Extending ‘Toolbox’ of Business Continuity Approaches: Towards Practicing Continuity

Full Paper

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Abstract

As incidents may have devastating effects for organizations’ value creation, preparing for incidents is imperative regardless of organization or the market context. Scholars interested in business continuity have studied ways in which organizations may prepare for the unexpected, and, when realized, respond effectively. Three approaches to continuity are particularly visible in the literature: (1) plans for continuity; (2) technologies for continuity; and (3) social ingenuity for continuity. In addition, a fourth approach has been emerging that underlines the importance of work practices for business continuity. In this research, the fourth approach, ‘practicing continuity’, is extended and developed further as part of the existing ‘toolbox’ of business continuity approaches. The fourth perspective, in contrast to the three other approaches, is found especially fruitful as it focuses on the constitutive interaction of social and material aspects of work. Implications for business continuity are discussed and conclusions drawn.

Keywords

business continuity, continuity planning, incident preparations, practice theory, sociomaterial

Introduction

An organization’s ability to sustain the continuity of its Information Systems (IS) and operations is imperative for value creation. Whether operating in the densely populated and highly competitive ‘red ocean’ or in the fresh, unpopulated and competitor-free ‘blue ocean’ (Kim & Mauborgne, 2004), befalling events may disrupt the organization’s operations and have devastating consequences. That is, while organizations’ strategies may differ in important ways, once they have secured a competitive position in the markets, sustaining that position becomes crucial (Ibid.). However, incidents, in any case, when not successfully anticipated and coped with ‘threaten the strategic goals of organisations’ (Richardson, 1994, p.63). An organizations’ ability to continue operations is thus a precondition for the realization of organization’s long term goals, and, likewise, a threat to the organization’s strategic advantage ‘threatens the continuity of operations over a prolonged period’ (Herbane et al., 2004, p.439). Since such incidents are likely to prevent organizations from enacting their strategies, complacency is not an option.

In a path paved by practitioners (Zsidisin et al., 2005), scholars interested in business continuity (the shorter form ‘continuity’ is used interchangeably) have focused on understanding and improving the preparations for and responses to all types of (harmful) incidents for decades (Herbane, 2010). Because incidents come in many shapes and forms, and may even exhibit idiosyncratic patterns, a common assumption shared by scholars studying business continuity is that certain forms of organizing are likely to be more effective than others to prepare for and confront harmful events. During over 40 years of evolution, the scope of business continuity has evolved from an IT-centric view that emphasized preparing plans for IT system recovery, into a broader organizational scope (Herbane, 2010). The broadened scope meant that the IT system was not the core of the preparations anymore but the organizational functions consisting of complex amalgams of humans, technologies and material ‘things’ that enable the performance of those functions. However, while a consensus on the scope seems to exist amongst scholars
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and practitioners alike, it seems to exist to lesser degree in relation to how to understand and improve the business continuity.

Three approaches to continuity seem to be particularly apparent in the literature and are referred to here as (1) plans for continuity; (2) technologies for continuity; and (3) social ingenuity for continuity. The first approach takes the view that continuity is first and foremost a planning problem improvable by plans; the second takes the view that continuity is a technological problem improvable by more (advanced) technology; and the third holds that continuity is relational to social and cognitive factors of human actors. As such, research across these approaches draws theoretical insights and practical solutions from differing, and perhaps even incongruent, knowledge bases. For example, where some are more likely to delve into the theories of computer sciences and look for advanced technological solutions to find optimal improvements (e.g., Bajgoric (2006)), others turn to social and cognitive theories to look for ways in which the social ingenuity can be enhanced and more effective cognition achieved (e.g., Butler and Gray (2006)). More elaborate discussion of the approaches will be provided below.

In addition to the three aforementioned approaches, a fourth approach has been emerging that has been explicitly addressed by some, and more or less implicitly by few others, but that has remained underdeveloped. The fourth approach, practicing continuity, takes the view that in order to improve and understand continuity it is necessary to improve and understand employees' work practices and routines they enact while working. That is, the central premise is that business continuity arises from what work is done and how is it performed (cf. Butler and Gray (2006)) rather than from any one specific aspect of organizational work. The purpose of this conceptual study is to explore and develop (theoretically/conceptually) this particular approach further. Focusing on the fourth perspective was deemed significant not only because of its immaturity but because it seems an insightful and fruitful way forward – practices are the nexus of people, technologies and 'things' (Schatzki et al., 2001). That is, practices have both material and social dimensions. (Barad, 2007; Orlikowski & Scott, 2008). It should be noted at the outset that it is not the intention of this research to argue for the superiority of this one specific continuity approach but to develop and extend the existing 'toolbox' of continuity approaches further.

