to change the way it normally works to be able to respond to what is happening. Structural preparedness refers to the organization's readiness to respond to change by way of modifying its hierarchy, policies, procedures and, especially, decision-making. This is not something an organization can do without creating the capacity for it. There is incredible inertia at play - the very relationships that keep an organization working the way it does become the barriers and that inertia is multiplicative, perhaps even exponential, because it happens at the strategic, structural, people, processual and technological levels. There are two components that are more important to ensure structural preparedness: decentralized decision-making and practice.

High Reliability Organizations (HROs) are organizations that cannot afford catastrophic failures; these organizations include nuclear plants or hospitals. Theorists of HROs have observed that they vacillate between strong centralization during normal operations and decentralized decision-making during times of crisis. With this in

mind, we can expect that more decentralized organizational structures will demonstrate greater resilience potential (Kantur and Iseri-Say, 2015). The flexible structure of HROs is worth emulating because it allows them to have the oversight they need to have during normal operations and they let their front-line take the lead in times of disruption. This is quite literally true in the military, as Ghosh and Lee (1995), point out: "while synchronization is laid down by a higher command and must be obeyed, the lower level units are granted military initiative as to how to achieve the requirements...The authority to execute or alter every minor decision did not need to come from the central decision maker...A centralized commander is highly vulnerable to enemy attack and, if destroyed, may lead to catastrophic breakdown of failure and ultimately, paralysis (Ghosh and Lee, 1995)." They further advocated that asynchronous, decentralized decision-making should be incorporated and distributed among all entities for execution. They propose to do this by making all relevant decision-making information available to all units and allowing them to execute asynchronously. Evidence from the military has demonstrated that even under the realistic conditions of having a "special mission", poor communication and fear of being exposed while trying to communicate, a decentralized command and control network where "they only communicate essential information with each other to rapidly exploit situations...achieved great operational success (Ghosh and Lee, 1995)".

Interestingly, the proposal to allow for asynchronous decision-making came as a result of utilizing computer simulations and scenarios which are strongly linked to agility and resilience. This is, essentially, the heart of structural preparedness: practice. As Daniel Kahneman explains in his ground-breaking work, human

decision-making has two systems: System 1, which makes decisions in an instant and System 2, which is the slower, more deliberate form of decision-making. We need both: we need to be fast when something is urgent and, deliberate and thoughtful when things are stable. Not every decision needs to be made right away and, indeed, shouldn't be as our faster decision-making can be more prone to biases. Deliberate decision-making is prone to biases as well but with deliberate decision-making there are more opportunities to examine and identify biases.

So how can we allow for this flexibility and decentralization? As Bjornstad argues, network organization may be the answer (Bjornstad, 2011). As Bjornstad notes, the ideas and designs of networked organizations have been present in literature since the 1980s. Networked organizations are "expected to promote both more adaptable and efficient organizations…Many military organizations, NATO included, are currently planning for changes to bring military organizations toward network-enabled capabilities (e.g., NATO Network Enabled Capabilities [NNEC])" (Bjornstad, 2011).

Most, if not all, participants of this study were taken aback with the scope, duration and intensity of the disruption brought about by COVID-19. It was evident that many leaders of SMEs managed the disruption by drawing the Senior Management Team closer in order to manage the complexity, however, this left many of the employees feeling abandoned. Where the employees were used to more centralized guidance from the CEO him/herself, the impact of "disappearance" was far more pronounced.

The more experienced participants naturally had more practice with disruption and had created "flags" for themselves to know when things were not going well: they did this by ensuring they

stayed close to other industry players and staying close to their numbers or "metrics of success". Another SME leader shared that, in retrospect, they would create space to plan more and do less. In addition, they would ensure that people worked more collectively.

C. Cultural preparedness

At a very high-level, organizational cultures have 8 styles when analyzed across two critical features: how people interact and how people respond to change. African organizations exhibited a high degree of learning and purpose cultural styles, indicating a high degree of flexibility. When examining how people interacted, Western Europe and North and South American organizations exhibited a clear preference for independence, with North American organizations demonstrating a clear preference for the results cultural style. (Yo-Jud Cheng and Groysberg, 2020).

Based on what we know about agility and resilience, namely that it requires flexibility and relationships (that can be loosely linked to interdependence), we can theorize that cultures that exist in the top right quadrant (purpose and caring) are most likely to create the conditions that allow agility and resilience to flourish. Currently, most North American organizations are in the bottom-left quadrant, specifically identifying with a results-based cultural style.
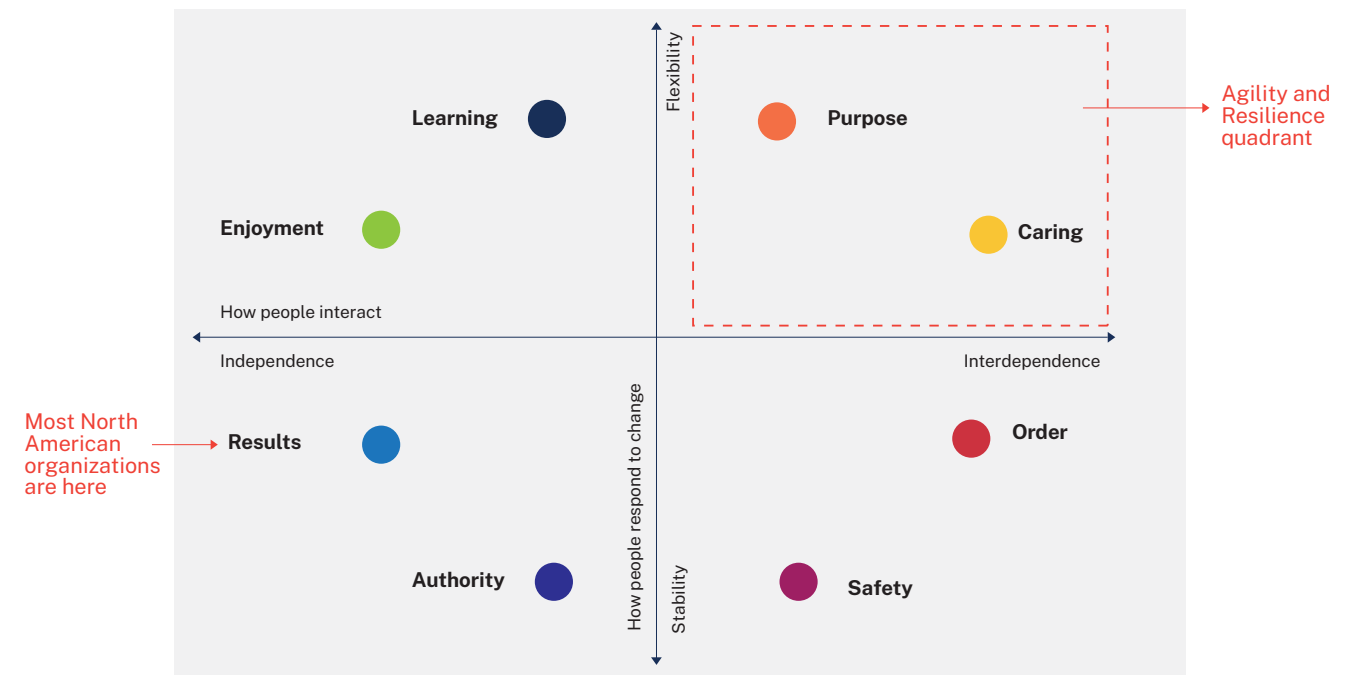
Figure 7: Author-modified image of "The 8 Styles of Organizational Culture".

So how do we move towards the top-right quadrant from being in the bottom-left? There are a few cultural attributes that are linked to greater flexibility and interdependence, or agility and resilience, they are:

- **Psychological Safety:** which is "the belief that one can speak up without risk of punishment or humiliation (Edmonson and Mortensen, 2021)".
- **Belonging or the feeling of community:** As Carr et al. (2019) note, social belonging is a human need. The pain of exclusion is the same as physical pain and yet 40% of employees report feeling isolated in the U.S. This, despite the $8 billion (USD) companies spend each year on Diversity and Inclusion (D&I) initiatives. There is good news however, when employees feel like they belong, "companies reap

substantial bottom-line benefits. High belonging was linked to a whopping 56% increase in job performance, a 50% drop in turnover risk, and a 75% reduction in sick days. For a 10,000-person company, this would result in annual savings of more than $52M. Employees with higher workplace belonging also showed a 167% increase in their employer promoter score (their willingness to recommend their company to others). They also received double the raises, and 18 times more promotions. (Carr et al., 2019)."

- **Empowerment:** which is the management team of the organization can increase empowerment by increasing role fit, helping facilitate connections in the organization and connecting roles to purpose (Baumgartner, 2020).

- **Curiosity:** which is "the impulse to seek out new ideas and experiences — is crucial to innovation because it moves people to look at the world from a different perspective and to ask questions rather than accept the status quo (Gino, 2016)." When our assumptions are challenged, as they often are by disruptions, curiosity triggers a direct response (Gino, 2016) and has, in addition, been linked to being a key ingredient in developing empathy (Bregman, 2020). Interestingly, "83% of executives say they encourage curiosity. Just 52% of employees agree (Harrison et al., 2018).

- **Failure:** Stories of successes and failures depict the two concepts as very stark and opposing concepts, when they are often much closer than what we'd like to believe. Researcher Dashun Wang, found that what matters most is our response to failure: if people "gave up" or didn't try as much after failing, it had a negative impact on their success and those that kept trying, were more successful. In other words, "the rich get richer" logic doesn't apply to success. (Wang, 2020).

While this research didn't probe for cultural preparedness in detail, it is a theme that was an undercurrent to much of what our participants shared: without the right people in place, 55% of SMEs owners, leaders and executive survey respondents indicated that they might not have been able to adapt in the immediate term (within 6 months). Others told us, in surveys and in interviews, that where the culture was not healthy, attrition was high which led to further degradation of the working environment and the organization.

D. Financial preparedness

One of the biggest challenges for SMEs is that much of our understanding of finance is based on large organizations which have 500 or more employees. Ang (1991) suggests that these differences between SMEs and large businesses create a new set of financial management issues that have strong implications for small business and small business financial research. Some of the unique characteristics of small business finance (Ang, 1991; Landstrom, 1993) and their implications for agility and resilience are discussed below:

- Undiversified personal portfolios of owners: For small businesses, especially in the case of sole proprietorships and partnership, the financial health of the owners matters because it can be one of the strongest sources of financial resilience. Unfortunately, however, small business sole proprietors and partners tend to have very undiversified portfolios because the business tends to comprise the majority of their investments (Ang, 1991).

- Risk-prone first-generation business owners: Because business owners can have significant, if not total, say in financial decisions, the business risk appetite can closely match the owner/CEOs appetite for risk which could, in turn, make the owner's risk appetite a financial risk for the business. First-generation business owners are optimists (Ang, 1991); it is the quality that made them successful in the first place but it is this same quality that can lead business owners to underestimate financial cost, risk and preparedness. The inherent optimism could increase risk for financial fragility, however, resilient organizations create the right relationships to access financial advice and counsel, when and where needed.

- Incomplete management teams: Small businesses can also struggle with incomplete management teams where a small number of people try to fill many of the operational functions (Ang, 1991). In this way again, resilient organizations ensure access to good advice and counsel, whether it is by hiring complementary and supplementary skillsets

or by ensuring the right advisors are present through means such as the Board of Directors

- Capital structure and management: Small businesses have inherent complexity of funding sources and equity contribution agreements that can sometimes be offered to employees in lieu of above market pay and/or overtime (Ang, 1991). These sources together can create financial complexity, which, if not well-understood, can lead to system vulnerabilities that lead to common reasons for business failures.

- Working capital and liquidity: excess liquid funds or "slack" occupy the greatest amount of small business' time and with good reason: excess funds allow small businesses to avoid lenders (and the costs and risks associated with it) and minimizes the probability of premature liquidation by the lenders. In addition, small business corporations may use this slack to accumulate extra profit (Ang, 1991). "Slack" or extra capacity is critical to agility and resilience as it builds flexibility.

The interaction of these factors with management practices, policies and organizational design, among other factors, lead to the main reasons of financial business failures that are identified in a number of studies (Salazar et al., 2012). These reasons are:

- lack of financial planning,
- limited access to funding,
- lack of capital,
- unplanned growth,
- low strategic and financial projection,
- excessive fixed-asset investment and
- capital mismanagement.

