Continuity Under Constraint: Evidence-Based Business Continuity Practices for Resource-Limited Organizations

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Abstract

Much business continuity guidance assumes specialist staff, formal standards and budgets for redundancy. Resource-limited organisations, including small firms, community enterprises and lean regional operators, face the same disruptions with far less slack. This conceptual paper asks which continuity practices the empirical literature on business disruption and recovery supports most strongly, and how an organisation with limited resources should prioritise them. It draws on Herbane's history of business continuity management; on studies of business recovery after the Northridge earthquake, Hurricane Katrina, the London 2011 riots and the Christchurch earthquakes; on Kendra and Wachtendorf's account of how New York City's emergency operations function was reconstituted after its facility was destroyed; and on reviews of resilience and crisis research. Several findings challenge conventional advice, notably evidence from post-Katrina New Orleans that measures within management's control mattered less to performance than the dispersal of customers and staff. The paper proposes a constrained-continuity framework organised around three priorities: protecting the relationships that generate revenue and work, securing liquidity before disruption and designing continuity around functions rather than facilities. Six propositions address customer and workforce continuity, pre-arranged liquidity, function-based design, change capability, proactive posture and evidence-weighted selection of practices. No original empirical data are presented.

Keywords: business continuity management; resource-limited organisations; disaster recovery; small business; organisational resilience

Introduction

A regional food processor loses power for four days. A family-owned retailer's premises are damaged in civil unrest. A twelve-person engineering consultancy finds that half its staff cannot reach the office after a storm. In each case, the organisation must keep serving customers, paying people and meeting obligations with whatever it has left. Large organisations facing similar events can draw on alternate sites, standby systems and dedicated continuity teams. Resource-limited organisations often cannot. They must decide which continuity measures to adopt with little money, little time and no specialist staff.

In the author's reading, much of the guidance available to them reflects practice in large organisations. It commonly recommends a business impact analysis, a written continuity plan, alternate arrangements for premises and technology, and regular testing. These recommendations are reasonable in principle. The difficulty is that a resource-limited organisation cannot do all of them well, and the guidance rarely says which matter most. The question this paper addresses is therefore one of priority: given what research on disruption and recovery has found, which continuity practices deserve a resource-limited organisation's scarce attention first?

The paper approaches that question by reviewing studies that examined what actually affected organisations' recovery after real disruptions. Some of these findings are uncomfortable for conventional continuity advice. A study of surviving New Orleans organisations after Hurricane Katrina found that preparation within management's control mattered less to performance than the loss of customers and staff (Corey & Deitch, 2011), and a study of firms after the Northridge earthquake questioned whether post-disaster aid helped recovery at all (Dahlhamer & Tierney, 1998). Both are examined in detail below. Findings of this kind do not mean that planning is worthless. They do suggest that the content of continuity effort matters more than its form, and that some of the most consequential risks lie in relationships and finances rather than in buildings and equipment.

The paper makes three contributions. First, it assembles evidence from studies of real disruptions into a set of priorities for organisations with limited resources. Second, it proposes a constrained-continuity framework that organises those priorities. Third, it states six propositions for future empirical work. The paper is conceptual and reports no original data; its claims about cited studies are limited to what those studies report.

Literature Review

The origins of business continuity management

Herbane (2010) traces the development of business continuity management as a form of crisis management that has evolved since the 1970s in response to technical and operational risks

threatening an organisation's recovery from hazards and interruptions. His historical review identifies three distinct phases of management practice and four phases in the development of drivers, meaning legislation, regulations and standards requiring organisations to carry out specific continuity activities. He finds that events have influenced governance, that influence has become international and that organisational resilience has emerged as what he terms a meta-institution.

This history helps explain why continuity guidance can fit resource-limited organisations poorly. Practices that grew in response to technical and operational risk in organisations subject to regulation and standards carry assumptions about scale and specialist capacity. The challenge for smaller organisations is not to reject that body of practice but to select from it.

What predicted recovery after real disruptions

Dahlhamer and Tierney (1998) developed and tested a model of business recovery using a stratified random sample of 1,110 Los Angeles area firms affected by the 1994 Northridge earthquake. Business size, disruption of business operations due to the earthquake, earthquake shaking intensity and the use of external post-disaster aid all predicted recovery. Size helped businesses weather disaster losses, as it does in non-disaster contexts. The authors conclude that how businesses fare depends not only on direct physical impacts but also on how disasters subsequently affect business operations, and on ecological and neighbourhood-level impacts. They also report that aid available to businesses did not appear to help them recover and might create additional problems, such as higher debt.