The rest of the article proceeds as follows. First, the three prevailing approaches to continuity are introduced successively and some weaknesses in each approach are pointed out. Second, the practicing continuity approach is conceptually developed further to extend the current understanding. Lastly, the contributions of the practicing continuity approach to business continuity are discussed and conclusions are drawn.

Prevailing Approaches to Business continuity

During the course of this chapter, three approaches to understanding and improving continuity are introduced. While the discussions have been multidisciplinary in general, the topic has been one of the central items on many IS security and IS operations scholars' agendas (Siponen & Willison, 2007; Butler & Gray, 2006). The following discussion starts by outlining the continuity plans approach, proceeds with continuity technologies and ends with social ingenuity. As plans, and the related planning methodologies, have been central to the development of business continuity (Herbane, 2010), slightly more space is reserved for them.

Plans for Continuity

Continuity plans have been traditionally viewed as the core of organizational preparations to incidents (Stucke et al., 2008; Herbane, 2010). The plans, optimally, provide prescriptive steps that govern an organization's recovery activities to ensure smooth and prompt recovery after an incident. Initially the plans were specific to an IT system and provided basis for its recovery activities (Herbane, 2010). In practice, they documented the procedural instructions to reinstall an IT system from scratch in order to hasten and ease the task of recovery. The task was relatively straightforward, and easily testable. All that was needed was to install the system, document the procedures, and to afterward reinstall the IT system to verify whether the documented procedure matched the steps required in practice. Thus past experience of installing the IT system could be extrapolated and documented as the procedure for future action in the event that the system would have to be recovered. For instance, if a hard drive would break down, even a novice IT system administrator could follow the documented procedure for successful
recovery. However, often, IT systems seemed to have a will of their own, and despite the relatively straightforward procedure things would not go as documented and would require a degree of *in situ* adjustment. Nevertheless, the plans persisted as a useful way to prepare the organizations for the uncertain future.

While this type of IT recovery plan is still a part of many business continuity plans, the focus has shifted from reactive and passive awaiting of IT system incidents to proactive assessment of incidents at organizational levels. This also implied a shift in scope from preparing for relatively concrete IT breakdowns to all types of organizational discontinuities. Simultaneously, the plans documenting concrete procedures for reinstalling IT systems widened and became what they are today: a complex set of plans for restoring organizational functions by accounting for the tight coupling of IT and organizations. At the core, however, remained the idea of prescriptive plans.

The content of continuity plans should *ideally* cover all possible discontinuities, and not merely the recovery activities but also prevention activities; all events should be anticipated, and none should befall. As Stucke et al. (2008) argued 'organizations should depend on their well-tested plans for recovery and not on ingenuity' (p. 160). Thus, '[i]n this kind of tidy and objectified world improvising is the last thing analysts want to see happening' (Ciborra, 1999, p.87). Any non-preplanned and non-prescriptive action thus marks, at least partial, deficiency in the plans. However, the ideal goal of being prepared for everything is not meant as a sort of naive claim that proponents of planning approach would realistically expect the ideal goal to be fully achievable. Rather, it represents a goal somewhere in the horizon towards which continuity planners seek to move.

To assist in the complex task of preparing the plans, scholars and practitioners alike have introduced various methodologies and models (e.g., Botha and von Solms (2004); Cerullo and Cerullo (2004); Savage (2002) Post and Diltz (1986)). Here, the methodologies and models refer broadly to the type of abstracted steps organizations should take in order to prepare comprehensive and meticulous plans. The aim is to find the optimal steps – or a subset of steps – for the preparation of the plans. The steps, sometimes referred to as 'best practices', such as the international standards, provide abstracted and context independent guidance on planning (Siponen & Willison, 2009). When planning, deviations from the methodologies are seen as likely explanations of impoverished plans and their failure to meet the demands of emerging discontinuity situations.