Financial preparedness was highlighted as a key enabler of agility. In fact, 83% of the survey respondents agreed that they were able to take

immediate actions (within 6 months of the disruption impact) as a result of their finances. The reasons for financial business failures highlighted above by Salazar et al. were all highlighted, in different ways by both survey and interview participants. In an interview, one business owner, in particular, spoke candidly about wishing that the organization had planned for at least six months of operational expenses. The business did have a financial float equivalent to 3 months of expenses but accessing government funding takes time, especially in times of disruption when clarity of information can be lacking and 3 months was simply not enough. When asked, business owners generally spoke favourably about wage subsidy programs that are being offered by the Canadian Government; the government support offered a channel of resilience that is currently keeping these businesses afloat as they try to adapt to a new, acceptable state.

Some participant businesses demonstrated their grit by leveraging causes of common business failures as their strength. Two businesses, in particular, ensured that they have very minimal fixed-asset investment (in their cases, a physical location). Early in their business development, they had made a choice to "stay light" and, in this way, they minimized the impact of COVID-19 when it hit.

E. Technological preparedness

COVID-19 has shone a spotlight on the role of technology. Technology is the mediating channel of connection, now more than ever, helping us stay in contact with families, friends, workplaces, health and wellness, education and many other aspects of our daily life. Almost overnight, the world moved to digital channels and the demand for digital took-off (World Economic Forum, 2020). Now that almost all aspects of life are virtual, especially in the midst of a lockdown, cybersecurity challenges and privacy breaches

are top of mind for most companies (Whitelaw et al., 2020). For many small businesses, including the participants of this study, the challenge has been to procure and deploy virtual services and interaction models with customers that they never had to, or wanted to, consider previously. Despite that, most participants report positive outcomes from creating digital offerings and plan to keep them running, even after COVID-19. Digital native businesses, of course, fared better when it came to navigating the COVID-19 crisis. Important to note, however, is that digital didn't make sense for every business. One of the participant businesses in the Arts industry ultimately chose to temporarily wind down operations to protect their customer experience.

On the other hand, technology can also be the cause of breakdown and disruption. Carmeli and Shaubroek (2008) note that previous work on technological preparedness highlights that "complex technologies make organisations more vulnerable to crisis situations." This was apparent in a recent wireless outage at Rogers Communications. Rogers customers lost personal communications services and while they could still call 911 in case of an emergency, Emergency Services warned that they could not call back in case the line gets disconnected. Additionally, experts warned of its economic impacts across Canada. This outage was expected to impact an estimated 10.9 million people (Global News, 2021).

Respondents of the survey and the interviews highlight that many are still surviving ongoing lockdowns because they are still able to connect with clients digitally. Of course, connecting via technology isn't ideal for all businesses: some arts-based and personal services businesses have disproportionate impact because some experiences simply don't translate well to digital. For example: haircuts or manicures. However, this is where creativity is playing a key role. Industries

once based on the premise of in-person presence, like gyms, are now leveraging technology to create virtual communities. In the case of gyms, it looks like online workout classes and social platform offerings that allow for social connection.

Support Systems

Agility and resilience are connected across multiple levels: agility and/or resilience of one level has direct and indirect impacts to the agility and resilience of the other levels.

A. Individual or personal level

At the individual level, resilience can be derived from the type of relationships we have in our life. Our colleagues, people managers, mentors, advisors, friends and family all contribute to our personal resilience. The skills we possess facilitate these connections. Skills like self-awareness, social skills and conflict management are therefore important to resilience.

B. Group (or team) level

Resilience at the group level is derived from how group or team members relate within the team and how the team relates with the organization-at-large. These interactions can be facilitated, or barred, by organizational structure, technologies, and support systems.

C. System level

Resilience at the system level is about how the system, in this case the organization, relates with its own employees. It's also about the relationships it forms externally to support the system which can include suppliers and partners, Board of Directors, industry mentors and advisors. At the system level, these relationships are often facilitated, or barred, by strategies, organizational structure, technologies, and support systems.

D. Ecosystem level

Ecosystem actors like investors, customers, communities, industry associations, partners and government bodies all contribute to organizational resilience. These relationships are often facilitated, or barred, by strategies.

Through this research, examples about the importance of mentors and advisors at all levels. At the individual level, those that felt trusted and well-supported by their colleagues and the organization reported a higher tolerance of perceived negative events. In a particularly poignant example of ecosystem resilience, one of our participants spoke about competitors in the industry stepping in to send their customers to his/her business.

Exploration, exploitation and improvisation

Keen readers may associate these qualities with innovation and they would be correct in this association.

Weber and Tarba describe the capabilities, as follows:

"Strategic agility consists of dual major capabilities. The first capability is emphasized by leadership: sensing the direction for a needed change and putting together the right resources for strategy execution. The second capability pertains to organizational design that includes the necessary structural adaptation and mechanisms to implement the course of action. However, neither is sufficient on its own, and it is crucial that both of them complement each in order to enable enduring strategic agility (Weber and Tarba, 2014)."

They refer to these capabilities as "Exploration" and "Exploitation". "Exploitation" as a terminology has extractive connotations that do not represent

the intent or impact of resilience. However, in this context, the term is being utilized to express fully examining and leveraging opportunity presented to the organization and, as experimentation is already encompassed in 'exploration', this paper will continue to utilize the term, in absence of a more accurate alternative. While exploration and exploitation may be sufficient for agility alone, resilience requires an additional capability: improvisation.

Improvisation, it turns out, also takes practice. In a crisis or times of extreme uncertainty, an organization needs employees that are agile (that is, flexible and act fast - without instruction). Said differently, an organization requires employees who can be skilled improvisers. Improvisation is key to organizational agility (Mannucci, 2021). There are three types of improvisation:

1. **Imitative:** which is usually exhibited by the least experienced consists of observing the more experienced people and matching their response with slight variation.

2. **Reactive:** which is about using the inputs from others and the environment to create and original response to something unexpected, without depending on anyone else, and,

3. **Generative:** which is about probing into the future and proactively trying new things to anticipate or even create new possible paths. Generative improvisation is inherently riskiest therefore it requires a higher degree of mutual trust (Mannucci, 2021).

Developing improvisation skills, however, requires both collaboration and competition - somewhere along this tension, great improv is born. Mannucci et al.'s research specifically suggests that competitive people generally develop reactive improvisation faster because "they act on as many inputs as possible". Reactive improvisation is helpful in the short term but it alienates others in due time. In contrast, collaborative people take

longer to develop reactive improvisation but they eventually garner enough trust and social connectedness to create generative improvisations.

Unsurprisingly, there is a place for both.

Participants of this study spoke candidly about having to "create it as they go", referring to new products, services and technology systems the organizations created in response to COVID and other disruptions. Some participants of this study were also in the process of changing their entire business models, in response to multiple disruptions ranging from cheaper entrants, changing consumer preferences, shrinking markets and disruptions in market supply.

Rest

So often in business literature and in everyday discussions of agility, we forget that agility comes with rest. While the popular imagining of the organization likens it to a machine, as we discussed earlier in the paper, an organization is far closer to an organism than a machine. Organizations, and humans, need rest to be agile. The two concepts cannot be separated – they are part of the same whole. As Harfoush succinctly points out in her book Hustle & Float "productivity is based on a model of continuous output, a need to account for every minute of the day, to prove that we are indeed contributing" (Harfoush, 2019). As she explains, productivity started as a management practice by militaries and governments to manage large groups of people where they were completing standardized tasks. It was then adapted to the Industrial Revolution to improve the quantity and quality of manufactured goods. We are, however, longer engaging as heavily in the production of

manufactured goods as we used to, especially in Canada. In almost every sector, creativity can offer benefits. In fact, even in manufacturing, standardization doesn't exist to the same extent that it did in the times of Industrial Revolution (Forbes, 2019). As we've moved from a manufacturing-based economy to a knowledge-based economy, we've brought along behaviours that were supposed to help us but now only help to hinder our creativity (Harfoush, 2019).

Understandably, this is a tough message to receive in a world that is consistently trying to go faster but such is the nature of agility and resilience: sometimes we have to go slower, to go faster. Some participants of the study called this out explicitly, citing burnout as a cause of non-productive conflicts, aggression and breakdowns in communication.

06
Enabling Resilience Transformation in SMEs

In 1998, Mallak highlighted six factors that he proposed effectively measured organizational resilience. They were:

- goal-directed solution seeking;
- risk avoidance;
- critical situational understanding;
- ability of team members to fill multiple roles;
- degree of reliance on information sources; and
- access to resources

What these factors have in common is that they are all trying to unearth the relationships that exist between strategy, structure, people, process and technology. These factors, however, miss anchoring specificity: are they applicable just generally? Which ones might lead to better results? And, crucially, what differentiates an organization that has "good" resilience from an organization that has "great" resilience? At its core, resilience maturity is about improving the conditions of resilience which were discussed earlier in the paper. They are:

1. Building Robustness
2. Developing Integrity
3. Achieving Agility (and awareness)

In addition to this, if you'll recall, we are essentially looking to establish 3 types of resilience capabilities:

- **Cognitive Resilience:** the capability of an organization to perceive changes and interpret unfamiliar situations,

- **Behavioural Resilience:** the capability of 'learned resourcefulness, counterintuitive agility, useful habits and behavioural preparedness where the organization is able to have the tools and procedures in place to create new routines and use its resources under pressure, and finally,

- **Contextual Resilience:** the capability of an organization to create, maintain and utilize interpersonal connections (Lengnick-Hall et al., 2011).

This paper proposes an original maturity framework based on the seven elements of agility and resilience to experientially outline what the progression to a resilient organization may look like. This model, below, looks to incorporate the levels of resilience, the criticality, and the impact of disruptions. It proposes how we might incorporate the capabilities of resilience with the conditions, dimensions and elements of resilience. What might resilience look like in practice and what are the experiential differences between each maturity level? These are questions that are all questions answered in the maturity framework, shared below.

Agility and Resilience Maturity Model for Resilience Potential

As discussed earlier in the paper, one of the biggest barriers to implementing agility and resilience in organizations is the lack of clarity in the definitions of these concepts. This lack of clarity is cited across countless academic papers within both agility and resilience bodies of knowledge. The Agility and Resilience Maturity Model is a result of attempting to lend clarity in both concepts by highlighting the dimensions and creating a tool to clarify the steps SMEs need to take on their resilience transformation journey.

The maturity model asses resilience potential across the seven elements. Within these seven elements of resilience, several aspects of these elements are broken down into criteria and elaborated on across a low or "Reactive" maturity, medium or "Responsive" maturity and high or "Resilient" maturity in the organization:
Using the Agility and Resilience Maturity Model enables organizations to assess where they are currently in their resilience potential which can then allow the organization to consider where and how to improve resilience potential, as appropriate for the organization's strategy. The organization can also use the maturity model later to validate the goal and plans at different time horizons. Finally, the organization can use this framework to test and measure implementation. Ultimately, the maturity model allows organizations to make purposeful and impactful investments that allow organizations to achieve a desirable future-state for their resilience potential.

Under each element, the tool highlights specific behaviours or characteristics that the organization can rate themselves on. Whichever level is the most common for each of those characteristics, is the level that your organization is at for that element. Each level in the maturity model is indicative of sophistication and integration across the seven elements that are, in turn, developed through the improvement of skills and capabilities of the organization, which can be summarized, as follows.

Values & Purpose
Focuses on the role of values and purpose in tthe organization

Trust
Shares what the role of trust within, with, and outside the organization

Leadership
Explains the types of leadership required for reslince and how to enable them

Agility and Resilience Maturity Model

Rest
Highlights the role of rest being a driver of agility and resilience

Support Systems
Examines the role of connection across different levels

Exploration, Exploitation and Improvisation
Highlights the role of awareness and action in agility and resilience

Preparedness
Highlights the tupes of preparedness organizations need to encourage or build for resilience

Figure 8: A visual model of the proposed Agility and Resilience Maturity Model.