Corey and Deitch (2011) examined factors contributing to business recovery six to eight months after Hurricane Katrina. Managers from 183 surviving organisations in the Greater New Orleans area rated their storm preparation, storm damage, the severity of storm-related problems and organisational performance. Factors under management's control, including having an emergency response plan, storm preparation and effective staff communication, had no real impact on organisational performance. Storm damage and post-disaster problems were significant negative predictors, and complications arising from extreme population dislocation, specifically loss of customer base and staffing issues, had the greatest impact.

Two cautions apply to these findings. First, Corey and Deitch studied surviving organisations, so their data cannot show whether planning affected the probability of survival itself. Second, both studies examine single large natural disasters in particular American cities. Nonetheless, both point in the same direction: the disruption of operations, customers, staff and finances after the event, rather than the physical damage alone, shaped recovery.

Losses beyond the physical

Doern (2016) examined the experiences of small businesses directly affected by looting, vandalism or arson during the London 2011 riots, using a phenomenological approach and

qualitative interviews. The study highlights the different types of losses that small businesses encountered following the crisis and the role that individual owner-managers, businesses and the wider community played in enhancing or minimising those losses. Doern develops a model of the factors that influenced which small businesses were vulnerable or resilient to the riots.

The value of this study for the present argument lies in its attention to the range of losses a crisis produces and to the community's role in shaping them. A continuity approach that considers only damage to premises and stock will miss much of what determines whether a small business recovers.

Continuity without the facility

Kendra and Wachtendorf (2003) examined the reconstitution of New York City's Emergency Operations Centre after its destruction in the World Trade Center attack. Although the physical facility was destroyed, the organisation established to manage crises continued, enabling a response that drew on the resources of the city, neighbouring communities, states and the federal government. The authors identify several contributing factors: the availability of resources, which substituted for redundancy of personnel, equipment and space; pre-existing relationships that eased communication challenges; and the continuation of organisational patterns of response integration and role assignments.

The case is a public emergency management function rather than a business, and the scale of resources involved far exceeds anything available to a small organisation. Its relevance lies in the distinction it draws between a facility and the organisation that uses it. When the patterns of role assignment and coordination persisted, the function could be rebuilt elsewhere.

Capabilities for adapting

Ates and Bititci (2011) studied change management in small and medium-sized enterprises through semi-structured interviews with 232 senior managers in 37 manufacturing firms across Europe. They argue that change management process capability is fundamental to creating resilience in such firms, and that sustainability and resilience are enhanced by embracing organisational and people dimensions as well as operational aspects of change, and by paying attention to long-term planning and external communication to drive change proactively.

Battisti and Deakins (2017) used survey evidence from 545 small firms affected by the 2010 and 2011 Christchurch earthquakes in New Zealand to examine the relationship between dynamic capabilities, disaster-related changes to the firm's resource base and performance. Their results highlight the importance of a firm's proactive posture and its capability to integrate resources in recognising new opportunities in an environment of high volatility and uncertainty.

Together, these studies suggest that continuity is not only about returning to the previous state. A disruption can change customers, markets and resources, and organisations able to manage change and integrate resources are better placed to respond to the new situation.

The state of the evidence

Two reviews caution against reading too much into any single study. Linnenluecke (2017), reviewing influential publications among 339 papers, books and book chapters on resilience in business and management research published between 1977 and 2014, identifies five research streams and finds that resilience has been conceptualised quite differently across them, that similarities and differences among the streams have not been explored, and that resilience has been operationalised quite differently, with few insights into how to detect resilience to future adversity. Williams and colleagues (2017) note that research on crisis management and resilience has seen little integration, distinguish work treating crisis as an event from work treating it as a process, and develop an integrative framework around capabilities for durability, organising and adjusting, responding to major disturbances, and a feedback loop from these experiences.

Rose (2004) adds a measurement perspective from economics. He identifies difficulties at the conceptual, operational and empirical levels, including the need to identify resilient actions, some of which may seem to violate established norms such as rational behaviour, and the particular difficulty of gathering data on resilience. These reviews imply that evidence-based continuity practice must be modest: the evidence base is real but uneven, and practitioners should weight practices according to the strength of the evidence behind them.