While each continuity planning methodology is likely to have its nuances, according to Pitt and Goyal (2004) they commonly share six steps (although the naming conventions may vary): (1) project initiation; (2) risk assessment/business impact analysis; (3) design and development of the plans; (4) creation of the plans; (5) testing and exercising; and (6) maintenance and updating (p. 88). In short, the purpose of the steps is to come up with conjectural knowledge of the unknown future that is documented as the continuity plans. The planning itself is seen as largely an isolated and separate activity from 'actual' organizational work. Only at the end of the process of planning, the preventive mechanisms of the plan are implemented and then tested. The preventive mechanisms may take any form from prescriptive procedure (cf. IT recovery above) to improvements in technology, such as the configuration or improvement of IT system backup (Botha & von Solms, 2004).

As the research has focused on the plans and abstracting universal steps for creating plans, it has tended to assume that the actual organizational work practices follow in a rather linear fashion. In other words, 'the details of practice have come to be seen as nonessential, unimportant, and easily developed once the relevant abstractions have been grasped' (Brown & Duguid, 1991, p.40). While any guidance on the creation of plans is likely to be beneficial for practitioners who need to design and implement the plans, it is likely that the adoption of any methodology or model into organizational practices is neither linear nor simple. Indeed, quoting Ciborra (1999), '[p]rocedure and method are just 'dead objects': they get situated in the flow of organizational life only thanks to a melange of human motives and actions' (p. 86). Further, recently Larsen et al. (2012) argued that the adoption of software development methodologies and models proceeds through eight different adoption paths in order to transform from abstractions to organizational practices. Although software development methodologies and models are not the same as continuity planning methodologies and models, the authors' findings may also hold true for business continuity.

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1 Due to space constraints, readers are asked to see the details of each step from Pitt and Goyal (2004)
Lastly, as the focus is on plans, the approach pays little attention to the ways in which those plans themselves become implicated into work; plans that are not used (or usable) have very little intrinsic value.

**Technologies for Continuity**

Technologies (especially IT) have formed the core of one of the approaches to business continuity. For the proponents of the approach ‘IT is recognized as an enabler for continuity’ (Bajgoric, 2006, p.450). However, technologies have had two roles – sometimes overlapping – as either technologies that improve the reliability and availability of an organization’s technological infrastructure or as technologies that are supportive of an organization’s business continuity activities.

In relation to the first role of technology, advanced technologies have been found useful to improve the reliability of technological components embedded in organizational information infrastructures and thus to increase the continuity of those infrastructures and, consequently, the organizational functions they support. For the proponents of technologies, the uncertainty and unreliability of technology is resolvable by implementing more technology that represents later developments in the technological race. In other words, every current technology is merely a penultimate, impoverished technology awaiting for replacement by next generations of technologies. Computer architecture based on 32-bit architecture becomes a source of possible discontinuity, while the next generation 64-bit architecture narrows the gap to reach ‘always on computing’ (Bajgoric, 2006). Similarly, the improvement may complement imperfections in other technological infrastructures such as can be achieved by the installment of Universal Power Supply (UPS) to complement unreliable power infrastructures (Asgary & Mousavi-Jahromi, 2011). That is, in general, these technological improvements are seen as a way to proactively deter, or optimally to prevent altogether, the occurrence of incidents. However, focusing on technologies as proactive measures tells little of what takes place and what should take place when they fail.

In relation to the second role of technology, they are viewed as supportive for organizational activities in preparing for incidents as well as supporting the actual recovery activities. For instance, Van de Walle and Rutkowski (2006), introduced a technology not to improve organization’s technological infrastructure but to improve decision making in continuity related probability assessments. More specifically their technology improves quantifications of incident likelihood and impact in such a way that each user may do their estimations in isolation and then have the average score as the basis for discussion and decision making. Scholars have also recognized the importance of technologies during an incident. Such is the case, for instance, in Sapateiro et al. (2011), who developed a mobile software application designed solely for communications and coordination during an incident. Furthermore, as Sakurai and Kokuryo (2014) suggest, the design of technologies may influence organizational and societal restorations. Especially complex technologies may effectively hinder recovery activities that could be averted with a frugal IS design (Ibid.).