Maturity Model — Assess — **Maturity Model** — Validate — **Maturity Model** — Implement
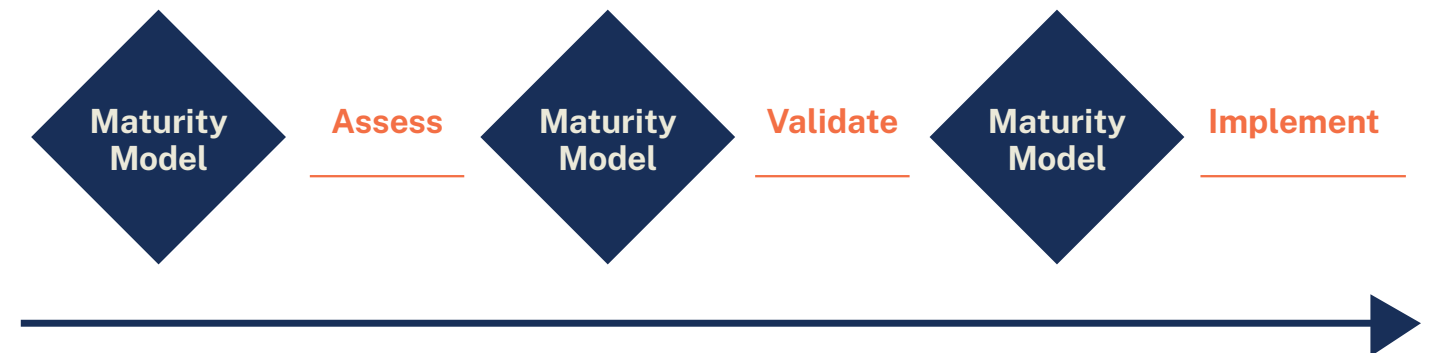
Figure 9: Overview of the different intervention points where the Agility and Resilience Maturity Model can add value and insight.

	Reactive Level 1 - Low	Responsive Level 2 - Medium	Resilient Level 3 - High
VALUES AND PURPOSE	Purpose and values are not explicitly defined so the organization leverages the purpose and values of the CEO/Owner.	Values are implied but not stated. Purpose is narrowly defined and requires change as market conditions change.	The clearly stated values of the organization propel action. Purpose is inspirational and aspirational. The combination of explicit Values and Purpose supercharges collaboration, trust and decision-making in uncertainty.
TRUST	Characterized by an absence of collaboration and the presence of fear and insecurity.	Limited collaboration and hesitant authenticity in engaging with one another.	High levels of cross-functional and transdisciplinary collaboration within the organization and with Ecosystem Actors (i.e. suppliers and partners, investors, communities, and government entities)
LEADERSHIP	Leadership is only hierarchical.	Non-hierarchical leadership is only acceptable in informal contexts.	Non-hierarchical leadership is expected, encouraged and developed. Everyone in the organization understands that leadership is transient and context-driven.
PREPAREDNESS	Business disruption is considered reactively at all of the preparedness levels: Strategic, Structural, People and Culture, Financial and Technological.	Business disruption is discussed at planned and regular intervals across all preparedness levels: Strategic, Structural, People and Culture, Financial and Technological.	The business regularly discusses disruption as part of day-to-day management and it is examined in an integrative way across all preparedness levels: Strategic, Structural, People and Culture, Financial and Technological.

	Reactive Level 1 - Low	Responsive Level 2 - Medium	Resilient Level 3 - High
SUPPORT SYSTEMS	People feel alone and threatened which leads to higher burnout rates. The system suffers from a lack of insight, expertise and wisdom. Minor incidents lead to disproportionally higher impact breakdowns.	People have a few strong relationships that ground them. Although the relationships ground individuals, burnout remains high. The system has access to some expertise and insight to help it survive.	People feel empowered and connected, leading to low burnout rates. The system has access to the right insight and expertise to help it thrive and impacts of incidents are minimized or avoided altogether. When they cannot be avoided, the system marshals the right resources to reach a new acceptable state quickly.
EXPLORATION, EXPLOITATION AND IMPROVISATION	The organization focuses only on developing their current business and business model. Environmental scanning activities happen ad hoc.	The organization focuses on their business and current business model. Senior management engages in occasional environmental scanning happen.	The organization balances between current business and business model, and, exploring new business ideas for reinvention.
REST	Rest is associated with negative perceptions at work and overwork is celebrated as a proxy for competence.	Rest is accepted but extra capacity is still perceived negatively, and with suspicion.	Rest is seen as a crucial part of organizational growth. Great "rest hygiene" is developed and supported at the organizational level.

Organizations looking to improve their resilience can then move up in maturity levels in the following ways:

REACTIVE	RESPONSIVE	RESILIENCE
LEVEL 1	LEVEL 2	LEVEL 3

RESPONSIVE (Level 2):
- Define, standardize and formalize organizational basics
- Benchmark against peers and industry, where possible
- Invest in data and analytics capabilities
- Conduct frequent operating environmental scans
- Build connections, within and outside the organization

RESILIENCE (Level 3):
- Invest and develop 'systems thinking' capabilities
- Build strong relationships, within and outside the organization
- Develop employees, trust in their capabilities and delegate decision-making
- Foster "shared" or non-hierarchical leadership
- Supplement strong Voice-of-the-Customer (VoC) and Voice-of-the-Employee (VoE) systems with strong qualitative research
- Continuously scan the operating environment and exploit new business opportunities
- Prioritize. And, prioritize rest

Figure 10: A high-level look at how to move from one level in the maturity model to the next.

Agility and Resilience Maturity Framework for Resilience Potential

	Reactive	Responsive	Resilient
	LEVEL 1 - LOW	**LEVEL 2 - MEDIUM**	**LEVEL 3 - HIGH**
VALUES AND PURPOSE	Purpose and values are not explicitly defined so the organization leverages the purpose and values of the CEO/Owner.	Values are implied but not stated. Purpose is narrowly defined and requires change as market conditions change.	The clearly stated values of the organization propel action. Purpose is inspirational and aspirational. The combination of explicit Values and Purpose supercharges collaboration, trust and decision-making in uncertainty.
	Neither values nor purpose are explicitly defined. The organization depends on the CEO/Owner to set direction.	Values are still not explicitly outlined. However, Purpose is defined narrowly (sometimes as specifically as a type of product or service) and requires changing as market conditions change significantly.	Explicit articulation of values that provides navigational support and trust between colleagues in uncertain environments. Purpose is defined broadly to accommodate significantly changing market conditions without losing the "soul" of the organization but the organization recognizes that there may be scenarios where purpose may no longer be applicable.
	Values and purpose are relatable only to those employees who have similar purpose and hold similar values as the CEO.	Lack of explicitly stated values lead to employees that may or may not align with them, leading to extra required navigation in order to effectively collaborate. Purpose is defined narrowly (as specifically as to a product or service).	Explicitly stated values lead to employees that align strongly with them which, in turn, creates capacity for trust. Purpose provides inspiration, empowerment, motivation and aspiration for a large group of people.

	Reactive	Responsive	Resilient
	LEVEL 1 - LOW	**LEVEL 2 - MEDIUM**	**LEVEL 3 - HIGH**
TRUST	Characterized by an absence of collaboration and the presence of fear and insecurity.	Limited collaboration and hesitant authenticity in engaging with one another	High levels of cross-functional and transdisciplinary collaboration within the organization and with Ecosystem Actors (i.e. suppliers and partners, investors, communities, and government entities)
a) Trust within the organization	Strong silos exist within the organization, evidenced by a lack of cross-collaboration on deliverables.	Silos exist within the organization, but there is some cross-collaboration, when necessary.	Teams may exist in functional areas but the majority of the work happens in cross-functional teams.
	Employees doubt the competence of their colleagues and prefer working alone. There is high levels of monitoring behaviours and micro-managing of almost all work being conducted.	Employees are selective about who they work with and which teams they join. Monitoring behaviours and micro-managing are reserved for "important" projects or deliverables.	Employees are equally willing to work with almost all people and teams in the organization. People in the organization don't feel the need for monitoring behaviours or micro-management.
	There is high attrition and employees feel that they are treated as easily replaceable.	Attrition is on par with industry benchmarks and employees are indifferent about how they might be treated	There is low attrition and employees know that the organization will treat them well, even if they have to leave the organization.
	Employees don't believe that the organization considers their best interest when making decisions that impact them.	Employees believe that the organization considers their best interest when making decisions that impact them, at least some of the time.	Employees believe that the organization considers their best interest and the community's best interest when making decisions that impact them.
	Employees report a lack of transparency within the organization and have no agency to influence their outcomes.	Employees lack transparency for some of the decisions that impact them and are sometimes given the opportunity to influence the outcome, dependent on position level.	Employees not only have transparency into many of the decisions that impact them but they also have the opportunity to co-create the solutions, at every level of the organization.

	Reactive	Responsive	Resilient
b) Trust between the organization and Ecosystem Actors	Partnerships and interorganizational collaborations are low.	There are some strong partnerships and interorganizational collaborations.	There are strong partnerships and interorganizational collaborations.
	Frequent complaints and a high customer churn rate.	An acceptable customer escalations and churn rate that is on par with industry benchmarks.	Customer churn rate and escalations are below industry benchmarks.
	Ecosystem Actors believe that the organization may have its own interest in mind first.	Ecosystem Actors believe that the organization will do the right thing, at least some of the time.	Ecosystem Actors believe that the organization will do the right thing for them and for the organization.
	There is little or no industry-wide shared knowledge (i.e. best practices).	There is some ad hoc industry-wide shared knowledge (i.e. best practices).	There is industry-wide shared knowledge (i.e. best practices) and organizations actively engage with one another.
	LEVEL 1 - LOW	**LEVEL 2 - MEDIUM**	**LEVEL 3 - HIGH**
LEADERSHIP	Leadership is only hierarchical.	Non-hierarchical leadership is only acceptable in informal contexts.	Non-hierarchical leadership is expected, encouraged and developed. Everyone in the organization understands that leadership is transient and context-driven.
	Only those appointed to lead can lead, no matter what the organization is experiencing.	Work efforts are led by appointed leaders but the organization does encourage those lower in the hierarchy to demonstrate leadership in informal, voluntary contexts on behalf of the organization. For example: pro bono initiatives.	Work efforts can be led by anyone in the organization. Management leaders deeply understand the talent and passion on their teams and empower those who want to lead, to lead.
	Answers to organizational problems are expected to be at the "top" of the organizations.	Solution-generation and validity of those solutions are still perceived by the Employee Level in the organization: Some ideas and solutions are expected to be generated at the "lower" level of the organization but senior management is still seen as the body that can accurately evaluate the validity of the ideas.	The organization understands that good ideas can come from anywhere in the organization and that we all have the capacity to lead, at different times, for different reasons and perhaps even at different stages of problem solving.

	Reactive	Responsive	Resilient
	LEVEL 1 - LOW	LEVEL 2 - MEDIUM	LEVEL 3 - HIGH
PREPAREDNESS	Business disruption is considered reactively at all of the preparedness levels: Strategic, Structural, People and Culture, Financial and Technological.	Business disruption is discussed at planned and regular intervals across all preparedness levels: Strategic, Structural, People and Culture, Financial and Technological.	The business regularly discusses disruption as part of day-to-day management and it is examined in an integrative way across all preparedness levels: Strategic, Structural, People and Culture, Financial and Technological.
a) Strategic preparedness	The organization engages in environmental scans and SWOT analyses on and ad hoc basis and it is considered the purview of senior management.	The organization is informally aware of its environment and developing opportunities or threats but this is generally the purview of senior management.	The organization regularly scans its environment to track developing opportunities or threats and all employees consider it their responsibility to keep up with their industries regularly.
	The organization engages in linear strategic planning with a predicted/expected strategic outcome.	The organization engages in a consistent approach for a Strategic Foresight practice across the organization (Grim, 2009)	The organization actively and regularly engages in Strategic Foresight across the organizations and takes immediate and appropriate action on insights of strategic importance, often creating and disseminating new methods and applications.
	Employees may or may not be keeping up with developments in the market. No formal method exists to capture their learning.	Employees are encouraged to keep up with developments in the market. Informally, people managers may be aware of who is keeping up but no formal method exists to capture their learning.	Employees are encouraged and recognized to keep up with developments in the market, report back and act on the insight they've discovered.
	Employee and customer opinions are collected on an ad hoc basis, and often informally. Data and insights are primarily available on the consumer experience and it are leveraged only as necessary.	Employee and customer opinions are formally collected and sometimes consulted in strategic planning processes. Data and insights on consumer and employee experience exist but they are leveraged only as necessary and they are considered separate systems.	Employees and customers have a voice in enterprise strategic planning processes. An appropriately robust data and insights system exists to keep a pulse on consumer and employee experience.