Conceptual Framework and Propositions

A constrained-continuity framework

The framework proposed here starts from a simple premise: an organisation with limited resources should direct its continuity effort first toward the things whose loss most threatens recovery, as indicated by the available evidence, and only then toward more comprehensive arrangements. On the evidence reviewed above, three priorities stand out.

Priority 1: The relationships that generate revenue and work. In the post-Katrina evidence, the customers and employees an organisation lost weighed most heavily on its performance (Corey & Deitch, 2011), and Doern (2016) highlights the range of losses and the community's role in shaping them. For a resource-limited organisation, continuity begins with being able to reach, serve and retain customers and staff when normal operations are disrupted.

Priority 2: Liquidity secured before the event. The Northridge study's doubts about post-disaster aid, and its mention of higher debt, point to the importance of how and when money is obtained (Dahlhamer & Tierney, 1998). For organisations with thin reserves, the timing and terms of access to money can be as consequential as the amount. Arrangements made before a

disruption, such as reserves, insurance cover appropriate to the organisation's actual exposures and pre-agreed credit, are more controllable than borrowing after the event.

Priority 3: Functions rather than facilities. Kendra and Wachtendorf (2003) show that a function can survive the loss of its facility when organisational patterns of role assignment and coordination persist. For a resource-limited organisation that cannot afford an alternate site, continuity arrangements can be organised around critical functions and the roles that carry them out, with explicit thought about how each function could be performed from somewhere else or by other means.

These priorities are supported by two enabling capabilities: the capability to manage change (Ates & Bititci, 2011) and a proactive posture combined with the ability to integrate resources (Battisti & Deakins, 2017). The framework treats conventional continuity elements, such as written plans and technology recovery arrangements, as means of serving these priorities rather than as ends.

Proposition 1: Customer and workforce continuity

If customer loss and staffing problems have the greatest effect on post-disaster performance, continuity effort directed at protecting those relationships should yield more than effort directed mainly at physical assets. Such effort might include up-to-date ways of contacting customers and staff outside normal channels, arrangements to serve key customers from alternative locations or through partners, and support that helps staff return to work.

Proposition 1. Among resource-limited organisations affected by a major disruption, those whose continuity arrangements prioritise maintaining contact with and service to customers and staff will recover performance more fully than those whose arrangements focus mainly on protecting premises and equipment.

Proposition 2: Pre-arranged liquidity

One interpretation of the Northridge finding on aid is that money obtained after a disaster may come in the form of borrowing that adds to the organisation's burden at the moment it is weakest. Arrangements made in advance can be chosen deliberately and on better terms. This proposition does not claim that aid is harmful in general; it concerns the relative advantage of pre-arranged liquidity for organisations with thin reserves.

Proposition 2. Resource-limited organisations that secure sources of liquidity before a disruption will experience less post-disruption financial strain, measured by additional debt relative to revenue, than comparable organisations that rely mainly on borrowing obtained after the disruption.

Proposition 3: Function-based continuity design

A small organisation may be unable to afford a second site or duplicate equipment. In the New York case, it was the persistence of how people were organised, rather than the building, that allowed the function to continue (Kendra & Wachtendorf, 2003). A continuity design built around functions and roles asks, for each critical activity, who performs it, what they need and where else or how else it could be done. Such a design can be maintained cheaply and does not depend on the survival of a particular building.

Proposition 3. Resource-limited organisations whose continuity arrangements are defined by critical functions and the roles that perform them will restore those functions faster after loss of their premises than organisations whose arrangements are defined mainly by facilities and equipment.

Proposition 4: Change capability as a continuity resource

Continuity is often framed as restoring the previous state. Yet a disruption may permanently alter markets, supply or staffing. Ates and Bititci (2011) argue that change management process capability is fundamental to resilience in small and medium-sized enterprises and emphasise attention to people, long-term planning and external communication. Organisations that already manage change well should be better able to adapt their operations when continuity requires something other than a return to the status quo.

Proposition 4. Among small and medium-sized organisations, established change management capability will be positively associated with the ability to adapt operations after a disruption, beyond the effect of having continuity arrangements in place.