	Reactive	Responsive	Resilient
b) Structural preparedness	The organization adheres to centralized decision-making that follows the "usual chain-of-command"	The organization generally engages in centralized decision-making but has the infrastructure in place to allow for decentralized decision-making, as needed.	The organization generally engages in decentralized decision-making.
	Only centralized decision-making is encouraged or possible.	There is lag in switching between centralized and decentralized decision-making and the switch only happens in the most critical of incidents.	There is minimal lag in switching between centralized and decentralized decision-making.
	The organization has a high-level plan for business continuity, in case of emergency.	The organization has a high-level plan for business continuity, in case of emergency.	The organization has a business plan that it actively monitors, builds, and tests with employees via drills. Results are recorded and improved upon.
	The organization runs basic drills that are required by law or regulation. These generally include fire safety drills among others, depending on jurisdiction.	The organization occasionally runs the practice drills required by law but also runs occasional drills on other topics like a phishing attack simulation to help employees understand their roles and responsibilities.	The organization runs sophisticated, complex and varied drills at regular intervals that include scenarios developed by active monitoring of the business environment and can include scenarios such as cybersecurity breaches, human illness pandemics, extreme weather events, financial collapse and technology systems discontinuities.

	Reactive	Responsive	Resilient
c) Cultural preparedness	When asked, employees report some hesitation in bringing forward differing or unpopular opinions. Employees feel comfortable sharing feedback only when anonymous channels are provided.	Employees have trouble "speaking truth to power" and report higher levels of psychological safety and trust with either their direct manager or their colleagues, but not anyone else beyond that.	There is high psychological safety and trust between colleagues and leaders. Employees feel comfortable discussing differing opinions with anyone in the organization.
	Employees feel uncomfortable "bringing their whole self to work" for fear of repercussions. This includes their identities as well as their thoughts, feelings and opinions. Employees generally report feeling respected but not included.	Employees feel that they are comfortable disclosing some of the "safer" identities and opinions. Some employees report that they feel like they belong but it is team- and context-based. The organization offers some inclusion initiatives.	The organization has created a safe space for everyone to bring their "whole selves to work". People have built "the muscle" to discuss controversial topics with respect and empathy while maintaining trust and productive relationships. Employees report a feeling of belonging, across the organization, regardless of context. The organization holds itself accountable for belonging.
	Decision-making authority is limited to management.	Decision-making authority is largely management driven. Managers and leaders of the organization expect that employees check-in with them before making decisions.	Managers and leaders of the organization empower employees to make decisions by setting clear boundaries for decision-making authority and by providing opportunities for people to build their "decision-making muscles".
	Individual performance is recognized and rewarded. "Star performers" are revered.	Teamwork is recognized and rewarded but individual performance is rewarded ahead of teamwork (informed by fear of losing "Start Performers").	Teamwork is rewarded and valued ahead of individual performance. Individual performance is also recognized but in context of the bigger team effort. The organization recognizes that hardly anything is done in isolation.

	Reactive	Responsive	Resilient
	Punitive methods may be used to drive performance.	Performance is driven by a mix of authority and encouragement.	Performance is driven by individual drive and organizational empowerment.
	Feedback is generally given and received by the supervisor or direct people manager.	Feedback is largely given and received by those that have a rapport with each other. However, employees feel comfortable enough to request feedback.	There is a strong culture of "critique" (positive and developmental feedback"). Feedback is seen as an asset and so common that it is not perceived as threatening.
	The organization provides some of the tools for talent development but believes that it should be individual-driven ("self-serve" talent development). Learning is course-based.	The organization provides the tools for talent development. Talent Development is largely people management driven. Learning is course-based with some coaching, dependent on the People Manager.	The organization takes accountability for talent development with the recognition that people development is organizational development. Talent development is seen as a co-creation activity between employees and the organization. Work-integrated learning is the norm.

	Reactive	Responsive	Resilient
d) Financial preparedness `	"Stress tests" occur only when required by investors, VCs, financial services or regulators.	"Stress tests" are scheduled every 2 years.	There are regularly scheduled "stress tests" to ensure liquidity and organizational stress tests occur in accordance with strategic scenarios.
	The company has a "reserve fund" but it would not cover a month's operating expenses.	The company maintains a "reserve fund" equivalent to a minimum of 3 months of operating expenses.	The company maintains a "reserve fund" equivalent to a minimum of 6 months of operating expenses.
	Financial management exists but there is little or no financial planning.	Some financial planning happens at long intervals.	In alignment with strategic scenarios, the company conducts regular financial scenario planning. The business utilizes a diverse set of financial tools that incorporate diversity in investment that also aligns with strategic scenarios.

	Reactive	Responsive	Resilient
e) Technological preparedness	Only the technical leads have any understanding of the "areas of weakness" for the organization.	The Senior Management has a strong fundamental understanding of the technical "areas of weakness" for the organization.	The Senior Management has a strong fundamental understanding of the technical "areas of weakness" and the company has a strong sense of other companies they can partner with, in case it's necessary, to supplement the "areas of weakness". Employees understand their role in how they can contribute to tech systems health.
	Technical systems (internal and external) have the capacity to meet surge demands of a minimum of an additional 30% without service disruption.	Technical systems (internal and external) have the capacity to meet surge demands of a minimum of an additional 30% without service disruption.	Technical systems (internal and external) have the capacity to meet surge demands of a minimum of an additional 50% without service disruption.
	Data back-ups occur on an ad hoc basis, when critical events occur.	Data is backed-up periodically.	Data is backed-up regularly and automatically.
	Company data exists on individual employee devices and/or it is stored on on-premise services (potentially in a singular location).	Data is secure and stored in off-premise servers.	Data is secure and stored in servers that are geographically dispersed.

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	Reactive	Responsive	Resilient
	LEVEL 1 - LOW	**LEVEL 2 - MEDIUM**	**LEVEL 3 - HIGH**
SUPPORT SYSTEMS	People feel alone and threatened which leads to higher burnout rates. The system suffers from a lack of insight, expertise and wisdom. Minor incidents lead to disproportionally higher impact breakdowns.	People have a few strong relationships that ground them. Although the relationships ground individuals, burnout remains high. The system has access to some expertise and insight to help it survive.	People feel empowered and connected, leading to low burnout rates. The system has access to the right insight and expertise to help it thrive and impacts of incidents are minimized or avoided altogether. When they cannot be avoided, the system marshals the right resources to reach a new acceptable state quickly.
a) Individual or personal level	Employees lack "work friends". Most employees come in to do their job and leave.	Employees have pleasant relationships at work but relationships are primarily maintained at a project or team basis.	Employees are willing to spend time with each other during breaks. Employees enthusiastically attend work socials and enjoy working together.
	Employees don't have access to mentors and advisors and the organization makes no effort to encourage these relationships.	Employees have unequal access to mentors and advisors. The organization encourages having mentors and advisors but offers no support in identifying the right people.	Employees have access to the right mentors and advisors for them. The organization has robust infrastructure in place to help employees make those connections and enables them with the right information and tools to identify these supports on their own, if they choose to do so on their own.
	The organization makes no effort to develop skills and competencies that encourage healthy relationship-building.	Employees have access to online courses and training that they can voluntarily take to improve their relationship building but it is voluntary training. The skills and training required to build or improve healthy relationship-building are not identified by the organization.	The organization has not only identified the skills required for healthy relationship-building but it has also integrated those skills in its foundational skills training. Employees are trained and actively coached on-the-job to develop these skills.

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	Reactive	Responsive	Resilient
b) Group or team level	Employees are afraid to disagree with each other and especially afraid to disagree with management.	Employees disagree with each other sometimes but do not voice these concerns publicly or in front of management. Strong preference to deliver positive messages but avoid the negative.	Employees expect to disagree with each other when working together but have positive ways to channel those thoughts and emotions.
	0Groups and teams are formed within the same departments and silos.	0Groups and teams are occasionally formed between different departments and silos. When teams do have to work outside of their silos, they do so only when told.	0Proliferation of cross-functional collaboration where employees truly believe they create a superior deliverable as a result of working with diverse viewpoints. Employees actively find opportunities to collaborate.
c) System level	The CEO and Senior Management Team believe that all solutions for the organizational challenges can be found within the Senior Management Team.	The CEO and Senior Management allow a select few known and trusted employees, organizational advisors and mentors into the problem-solving process that occurs at the Senior Management level.	The organization believes in co-creating solutions to organizational challenges with employees, organizational advisors and mentors and, suppliers and partners.
	Suppliers of the organization are kept at a transactional level where the relationship starts and ends with a purchase.	Suppliers of the organization have some insight into the challenges and opportunities of the organization and they can sometimes offer proactive solutions.	Suppliers of the organization are true partners: they meet with the organizational leaders or representatives periodically to establish a high-level strategic understanding of the organization's goals and work with the organization to help achieve those goals.

	Reactive	Responsive	Resilient
	The organization lacks a Board of Directors; therefore, it misses out on independent advice from tenured and experienced professionals.	The organization's Board of Directors lacks independence and has insufficient diversity of experience to appropriately advise the organization leading to mixed results in the organization's ability to manage risks and explore new ideas. The Board is kept at some distance from the organization and they are provided with formal, periodic updates.	The organization has a Board of Directors that is independent of the organization which allows it to govern effectively. The diversity on the Board allows the organization to proactively minimize threats and identify, explore and exploit unique opportunities. The Board of Directors is intimately aware of the organization and its health. They bring strong experience, expertise and networks. The Directors provide strong governance and are willing to make tough decisions and challenge, when necessary.
	CEO of the organization has people that s/he/they can reach out to mentors or advisors when needed.	The organization has formally identified advisors to the organization that are consulted periodically about some of the larger challenges and opportunities of the organization.	The organization has formally identified advisors to the organization, outside of the Board of Directors, that are consulted regularly about the challenges and opportunities of the organization. These advisors and mentors have a strong understanding of the organization, its culture and its strengths and weaknesses. They bring strong expertise, knowledge and networks with them.
d) Ecosystem level	Investors are often left with little information to make informed decisions.	Investors have good insight into the functioning of the organization and have some capability to be a part of decision-making.	Investors work with the organization and communities that the business exists in to create profitability that is good for people and planet.

	Reactive	Responsive	Resilient
	The organization makes little to no effort in meaningfully giving back to the industry.	The organization makes some sporadic attempts at establishing contact with Industry Associations, advocacy groups and fellow organizations.	The organization has established contact with Industry Associations, advocacy groups and fellow organizations and regularly makes the effort to develop strong relationships, where appropriate.
	The organization makes little or no effort in establishing contact with others in the community.	The organization makes some effort in meaningfully giving back to the community by establishing a Corporate Social Responsibility (CSR) agenda but it is limited to ad hoc events and primarily driven by "transactional" monetary donations.	The organization understands the needs of the community and makes every effort, regularly, to meaningfully give back. There is a robust Social Responsibility team that actively advocates for the needs of the community and works to ensure the organization also does not engage in "extractive" ways with the community.
	The organization does not have a good idea of which government bodies may be stakeholders in the industry.	The organization does have some idea of which government bodies may be stakeholders in the industry but has not made a conscious effort in connecting with them.	The organization knows which government bodies may be stakeholders in the industry and makes a conscious effort in connecting with them.
	The organization makes little or no attempt at establishing contact with Industry Associations, advocacy groups and fellow organizations.	The organization makes some effort in establishing contact with others in the industry and is largely limited to occasionally attending industry events.	The organization actively makes an effort in establishing and maintaining relationships with others in the industry.

	Reactive	Responsive	Resilient
	LEVEL 1 - LOW	**LEVEL 2 - MEDIUM**	**LEVEL 3 - HIGH**
EXPLORATION, EXPLOITATION AND IMPROVISATION	The organization focuses only on developing their current business and business model. Environmental scanning activities happen ad hoc.	The organization focuses on their business and current business model. Senior management engages in occasional environmental scanning happen.	The organization balances between current business and business model, and, exploring new business ideas for reinvention.
	There is little thought given to potential areas of expansion and those discussions happen at the highest level of the organization: Exploration happens at the individual level, informally, and exploitation is not encouraged.	There is little thought given to potential areas of expansion and those discussions happen at the highest level of the organization. The business spends most of its time and effort in sourcing, exploring, and experimenting with ideas that have immediate/ short-term tactical impact.	There is a portfolio of "new ventures" that the business regularly evaluates against its purpose. The business spends time and effort in sourcing, exploring, and experimenting with new ideas that are aligned to strategic objectives and have impact across different time horizons and scenarios.
	Failure is seen as the opposite of performance and growth.	The organization may outwardly accept failure but the performance measurement and cultural infrastructure doesn't tolerate or accept failure. The "mixed messages" lead to fear and people default to avoiding failure.	Failure is seen as part of success. Those who fail are considered highly sought-after colleagues and leaders.
	"Failed" experiments are remembered negatively, especially in the memory of those that were involved with the projects.	Learnings from "failed" experiments are recorded and they are available to the team that created them. They are shared with others in the organization on an ad hoc basis.	Learnings from "failed" experiments are celebrated. Most importantly, failures are discussed openly. They are reviewed and applied to new concepts. The learnings are available to the whole organization.

	Reactive	Responsive	Resilient
	LEVEL 1 - LOW	**LEVEL 2 - MEDIUM**	**LEVEL 3 - HIGH**
REST	Rest is associated with negative perceptions at work and overwork is celebrated as a proxy for competence.	Rest is accepted but extra capacity is still perceived negatively, and with suspicion.	Rest is seen as a crucial part of organizational growth. Great "rest hygiene" is developed and supported at the organizational level.
	Rest is strictly and punitively managed: People are afraid to ask for time-off or take breaks for fear that they might be labeled as unproductive.	Rest is allowed, with permission: People do take time off but often have some unused vacation time at the end of the fiscal year because "working hard" is perceived as a key to career advancement.	Rest is seen as a business requirement: Taking vacation time is seen as part of exceptional performance. People who do not have good "rest hygiene" are seen as average performers.
	The organization is constantly "leaping from crisis to crisis".	The organization has some good systems and processes in place to prioritize the important aspects and slow down or pause what is not important.	The organization relentlessly prioritizes the most critical elements.
	Management ensures that all employees are fully allocated which can sometimes lead to over-allocation.	Management leaves 10% allocation for personal development initiatives which is often used up on other things.	Management allows for a minimum of 20% capacity (one-day a week) for personal development and passion projects.

Barriers to agility and resilience

There are a few key and systemic barriers to resilience. They are:

The push for "Lean" Operations
The advice to make operations "lean" is usually the first thing most SME owners, and most students of business, are taught and the logic initially makes good sense: use resources more efficiently and alleviate the drain on profits. Reasonably, it is hard to object to the reduction of waste. However, there are three key problems with the thinking that: the lack of capacity can lead people into a scarcity mindset, extreme economic efficiency has been proven to create social disorder and, it assumes the nature of our work is piecemeal (also known as, "we don't make widgets anymore").

The seeds of "lean" took root in Fredrick Taylor's philosophy of efficiency and when we had to stand in line and put one widget on top of another, his philosophy works. Since then, the nature of our work has changed but the paradigm behind it has not. Therein, lies the problem with lean and the lack of redundancy. The nature of our work has changed. Even where we have manufacturing, the nature of jobs is changing; with increasing automation, the manufacturing of Taylor's days is not the same as the manufacturing of today. Increasingly, we are moving toward knowledge and service work where the end product is not so simple; in some cases, the entirety of our production isn't even measurable. We need space for creativity, independent thought and unprecedented level of collaboration.

It is not hard to imagine a day when we have deadlines looming, back-to-back meetings and maybe even technology malfunctions in addition to an already-busy day. Many of us have days like

this and maybe even more often than we would like to admit. In their book "Scarcity: the new science of having less and how it defines our lives", authors Sendhil Mullainathan and Eldar Shafir argue that being short of time has the same dynamics at play as being short of money. In fact, having "less of" anything has an interesting impact on us that is the same regardless of what we feel we are lacking (i.e. lack of money is the same as having a lack of time, love or friendships). The authors acknowledge that there is very much a science of scarcity in existence that we commonly refer to as "economics" so what is different here? In economics, scarcity is pervasive – all of us have a limit and even the rich have a ceiling to their ability to purchase; that is our physical reality and we may not even notice it anymore. Our feeling of scarcity however, is not ubiquitous. We are very aware of what we don't have. The feeling of scarcity captures our attention, powerfully. It has the ability to warp our vision. Ever feel like reminders of food were everywhere when you were hungry or notice hand-holding couples everywhere when you were single or heart-broken? That is scarcity at work on our minds. It doesn't just capture our attention, it changes the experience of our reality. We become hyper-focused on what we don't have and, as a result, decisions we make reflect what we're missing. To make matters worse, scarcity breeds more scarcity because our faulty decision-making usually exacerbates the factors that created the conditions for scarcity in the first place (Mullainathan and Shafir, 2013).

Lean operations introduce a type of scarcity: the lack of capacity. When we are short of time and/or capacity, we develop tunnel-vision which makes it possible for us to ruthlessly prioritize the most immediate things. On its own, in a "do or die" situation, it can be a helpful coping response to a lack of resources. It's what kept us alive – the ability to focus on our most immediate needs.

When we do this once in a while, it can be a superpower. When we operate like this more often than not however, it is a maladaptive behaviour. In hyper-focussing on the most immediate problems constantly, we likely make matters much worse for us later down the road. Sound familiar? In corporate speak, it's called "short-termism" and companies with long-term' orientations "outperform their shorter-term peers on a range of key economic and financial metrics" (McKinsey, 2017). In organizations, a lack of capacity can lead the organization to miss environmental signals, changes in customer preferences, upcoming strategic opportunities or even incoming disruptions. Said differently, it's hard to prevent a fire from starting if we're always busy fire-fighting.

Lastly, as Roger Martin argues, an excessive focus on economic efficiency has the potential to create social disorder. This happens because superefficient organizations become increasingly specialized and the rewards of efficiency are increasingly, and unequally, conferred to only the most efficient competitors (Martin, 2019). It is important to note that efficiency alone does not make an organization "better" in any other way; it simply implies that the organization has figured out how to maximize the use of its resources, for better or for worse.

To support this demand for efficient organizations, the field of management rose to the challenge admirably. In fact, creating efficient organizations has become a main purpose of the field of management, and again, it is for entirely logical reasons: the more efficient the enterprise, the more profitable it will be and the more revenue it will earn. It follows the same logic as "you have to have money, to make money". And, what better value can the field of management demonstrate if not to catapult your organization into the upper echelons of business?

The unfortunate truth however, is this: the cost of efficiency is resilience. Put simply, removing redundancies removes resilience. Why should we object to the removal of "redundancies" or "slack"? Because redundancies are a type of insurance from catastrophic failure. They can be likened to succession planning for leadership roles in HR or having "players on the bench" in sports. Without slack, a system can be easily overwhelmed by an oncoming disruption. Even more damning to the philosophy of lean operations is the idea of a resilient response: a resilient response requires often to speed up even when our natural instinct may tell us to "fight", "flight" or "freeze". Speeding up in times of crisis requires incredible capacity (otherwise known as "slack" or "redundancies").

The conclusion therefore is simple: the leaner the operation, the more vulnerable the organization and its surrounding ecosystems become to collapse. This should be of special interest to small business: in an ecosystem, small businesses often play the role of "redundancies" – they give our societies more choice, more connection, more relationships. Small and medium businesses make us resilient. Martin conclusively proves that industries and sectors are becoming more consolidated and much closer to what biologists refer to as a "monoculture": where a single player controls the majority of the production. For example: Microsoft, which still dominates the operating systems market.

Anecdotally, when I've had conversations about redundancy with business owners and managers, there's usually a hesitancy around the topic that stems from visions of employees on their phones or watching movies and ignoring clients or some other cringe-worthy version of "wasting time". That's not what redundancy is advocating for – instead, imagine your best employee or the best

colleague you've ever had. You know the one: the one who's always on time, works hard, contributes excellent ideas, helps others and still manages to have a great attitude every day. The one who's always in demand. That one. What would happen if that employee had just 20% more capacity or "redundancy". Perhaps s/he could coach others and be a role model to other recruits. Perhaps, in that extra time, s/he could observe, explore and come up with other ideas that could help you navigate better. Perhaps, s/he could just rest and recharge so s/he is productive at work. That extra capacity could also allow us to be better and more patient coaches to others, building further redundancy by ensuring skill transfer which, in turn, would allow another employee to step in if "the coach" is incapacitated.

The pressure to "hire cheaper"
There are a few nuances behind under the pressure to "hire cheaper" and I explore two specific nuances below. Before we go to those instances however, there is something that needs to be made explicit: an organization's success depends on the talent it has and great talent costs money. Period.

The first nuance is around our expectations of talent. Some organizations hire cheaper talent and expect the same level of work and outcomes of top-quality talent – this is simply not likely. Agility and resilience require organizations to empower employees to make decisions, especially in moments of crisis so it stands to reason then that you would only trust the most competent to make decisions on behalf of your organization. Agility and resilience also require "competent failure" or failure that stems from a strong process. What do we mean by that? What we are discussing here is failure where the results may not have ended up being what was expected but the process used to design the experiment was sound and used the best available information at the time. As a result

of this type of failure, we learn something new that we can then leverage in the future. That is what we refer to as "competent failure". "Competent failure" has little room for failure that results from inattention, incompetence or both; and, both of these are likely to be present when weak talent is present.

The second is related to the barrier of lean operations. Lean operations methodologies encourage the use of temporary and part-time talent so avoid overhead expenses and excess capacity. To facilitate the contingent workforce, we increasingly design jobs that require few skills so they are low paid (Martin, 2019). This approach has three main problems:

1. It externalizes the cost of labour to social systems (where there are social systems): A cheap labor model is incredibly expensive – maybe not for the business but for the taxpayers. In his article The High Price of Efficiency, Martin illustrates this dynamic using Walmart as an example. He specifically calls out a US Congressional study that examined the impact of a 200-employee Walmart store on a community and "it turns out that each employee costs taxpayers $2,759 annually (in 2018 US dollars) for benefits necessitated by the low wages, such as food and energy subsidies, housing and health care assistance, and federal tax credits. With 11,000 stores and 2.3 million employees, the company's much-touted labor efficiency carries a hefty price tag indeed."

2. It fundamentally ignores the reality that labour is a productive resource, not just a cost: When we manage labour like a cost, essentially, it becomes one. Capacity is what leads to productivity and when we manage out "excess capacity", we manage out productivity for the sake of reducing the dollar cost of

labour. In The Good Jobs Strategy, Zeynep Ton offers case studies of discount retailers that challenged themselves to design jobs for longer-term productivity. A critical and counterintuitive element of the Good Jobs Strategy? Slack (no, still not the messaging application kind). Building in slack (or extra capacity, if you prefer) enables employees to have time to serve customers in unanticipated yet valuable ways. Extra capacity (also known as redundancy or slack) is a key tactic in managing emergence – things that are unanticipated and unpredictable.

3. Loss of institutional memory and ownership: Employees offer organizations continuity and hold tacit knowledge – they "just know" how to do certain things; the kind of things that wouldn't be obvious without some experience in that job. With a contingent workforce, employees may not even be around long enough to figure out what those "tips and tricks" might be – let alone teach them to someone else. Contingent workforce also misses out on innovation potential that comes from a sense of ownership. When people feel like they 'own' a job, they spend time, thought and effort into making the job better. This drive to "make things better" leads to simplification and innovation that is ultimately good for the business and may lead to profitable innovation.

As part of this research, participants were asked about what strategies they leveraged and happily, a very small percentage of survey participants reported having to lay off, furloughing or letting people go. Some did mention in their open-end written comments however that without the wage subsidy, they may not have had a choice. The challenge with letting people go is that there is conclusive evidence to suggest that downsizing firms are

twice as likely to declare bankruptcy (Zorn et al., 2017 and Joly, 2020). This was true even after controlling for known potential drivers of bankruptcy: size of the organization, changes in market capitalization, prior performance, profitability and trajectory towards bankruptcy, a larger number of employees per sales relative to industry benchmarks and other indicators of financial health. The study also controlled for the percentage of employees downsized in each downsizing event (Zorn et al., 2017).

Where economic efficiency reduces our resilience, "hiring cheaper" reduces our agility, which in turn also reduces our resilience. Whatever the reason for the pressure to hire cheaper, small businesses need to assess the cost against the missed opportunity cost of great talent and great ideas.

Ineffective people management practices
People management is tough. Period. And, unfortunately, it doesn't get easier in a crisis. It does, in fact, get much more difficult. People management can be more of an art than a science, even on the best of days. In a crisis, not only do people managers have to fight their own instincts and manage their own emotions but they also might be called on to help their team members address their emotions and fears as well.