Proposition 5: Proactive posture after disruption

Battisti and Deakins (2017) found that a proactive posture and the capability to integrate resources were important in recognising new opportunities after the Christchurch earthquakes. For resource-limited organisations, the recovery period may bring opportunities as well as losses, such as new customer needs or available premises and staff. Organisations that actively scan for and act on such opportunities may recover not only to their previous position but beyond it.

Proposition 5. After a major disruption, resource-limited organisations with a proactive strategic posture and an established capability to integrate resources will be more likely to identify and act on new opportunities than organisations with a reactive posture.

Proposition 6: Evidence-weighted selection of practices

Linnenluecke (2017) and Rose (2004) both point to the uneven state of resilience measurement and evidence. A generic checklist that treats all recommended practices as similarly important offers no such weighting. An organisation that weights its choices by the strength of evidence

linking each practice to recovery outcomes should obtain more benefit from limited resources, while recognising that the evidence will change.

Proposition 6. Resource-limited organisations that select continuity practices according to evidence on what predicts recovery will achieve better recovery outcomes per unit of continuity spending than organisations that adopt generic continuity checklists in full.

Discussion

What the "no real impact" finding does and does not mean

The post-Katrina result on planning (Corey & Deitch, 2011) is easily misread. It does not show that planning is useless. The study measured the performance of organisations that survived, six to eight months after a catastrophic event marked by extreme population dislocation. Under those conditions, the loss of customers and staff may simply have overwhelmed anything that internal planning could achieve. The finding is better read as a warning about the content of planning. Plans focused on protecting the site and evacuating safely address important matters, but they may do little about the risks that dominated recovery in that setting: the dispersal of the people the organisation served and the people it employed.

Physical damage is not the whole story

The Northridge evidence places operational and neighbourhood effects alongside physical damage as influences on recovery (Dahlhamer & Tierney, 1998). Doern (2016) similarly draws attention to the range of losses small businesses encounter and to the community's role in shaping them. For continuity planning, this widens the questions an organisation should ask. Beyond "what if our building is damaged?", it should ask "what if our customers cannot reach us?", "what if our staff cannot get to work?" and "what if our neighbourhood is disrupted for months?" These are harder questions, but they may be closer to what determines recovery.

Money after the event

The observation that post-disaster aid might increase debt (Dahlhamer & Tierney, 1998) has a practical implication for resource-limited organisations. Where an organisation plans to rely on loans or assistance after a disaster and that assistance comes mainly as additional debt, it may prolong financial strain. Securing liquidity in advance is harder for organisations with thin margins, but even modest steps, such as reviewing insurance against the organisation's actual exposures or establishing a line of credit while operations are normal, may improve the organisation's position.

Function over facility

Kendra and Wachtendorf's (2003) case shows that a function can survive the loss of its home when people know their roles and how to coordinate. The resources available to a city

government were vast, and no small organisation can replicate them. But the principle scales down. A small organisation that has thought through how its critical functions could be performed elsewhere, for example by staff working remotely, by a partner or from temporary premises, has a form of continuity that does not depend on duplicate facilities.

Continuity and change

Continuity management is often described as getting back to normal. The research reviewed here suggests that, after major disruptions, normal may not return. Ates and Bititci (2011) and Battisti and Deakins (2017) point to change capability, proactive posture and resource integration as sources of resilience. For resource-limited organisations, this means that continuity arrangements should leave room for adaptation, and that leaders should be prepared to change what the organisation does as well as how it restores what it did.

Where conventional continuity elements fit

None of this means that the conventional elements of continuity management should be discarded. A business impact analysis, a written plan, arrangements for recovering technology and periodic testing all remain useful. The framework changes their role rather than their existence. For a resource-limited organisation, a business impact analysis becomes the means of identifying which customers, staff roles, functions and cash commitments matter most. A written plan becomes a short record of how those priorities will be protected, readable in minutes by whoever is available. Technology recovery is judged by whether it lets critical functions continue from somewhere other than the usual premises, not by whether it mirrors the arrangements of a larger firm. Testing becomes a way of checking that the organisation can actually reach its customers and staff and gain access to its money when normal channels fail.