While people are a key source of both agility and resilience, ineffective people management practices have the potential to reduce or remove that potential. More specifically, our faulty thinking and behaviours can be barriers. As mentioned earlier in this study, resilience often requires counterintuitive actions: need to speed up when we want to slow down or the need to let go when we want to hold on... The findings of this study confirm this as well. There were remarkable similarities in how most businesses responded to the mass disruption that COVID produced. There are three people management challenges in particular that need to be examined:

- **People managers are not set up for success**
  There are many reasons why people managers are not set up for success but two key reasons are:

1. People management is often a "side of desk" job: It does not need belabouring just how much people management is not a "side of desk" job. However, most organizations still measure people solely on their business goals. The working assumption here is that people management is just another way to accomplish business goals. This is problematic thinking because it communicates that the organization does not prioritize its employees: "complete your goals and worry about your team's development and well-being when you have time". With "lean operations" in the driver seat, how many of us are likely to have time? In addition, this is indicative of short-term thinking. It may work in the immediate term but over time, it weakens the talent available, or worse, it actively teaches and reinforces maladaptive tendencies. People management requires a very specific skillset and it's one that takes time to develop because it is largely dependent on "soft skills" that we don't have good ways to develop. When we don't measure for good people management, how can we

expect great people management? In fact, when we don't prioritize great people management, how can we expect great talent? Contrary to popular beliefs, great talent is created, not born. Raw talent may exist as a result of genetic factors but even raw talent cannot succeed without the right guidance and the right conditions for success (Scientific American, 2016). Expecting success, without providing the right supports, is unreasonable, illogical and ultimately, unprofitable.

2. We tend to promote people managers based on their technical competence, not their coaching ability: the challenge here is obvious – we promote people managers on technical skills that have little bearing on the people management skills that are required. A related challenge: in most organizations, the only way to "move up" in the organization is to become a people manager. For some people, they might never want to be people managers but most organizations don't offer a career path where people can grow in technical competence without managing people.

- **When the going gets tough, senior management gets tougher**
  Disruption feels a lot like a crisis with a big helping of 'loss of control'. When we feel that we're losing control, most of us do the most reasonable thing we can think of – we try to regain control and impose order. Most often, we do this by tightening the reins, without shortening the distance in the communication network: more check-ins, more scrutiny, more directions given; in short, more micromanaging. In extreme crisis, it can be helpful to shrink the communication network to get a faster response and it can also be very helpful to have more updates, more often. The difficult balance to strike here is trusting people do the right things, at the right times

and coordinating the response efforts. This is especially a barrier to agility and resilience because in a moment of crisis, people want to help (Bregman, 2019). They want to try different things and it is crucial to resilience that they do. I submit to you that, especially in a crisis, the role of people managers and senior leaders is to facilitate self-organization (Esser, 2021) – encourage, empower and support those that raise their hand to take on goal-directed problem solving and, most importantly, know when to get out of their way.

- **The 'chain of command' is (still) a chain**
  There is still very much a mistaken belief that the "right answers" are at the top of the organization. Some answers might be within the C-Suite of the organization but your organization's front line is your strongest asset, especially when a disruption is underway. They are the most in-tune with your organizational environment, the market and the customers. A great example of this is in the U.S. military: even though it is popularly considered one of the most hierarchical organizations, it empowers its front-line soldiers to act based on the local environment (Ghosh and Lee, 1995).

In addition, the chain of command can act as a barrier to self-organization that leads to creative solutions.

07
Research Implications
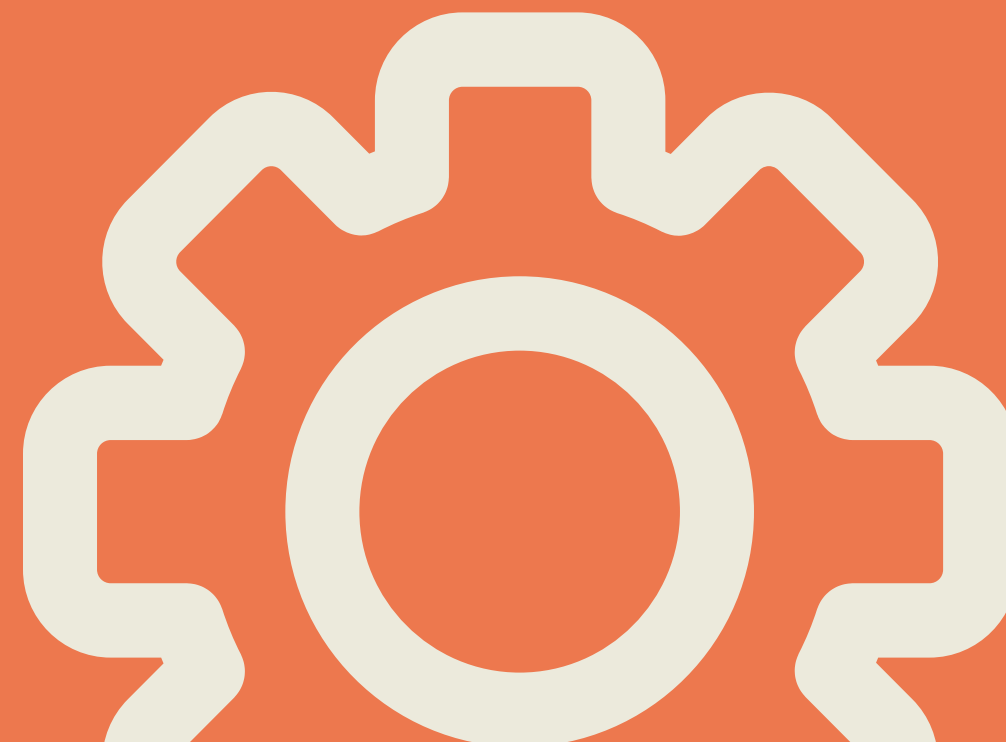
For SMEs

For SMEs, this research is about enhancement and fine-tuning. It is about challenging our assumptions, mindsets and paradigms about things that "always been this way". Much of what we know about organization design or how to create and structure things in an organization is sourced from the Industrial Revolution where our products were simpler, distinct objects. This is no longer the case but we have not adapted well to this reality: we've taken an 'additive' approach when we should have taken a closer look. Is the environment more complex? Let's add more rules, more control, more people. "Adding" abates the symptoms but it misses the cause: our systems are behaving the way they were meant to. We need to change the relationships built-in to our systems to change its behaviour.

The good news is that SMEs already have a resilience advantage compared to their larger business counterparts: due to lower hierarchy, SMEs can mobilize faster. This, of course, is not always the case. It is especially not possible if a SME is not spending the time to scan its environment, as this study found. However, this study also found that Ontario SMEs are creative and full of tenacity and grit: in the face of overwhelming change, SMEs naturally create beneficial adaptations for survival. This study hopes to enable them to not just survive, but to thrive.

The author recognizes that it can be overwhelming, especially for small businesses, to read about yet another set of "things they should do" or "things they need to act on" but the author respectfully submits that that is a sign that it's time to utilize your own resilience: the organization that you are a part of is your community of relationships. If it feels overwhelming to act on these insights, it's time to call in the reinforcements.

A note for SME People Managers
You hold the key to agility and resilience: people. Agility and resilience both reside in our people. To enable it however, the right infrastructure and environment needs to be present. This means that people managers have an incredible privilege and responsibility in any business: to create a working environment where people are willing to bring their "whole selves" to work. People managers are also the key to coaching and development of employees and understand the skills and capabilities present.

Conversely, it is also a privilege and a responsibility to advocate for your own success. For employees to be successful, people managers have to be successful too. This means that people managers should also have access to coaching, development and advice to do their job well. This also means that people management cannot be, and should not be, a "side-of-desk" job. Measurements and supports are a required condition of success.

For Ecosystem Creators and Developers

Canada has a scale-up problem (Financial Post, 2021). Many businesses in Canada never have an opportunity to grow and while there are many contributing factors to this, such as Canada's dispersed population and geography, key contributing factors highlighted by two of our interview participants were:

Mentors and advice: As one participant shared, there aren't enough mentors and advisors to SMEs to begin with but what might be worse is that there aren't enough mentors and advisors who have actually had small business experience or failed at having a small business. As we know, resilience is in relationships. Mentors and advisors not only provide insight but they can also provide their network and resources. Ecosystem creators and developers have the unique opportunity to facilitate connections and leverage alumni of their programs and initiatives to mentor the next generation of small businesses and start-ups.

Risk-averse Canadian culture: the Canadian culture can be conservative and risk-averse (Financial Post, 2021). This means that we don't take enough chances on our businesses: from purchasing their goods and services to investing in them. Naturally, this is a barrier to resilience because "redundancy" helps avoid catastrophic failure.

Governments, Incubators and Accelerators
Governments have the ultimate responsibility to create the landscape for a healthy ecosystem that prioritizes People, Planet and Profit. This means that we need policies and programs that encourage and support our SMEs. This support is especially necessary in times of ecosystem crises (as COVID-19) has been.

Investors and Venture Capitalists
Investors and Venture Capitalists hold an extremely important place in building resilience for SMEs. As key stakeholders and funders of the SME, Investors and Venture Capitalists are enablers of resilience by facilitating connections between SMEs and advisors, and allowing for capacity or "slack" for the organization to balance between "business-as-usual" activities and "future-facing" activities.

In the short-term, this might show up as lower profitability or productivity but in the long-term, this is a better bet, as discussed earlier in the paper. The challenge for investors and venture capitalists is to capture other ways of measuring success. The original Agility and Resilience Maturity Model provides a starting point in creating these new measures of success.

Next Steps

The next step of this study is to experiment and apply the findings to SMEs. All SMEs interested in applying these findings to their business are encouraged to contact the author of the study or simply leverage the findings and share your results broadly. The author notes the following next steps, specifically (in no particular order):

1. Improving the automation and user-friendliness of the Agility and Resilience Maturity Model Excel tool. This may take the shape of another software or program being used. Alternatively, this can also become a web application.
2. Distilling maturity model levels into maturity indicators.
3. Exploring if "teasing out" the maturity model into a 5-point scale facilitates a significant improvement to the framework.

Areas of Further Study

This study is an initial attempt at bringing together the seemingly paradoxical concepts of both agility and resilience. In doing so, an attempt has been made in identifying the elements of both agility and resilience and a maturity framework has been proposed. This work, however, is still in its infancy. To improve on this, the author identifies the following next steps:

- Empirical tests on the elements of agility and resilience, where possible
- Experimenting with different weightings and scoring methods for the Agility and Resilience Maturity Model.

- Industry-specific understanding developed by applying the Maturity Model at different SMEs
- Leveraging the Resilience Maturity Framework to create metrics and measures of success for SMEs and Ecosystem Creators and Developers.

Conclusion

The study of agility and resilience in organizations is not new and the study of agility and resilience, in general, certainly is not new. In addition, there is much written about the topic. However, both topics are still in their infancy when it comes to clarity of the concepts for "real-world" application. Clarity in how the concepts interact is perhaps even more opaque. In the author's opinion, this opacity has generally led to imprecise application and mixed results, as extrapolated from the lack of case studies that might indicate otherwise.

In writing this paper, the author made an initial attempt at: first, clarifying, "dimensional-izing" and setting boundaries to the concepts of both agility and resilience, which are large and potentially vague for most people. Secondly, this paper investigated what the elements of both agility and resilience might be and; thirdly, this paper then offered an original maturity framework for organizations based on the seven elements. This framework can help organizations understand what agility and resilience might "look and feel like" when operationalized and how to get there.

Small businesses help our communities thrive: they offer us protection from systemic and catastrophic failure; and, they are interwoven into the fabric of our communities. When SMEs thrive, so do our communities.

Appendix A

APPENDIX A: SEMI-STRUCTURED INTERVIEW GUIDE

INTRODUCTIONS

CONFIDENTIALITY AND CONSENT FORMS
Reminder of terms of consent and rights of participant
Any questions or concerns

Student Investigator: Thanks for taking the time to chat with me today. I know it must be a busy time but that's partly why I'm interested in speaking with you today. COVID-19 has been devastating for many businesses, especially small- and medium-sized businesses and it is just one of the many disruptions a business might face, especially in the coming years. I want to help SMBs thrive in times of disruption. To do that, we will need to understand what it's like to work in a SMB under disrupting conditions, so that we can identify what might help or hurt a business' ability to respond to a crisis with speed.

So, let's get started.

- How long have you been a part of your company?
- What interested you about...(industry or company)
- When did you realize that a crisis is at hand?
- What was your first reaction?
- What was the company's reaction?
- So, how have the past few months been for your business?
- What were the biggest challenges and opportunities?
- What steps did you take to address your biggest challenges and opportunities?
- What helped? What made it worse?
- What was the response of others like?
- Your reports?
- Your managers?
- Your competitors?
- In recent years, there have been so many other sources of disruption: a new technology, product, platform,or business model; a better supply-chain etc... Has your business faced any other types of disruption?
- Product

- Platform
- Technology
- Business model
- Supply-chain
- "Acts of God"/Force Majeure i.e. floods, fires, severe weather, pandemics (COVID, SARS, MERS, Ebola)
- Severity of disruption?
- Can you tell me more about these other disruptions?
- what it was and how it came about?
- ...and what was it like for you?
- What was your first reaction?
- What were the biggest challenges and opportunities?
- What steps did they take?
- What helped? What made it worse?
- What was the response like? Theory vs reality
- How did you adapt?
- Tell me more about how you got to your eventual solution

Thanks again for your time. This has been incredibly helpful and interesting. As you know, this was recorded to allow me to more accurately transcribe our conversation so that I can better reflect your insights into the project. I will share my transcribed notes for your records.

Results of this study will be published and viewable at any time through the database of published MRPs (http://openresearch.ocadu.ca/view/divisions/sch=5Fgs=5Fsfi/) once the project has concluded and the MRP is published (expected January 2021). The report will discuss elements of agility and resilience which is expected to be beneficial knowledge in navigating businesses through disruption.

In addition to the final report, results from this research may be published in reports, professional and scholarly journals, other students' theses, and/or in presentations at conferences. In any publication, data will be presented only in aggregate forms. Quotations from interviews will not be attributed to you without your prior written permission.

Appendix B

APPENDIX B: A COPY OF THE SURVEY QUESTIONS

QUESTION STEM	ANSWER CHOICES	
Thanks for taking the time to lend your knowledge in helping us understand how Small and Medium Enterprises (SMEs) stay resilient and agile during times of disruption --that they not just adapt, but adapt fast. Why?COVID-19 has been devastating for many businesses, especially small-and medium-sized enterprises (SMEs) and it is just one of the many disruptions a business might face, especially in the coming years. Our research aims to help these businesses be more resilient and even thrive in times of disruption. To do that, we need to understand how an SME reacts to a disruption and identify the types of things that might help or hurt the business' ability to respond to a crisis with speed. That's where your insight makes all the difference! This survey should take no more than 10 minutes of your time to complete. The results of this study will contribute to a Major Research Project (MRP) in partial fulfillment of the requirements for a Masters of Design in Strategic Foresight and Innovation degree. Results of this study will be published and viewable at any time through OCAD University's repository of published MRPs (http://openresearch.ocadu.ca/view/divisions/sch=5Fgs=5Fsfi/) once the project has concluded (expected January 2021). Please note: all your responses are anonymous, so please don't include any personally identifiable information in your responses. We will analyze and report data in aggregate. We are interested in looking at the patterns that might emerge when we look at the responses together.Data collected during this study will be stored on a secure cloud drive only accessible by the Student Investigator and Faculty Advisor. Data will be kept until the completion of the MRP after which time it will be permanently deleted. VOLUNTARY PARTICIPATIONParticipation in this study is voluntary. If you wish, you may decline to answer any questions or participate in any component of the study. If you have any questions or concerns, please email ayesha.zubair@student.ocadu.ca. This study has been reviewed and received ethics clearance through the Research Ethics Board at OCAD University (File # 101843). If you have questions regarding your rights as a participant in this study please contact: Research Ethics Board c/o Office of the Vice President, Research and InnovationOCAD University100 McCaul Street, Toronto, M5T1W1416 977 6000 x4368research@ocadu.caIf you agree with the above terms please click the "I agree" checkbox to gain access to the questions. Please note that by checking off "I agree" you are giving consent to the researchers to utilize your responses for the sole purposes of this project. Ready to add your voice to help small and medium enterprises (SMEs) thrive? Let's get started!	I agree	
	I do not agree	
Are you a current owner of, or an employee of, a Small or Medium Enterprise (SME)?	Yes	No
Have you worked at, or owned, a Small and Medium Enterprise (SME) for at least 2 years?	Yes	No
Company name (optional)	Open-Ended Response	
Is your business, or your business' main office (HQ), located in Ontario?	Yes	No
If applicable, please share the name of the town or city in Ontario that your business is located in	Open-Ended Response	

QUESTION STEM	ANSWER CHOICES
How long have you been a part of, or owned, your company?	less than 2 years **DISQUALIFYING ANSWER
	2-4 years
	5-9 years
	10-19 years
	more than 20 years
Which industry does your business operate in?	Agriculture
	Forestry, fishing, mining, quarrying, and oil and gas extraction
	Utilities
	Construction
	Manufacturing
	Wholesale and retail trade
	Transportation and warehousing
	Finance, insurance, real estate and leasing
	Professional, scientific and technical services
	Business, building and other support services
	Educational services
	Health care and social assistance
	Information, culture and recreation
	Accommodation and food services
	Other services (except public administration)
How many employees does your business have?	1–4 employees
	5–9 employees
	10–19 employees
	20–49 employees
	50–99 employees
	100–199 employees
	200–499 employees
	500 employees or more

QUESTION STEM	ANSWER CHOICES	
What is the approximate revenue of the SME that you have selected for this survey?	Open-Ended Response	
Disruption is a reality of the business environment today. How would you categorize the type(s) of disruption your business has faced? Please select all that apply to your instance of disruption.	Product	
	Platform	
	Technology	
	Business model	
	Supply-chain	
	"Acts of God"/Force Majeure i.e. floods, fires, severe weather, pandemics (COVID, SARS, MERS, Ebola)	
	Other (please specify)	
Please rate the severity of disruption:	None at all	
	A little	
	A moderate amount	
	A lot	
	A great deal	
OPTIONAL: Please share a little more about your experience with disruption.	Open-Ended Response	
BRANCHING LOGIC QUESTION: In what capacity are you involved in a small or medium business?	Owner, Leader or Executive	
	Manager	
	Front-line Employee	

OWNER, LEADER OR EXECUTIVE		
Does your organization have the talent it needs to achieve its vision and mission?	Yes	No
	Other (please specify)	
Do you feel supported at work?	Never	
	Rarely	
	Sometimes	
	Usually	
	Always	
What were some of the early indications that your business may experience challenges? Please select all that apply.	Drop in profit	
	Difficulty sourcing materials or services	
	Reduction in customer demand	
	Other (please specify)	

QUESTION STEM	ANSWER CHOICES
Did you communicate the early indications of disruptions with	Your Senior Management Team? - Yes
	Your Senior Management Team? - No
	Your front-line employees? - Yes
	Your front-line employees? - No
	Your suppliers? - Yes
	Your suppliers? - No
	Your customers? - Yes
	Your customers? - No
	Other (please specify)
What were some of the key considerations that helped shape your communications with your employees?	Open-Ended Response
Is there anything else you would like to share about the communications you might have sent as your organization recognized the disruption?	Open-Ended Response
What immediate actions (within 6 months) did the business take to ensure the survival of the business? Please select all that apply.	Operate remotely
	Take on debt
	Owner took a pay-cut
	Lay-off or furlough workers
	Reduce product or service offerings
	Other (please specify)
Please take a moment to describe some of the immediate actions (within 6 months) that the business took to preserve operations.	Open-Ended Response
What helped you decide what immediate steps to take?	Open-Ended Response
What were some of the things that made it possible for you to take those immediate actions? Please select all that apply.	Your finances
	Your employees
	Your operations
	Your customers
	Other (please specify)

QUESTION STEM	ANSWER CHOICES	
What actions did your business decide on to recover from your disruption? Please select all that apply.	Retooling or shifting product/service offering	
	Reduction in service/product offerings	
	Finding efficiencies in current process	
	New suppliers	
	Outsourcing processes	
	Sourcing better technology or automation	
	Other (please specify)	
How long did it take you to determine your "new normal"? What helped you get there?	Open-Ended Response	
What were some of the things that helped or hindered the speed with which you made your decisions about the new normal?	Open-Ended Response	
What were some of the things that helped you make decisions quickly as you planned your "new normal"?	Open-Ended Response	
Did the immediate actions that your business decided on help you move towards the "new normal"?	Not at all	
	A little	
	A moderate amount	
	A lot	
	A great deal	
Please share more about how the immediate actions of your business after disruption might have helped or hindered your transition to the "new normal".	Open-Ended Response	
Thinking back, what were some of the actions that your business took early in the disruption that were helpful in your business' recovery?	Open-Ended Response	
Thinking back, what were some of the actions that your business took early in the disruption that were harmful in your business' recovery?	Open-Ended Response	
Thinking back, are there things you might do differently now?	Yes	No
What might you do differently now?	Open-Ended Response	

QUESTION STEM	ANSWER CHOICES	
Is there anything else that you would like to share with us that we may have missed?	Open-Ended Response	
Manager		
Does your leadership inspire you to achieve your best?	Not at all	
	A little	
	A moderate amount	
	A lot	
	A great deal	
Do you receive the professional development you need to achieve your best performance?	Not at all	
	A little	
	A moderate amount	
	A lot	
	A great deal	
Do you feel supported at work?	Not at all	
	A little	
	A moderate amount	
	A lot	
	A great deal	
What were some of the early indications that your business may experience challenges? Please select all that apply.	Drop in profit	
	Difficulty sourcing materials or services	
	Reduction in customer demand	
	Other (please specify)	
Did you receive any communications from your leadership about this disruption?	Yes	No
Thinking about the communications that you received, how would you rate:	The clarity of the communication - Very strong	
	The clarity of the communication - Strong	
	The clarity of the communication - Neither strong nor weak	
	The clarity of the communication - Weak	
	The clarity of the communication - Very weak	
	The clarity of the communication - N/A	

QUESTION STEM	ANSWER CHOICES
	The timeliness - Very strong
	The timeliness - Strong
	The timeliness - Neither strong nor weak
	The timeliness - Weak
	The timeliness - Very weak
	The timeliness - N/A
	The thoroughness - Very strong
	The thoroughness - Strong
	The thoroughness - Neither strong nor weak
	The thoroughness - Weak
	The thoroughness - Very weak
	The thoroughness - N/A
	The helpfulness - Very strong
	The helpfulness - Strong
	The helpfulness - Neither strong nor weak
	The helpfulness - Weak
	The helpfulness - Very weak
	The helpfulness - N/A
Is there anything else you would like to share about the communications you might have received as your organization recognized the disruption?	Open-Ended Response
	Operate remotely
	Take on debt
	Owner took a pay-cut
What immediate actions did the business take to ensure the survival of the business? Please select all that apply.	Lay-off or furlough workers
	Reduce product or service offerings
	Other (please specify)
Please take a moment to describe some of the immediate actions (within 6 months) that the business took to preserve operations.	Open-Ended Response

QUESTION STEM	ANSWER CHOICES
How did the immediate actions that the business took impact you? Please select all that apply	My work hours were reduced
	My performance bonus was cancelled
	My job changed
	I was temporarily laid off
	Other (please specify)
Were you involved in deciding what immediate actions (within 6 months) the business will be taking in response to the disruption?	Yes
	No, but I was aware of what the decision was
	Not, not at all
How were you involved in helping decide the business' immediate steps?	Leadership reached out to me personally
	I provided analyses or information that helped leadership determine next steps
	Leadership sent out a survey or a poll
	Other (please specify)
What actions did your business decide on to recover from the disruption? Please select all that apply	Retooling or shifting product/service offering
	Reduction in service/product offerings
	Finding efficiencies in current process
	New suppliers
	Outsourcing processes
	Sourcing better technology or automation
	Other (please specify)
How long did it take you to determine your "new normal"? What helped you get there?	Open-Ended Response
What were some of the things that helped or hindered the speed with which you made your decisions about the new normal?	Open-Ended Response
What were some of the things that helped you make decisions quickly as you planned your "new normal"?	Open-Ended Response