Ordering the elements this way has a practical advantage. Herbane (2010) shows that continuity practice has been shaped by legislation, regulations and standards, which in the author's view tend to emphasise documented completeness. A resource-limited organisation that tries to achieve completeness may exhaust its capacity before it reaches the measures that matter most for recovery. Placing the three priorities first, and treating the conventional elements as tools for serving them, is intended to make sure that the most consequential work is done even if the organisation never achieves a comprehensive programme.

Evidence with humility

The evidence reviewed here comes from a handful of events, places and sectors. Linnenluecke (2017) shows that resilience has been conceptualised and operationalised in different ways, and Williams and colleagues (2017) note limited integration between crisis and resilience research. An evidence-based approach to continuity should therefore be modest. It should give more weight to practices supported by studies of real recovery and less to practices adopted mainly

because they appear in standards and templates, while remaining open to revision as evidence accumulates.

Practical Implications for Leaders of Resource-Limited Organizations

The framework suggests the following priorities for leaders with limited resources. They are general observations for organisational planning, not professional advice for any particular organisation.

Start with customers and staff. Leaders can make sure they can reach key customers and all staff through channels that do not depend on the organisation's premises or systems, and can decide in advance how the most important customers would be served during a disruption.

Arrange money before it is needed. Reviewing insurance against the organisation's real exposures, building whatever reserves are feasible and arranging access to credit during normal times may reduce reliance on post-event borrowing.

Map functions, not rooms. For each critical function, leaders can record who performs it, what they need and at least one other way it could be done. This record is cheaper to maintain than a site-based plan and remains useful if the site is lost.

Plan for dispersal, not only damage. Scenarios should include customers moving away, staff being unable to return and the surrounding area being disrupted for an extended period, not only damage to the organisation's own property.

Treat recovery as a time to adapt. After a disruption, leaders can look for new needs, partners and resources rather than aiming only to restore the previous operation.

Weigh advice by its evidence. When choosing among continuity measures, leaders can ask what evidence links each measure to recovery outcomes and give priority to those with the strongest support.

Limitations and Future Research

This paper has several limitations. It is conceptual and presents no original data, and its framework and propositions require empirical testing.

The evidence base is limited. The recovery studies examined particular events: an earthquake in Los Angeles, a hurricane in New Orleans, riots in London and earthquakes in Christchurch. Their findings may not generalise to other hazards, such as cyber incidents or pandemics, or to other economies. Corey and Deitch (2011) studied only surviving organisations, so their findings cannot speak to the role of planning in survival. Some of the studies are qualitative and based on small samples, which supports theory building but not generalisation.

A further limitation concerns the populations studied. The recovery studies examined firms and organisations that were already operating in the affected areas, and most of the evidence describes businesses rather than community enterprises or nonprofit operators, whose funding, governance and obligations to beneficiaries differ. Whether the same priorities hold for those organisations, and whether their reliance on donors or public funding changes the role of liquidity in particular, is an open question.

The framework's priorities are inferred from a limited number of studies, and other priorities might emerge from a broader evidence base. In particular, the relative importance of customers, staff, liquidity and facilities may vary by sector. A professional services firm and a manufacturer, for example, depend on different assets.

The propositions involve outcomes, such as recovery of performance and financial strain, that are difficult to measure consistently. Rose (2004) highlights the difficulty of gathering data on resilience, and Linnenluecke (2017) notes inconsistent operationalisation. Future research could develop consistent measures for resource-limited organisations and test the propositions longitudinally, assessing continuity arrangements before disruptions and tracking outcomes after them.

Future work could also examine which forms of pre-arranged liquidity are realistic for very small organisations, how function-based continuity designs perform in practice, and whether evidence-weighted selection of practices can be made simple enough for organisations without specialist staff.

Conclusion

Resource-limited organisations cannot do everything that business continuity guidance recommends, so they must choose. This paper has argued that their choices should be guided by evidence on what actually affects recovery. Studies of real disruptions suggest that the loss of customers and staff, the effects of disruption on operations and finances, and the wider community's circumstances can matter more than physical damage alone, and that the existence of a plan is no guarantee of better performance. The constrained-continuity framework proposed here directs scarce effort first toward the relationships that generate revenue and work, toward liquidity arranged before the event and toward continuity designed around functions rather than facilities, supported by capabilities for change and a proactive posture. Its six propositions offer a basis for testing whether this ordering of priorities helps resource-limited organisations recover more fully.

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