QUESTION STEM	ANSWER CHOICES	
Did the immediate actions that your business decided on help you move towards the "new normal"?	Not at all	
	A little	
	A moderate amount	
	A lot	
	A great deal	
Please share more about how the immediate actions of your business after disruption might have helped or hindered your transition to the "new normal".	Open-Ended Response	
Thinking back, what were some of the actions that your business took early in the disruption that were helpful in your business' recovery?	Open-Ended Response	
Thinking back, what were some of the actions that your business took early in the disruption that were harmful in your business' recovery?	Open-Ended Response	
Thinking back, are there things you might do differently now?	Yes	No
What might you do differently now?	Open-Ended Response	
Is there anything else you might want to share with us that we may have missed?	Open-Ended Response	
Does your leadership inspire you to achieve your best?	Not at all	
	A little	
	A moderate amount	
	A lot	
	A great deal	
Do you receive the professional development you need to achieve your best performance?	Not at all	
	A little	
	A moderate amount	
	A lot	
	A great deal	
Do you feel supported at work?	Not at all	
	A little	
	A moderate amount	
	A lot	
	A great deal	

QUESTION STEM	ANSWER CHOICES	
What were some of the early indications that your business may experience challenges? Please select all that apply.	Drop in profit	
	Difficulty sourcing raw materials	
	Reduction in customer demand	
	Other (please specify)	
Did you receive any communications from your leadership about this disruption?	Yes	No
Thinking about the communications that you received, how would you rate:	The clarity of the communication - Very strong	
	The clarity of the communication - Strong	
	The clarity of the communication - Neither strong nor weak	
	The clarity of the communication - Weak	
	The clarity of the communication - Very weak	
	The clarity of the communication - N/A	
	The timeliness - Very strong	
	The timeliness - Strong	
	The timeliness - Neither strong nor weak	
	The timeliness - Weak	
	The timeliness - Very weak	
	The timeliness - N/A	
	The thoroughness - Very strong	
	The thoroughness - Strong	
	The thoroughness - Neither strong nor weak	
	The thoroughness - Weak	
	The thoroughness - Very weak	
	The thoroughness - N/A	
	The helpfulness - Very strong	
	The helpfulness - Strong	

QUESTION STEM	ANSWER CHOICES
	The helpfulness - Neither strong nor weak
	The helpfulness - Weak
	The helpfulness - Very weak
	The helpfulness - N/A
Is there anything else you would like to share about the communications you might have sent as your organization recognized the disruption?	Open-Ended Response

Front-Line Employee	
	Operate remotely
	Take on debt
	Owner took a pay-cut
What immediate actions did the business take to ensure the survival of the business? Please select all that apply.	Lay-off or furlough workers
	Reduce product or service offerings
	Other (please specify)
Please take a moment to describe some of the immediate actions (within 6 months) that the business took to preserve operations.	Open-Ended Response
	My work hours were reduced
	My performance bonus was cancelled
How did the immediate actions that the business took impact you? Please select all that apply.	My job changed
	I was temporarily laid off
	Other (please specify)
	Yes
Were you involved in deciding what immediate actions the business will be taking in response to the disruption?	No, but I was aware of what the decision was
	Not, not at all
	Leadership reached out to me personally
How were you involved in helping decide the business' immediate steps?	I provided analyses or information that helped leadership determine next steps
	Leadership sent out a survey or a poll
	Other (please specify)

QUESTION STEM	ANSWER CHOICES	
	Retooling or shifting product/ service offering	
	Reduction in service/product offerings	
	Finding efficiencies in current process	
What actions did your business decide on to recover from your disruption? Please select all that apply.	New suppliers	
	Outsourcing processes	
	Sourcing better technology or automation	
	Other (please specify)	
How long did it take you to determine your "new normal"?	Open-Ended Response	
What were some of the things that helped or hindered the speed with which you made your decisions about the new normal?	Open-Ended Response	
What were some of the things that helped you make decisions quickly as you planned your "new normal"?	Open-Ended Response	
	Not at all	
	A little	
Did the immediate actions that your business decided on help your move to the "new normal"?	A moderate amount	
	A lot	
	A great deal	
Please share more about how the immediate actions of your business after disruption might have helped or hindered your transition to the "new normal".	Open-Ended Response	
Thinking back, what were some of the actions that your business took early in the disruption that were helpful in your business' recovery?	Open-Ended Response	
Thinking back, what were some of the actions that your business took early in the disruption that were harmful in your business' recovery?	Open-Ended Response	
Thinking back, are there things you might do differently now?	Yes	No
Is there anything else that you would like to share with us that we may have missed?	Open-Ended Response	

Appendix C

APPENDIX C: Skills Taxonomy Framework for an agile and resilient workforce

ENABLES: PREPAREDNESS (Cultural, Strategic), LEADERSHIP

WHAT IS IT?
This paper offers an original framework of select skills that are linked to both agility and resilience, based on the incredible skills classification being conducted by the Government of Canada on the Skills Taxonomy (National Occupational Classification, 2021). There is first, a categorization and classification of the skills required for agility and resilience and which element of agility and resilience they enable followed by discussions of some of the key foundational and functional skills and their importance to agility and resilience. The skills are:

Type of Skill	Skill(s)	Enables the agility and resilience's element of
Fundemental	Literacy	All
	Numeracy	All
	Social skills	All
	...	...
Foundational	Self-awareness	All (especially Rest, Belonging and Trust, Preparedness and Purpose)
	Empathy	All (especially Trust)
	Creativity	All (especially Exploration, Exploitation and Improvisation and, Rest)
	Improvisation	Exploration and Exploitation
	Communication (written/oral)	All, equally
	Systems Thinking	All (especially Preparedness and Support Systems)
	Paradoxical Thinking	All (especially Preparedness and Exploration, Exploitation and Improvisation)
	Relationship/Stakeholder Management	All (especially Support Systems, Preparedness, Belonging and Trust and Purpose)
	Conflict Resolution	All (especially Trust and Support Systems)
Functional	Knowledge Managements	Preparedness and to some extent Exploration, Exploitation and Improvisation
	Strategic Foresight	Preparedness, Purpose and Exploration, Exploitation and Improvisation
	Research (Quantitative and Qualitative)	Preparedness, Purpose and Exploration, Exploitation and Improvisation
	HR	Purpose, Support Systems, Rest and Belonging and Trust
	Technology	Preparedness, Support Systems
	Finance	Preparedness, Support Systems and Rest
Technical	For example: Market Research (belongs in Research skills)	Preparedness, Purpose and Exploration, Exploitation and Improvisation
	For example: Coaching (belongs in HR)	Purpose, Support Systems, Rest and Belonging and Trust
	For example: UX/UI (belongs in Technology)	Preparedness, Support Systems
	For example: Scenario Planning (belongs in Strategic Foresight and Finance)	Preparedness, Support Systems, Rest, Purpose and Exploration, Exploitation and Improvisation

WHY IS IT IMPORTANT TO AGILITY AND RESILIENCE?

People are the key to both agility and resilience. To enable agility and resilience, we first have to ensure we have the right people, with the right skills, in place. Of course, that alone is not sufficient to unleash their potential, the right support systems have to be in place as well but it's a good start. The objective is to set people up for success. The skills proposed below offer a set of capabilities, based on evidence in literature, that can aid in enabling agility and resilience. This framework, in its current form in this paper, does not propose all of the skills you should have in your organization of course; it proposes just the skills linked to agility and resilience. This framework however, can be used in any organization to assess skills in place vs. skills necessary for the organization to succeed.

HOW TO USE THE SKILLS FRAMEWORK:
We can adapt the Skills Taxonomy of the National Occupational Classification of the Government of Canada, in the following way to help us think about how to classify the emerging agility and resilience skills. These skills are considered complementary and even supplementary to the skillset that your organization may already have in place:

- Fundamental skills are skills that we learn in primary and secondary school. They are skills such as literacy and numeracy. Most, if not all, jobs require some level of these skills.

- Foundational resilience skills can be thought of as transferable skills that can, and should, exist in all employees. These are skills that are industry-agnostic and worth encouraging across the industries and organizations.

Often, these are "soft skills" that are hard to develop and can aid the development of functional and technical skills. These should be actively developed at every opportunity through a mixture of micro-skilling, upskilling, coaching and work-integrated learning.

- Functional resilience skills may not exist together in one individual. These are skills that are usually knowledge-based and require some level of training. It is usually these skills that require more fulsome reskilling interventions when jobs are automated.

- Technical* resilience skills did not emerge through the data collected in this study. This is partially also because this study is industry-agnostic while technical resilience skills tend to be industry, company and job-specific and usually nested under functional skills. Generally, these skills can be built through upskilling or microskilling initiatives.

*Important note: this study distinguishes 'technical skills' and 'technological technical skills' (i.e. Java, React etc). Technological technical skills are a type of technical skill.
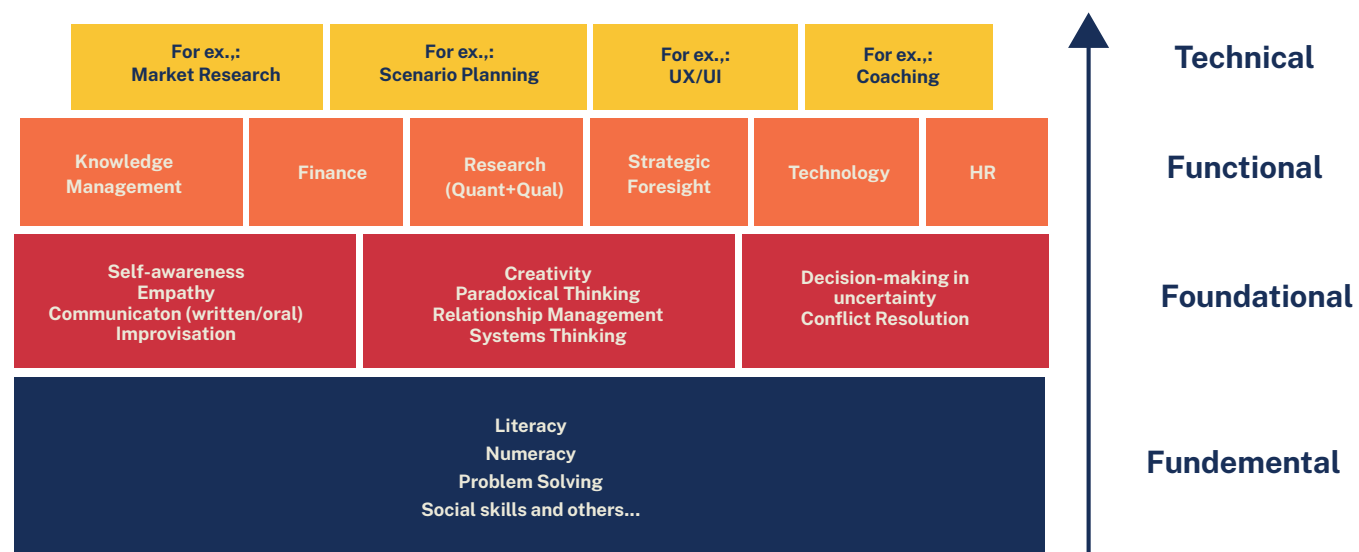
Figure 11: The Agility and Resilience Skills Taxonomy Framework.

The framework levels (bottom to top): Fundemental, Foundational, Functional, Technical.

- **Technical** — For ex.,: Market Research | For ex.,: Scenario Planning | For ex.,: UX/UI | For ex.,: Coaching
- **Functional** — Knowledge Management | Finance | Research (Quant+Qual) | Strategic Foresight | Technology | HR
- **Foundational** — Self-awareness, Empathy, Communicaton (written/oral), Improvisation | Creativity, Paradoxical Thinking, Relationship Management, Systems Thinking | Decision-making in uncertainty, Conflict Resolution
- **Fundemental** — Literacy, Numeracy, Problem Solving, Social skills and others…

WHEN TO USE THIS:

- When creating a "skills inventory" of your organization (before hiring new talent): It is often worth taking the time to understand what skills you might already have in your organization. The great thing about people is that we can often have skills beyond what we're hired to do and during times of disruption, those "hidden" skills can make all the difference. Of course, the effort to constantly catalogue skills over time might not be worth the effort but the exercise, at least once, can lead to worthwhile insights, especially for high-growth firms.

- When hiring new talent: These skills are best used when trying to take "inventory" of the skills you might need to hire. Of course, this "inventory" does not need to be formal especially if your organization is 4 people or less but it is still worth a conversation. Formalizing some of these things earlier can really make the difference, especially if you hit a fast-growth stage when there might not be enough time to do some of these deeper thinking.

- In developing existing talent: This can also be used as a framework for development plans for your employees. Depending on their positions, people managers can work with their employees to pick a few of the foundational and/or functional skills and create their development plan for the year.

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