As a summary, what this discussion suggests, is a strong belief in technology that is viewed in a deterministic sense (Leonardi & Barley, 2008) – technologies themselves improve continuity rather than their use. Focusing on the technologies largely fails to recognize that whether and how technologies affect organizing ‘depends on how the technology is designed, the way it is deployed, and how it is used and interpreted in a specific organizational context’ (Barley & Kunda, 2001, p. 79. That is, the technologies overshadow much of the social aspects of organizing.

**Social Ingenuity for Continuity**

In a rather stark contrast to advocates of technologies or plans, some scholars approach continuity as a social concern. This approach underlines the salience of individual and organizational social aspects to confront and cope with incidents in lieu of solution ‘artifacts’ – whether technologies or plans. Central to this approach is that not all events can be probabilistically anticipated and planned/prepared for (Butler & Gray, 2006), but require attentive social actors (see also Rapaport and Kirschenbaum (2008)). Therefore, facilitating effective social and cognitive conditions for human actors forms the core of the research around this approach.

Social ingenuity refers broadly to the individual and group level behavior (and the antecedents of that behavior) that has an impact on the preparedness and response to incidents. While some have focused on
suggesting social factors that influence the success of, especially, preparedness for incidents, others have focused on explaining how certain cognitive or social processes contribute to continuity. Scholars have found that, for instance, the competencies and size of continuity management staff (Walch & Merante, 2008; Shaw & Harrald, 2006) and organizational and societal culture influence the preparations for incidents (King, 2003; Sawalha & Anchor, 2012: Sawalha & Meaton, 2012). Butler and Gray (2006) viewed continuity through the lens of mindfulness, arguing that 'correct' situated human cognition may explain reliable performance of inherently unreliable technology (see also Braun and Martz (2007) for hypothesized relations between mindfulness and continuity planning). Further, the authors argued that while planning techniques 'may increase an organization's ability to perform reliably, the impact of these techniques is affected by the degree to which they either enhance (mediation) or are enhanced by (moderation) collective mindfulness [situated and active cognition]' (p. 218). In addition, social ingenuity may be taken as an extension that is called upon when the plans fail to provide sufficient basis for prescriptive, plan governed/guided action (cf. Berman (2002)). However, such a view provides little understanding as to 'why does planning tend to be obtrusive, stand in the way, be exposed to breakdowns, while improvisation is called upon to come to the rescue in those very situations where plans and procedures typically fail?' (Ciborra, 1999, p.87).

Improving, rather than explaining, social ingenuity has received more modest attention. While the importance of employee awareness has received significant attention amongst IS security scholars interested in information security management and policies (Lebek et al., 2013), scholars interested in business continuity have shown less interest. Despite the fact that there are certainly overlapping and interacting domains between information security and business continuity, the type of awareness required in both is likely to qualitative differ. Morwood (1998) suggests organizations should implement awareness and training programmes to ensure that the implemented plans are known by the employees; 'a plan is only as good as your ability to implement it – and your ability to implement it will be highly dependent upon how well your staff members know the BC [business continuity] plan and can execute its tasks' (p. 28). Additionally, incident exercises and testing preplanned procedures are ways of facilitating improvements in the human actors' behavior. Employees who have been rehearsing to confront various incidents are expected to perform better when an actual incident occurs (Kendall et al., 2005).

As indicated above, three ways of approaching continuity seem to prevail. The purpose of the above discussion is not to pinpoint certain scholars or to evoke opposition between them but to surface a broader contention and tension between the approaches. It is likely that any attempt to narrow and bring the approaches closer is beneficial and welcomed by others. As will be discussed next, focusing on practicing continuity may positively contribute to mitigating this contention.

Towards Practicing Continuity

After introducing the prevailing ways to understand and improve business continuity in previous chapter, it is now possible to move towards the fourth, emerging approach. In contrast to research focusing on understanding and improving continuity through plans, technologies or social aspects, the fourth approach underlines their constitutive interaction in practice. That is, to understand continuity is to understand how the plans, technologies, human actors and other 'things' combine in and form work practices, and, consequently, to improve continuity is to transform ways in which people work. In other words, the focus is in the interaction of humans and material things in practice. Quoting Carlile et al. (2013) 'practices are not merely constellations of intersubjectivity, they are also constellations of “interobjectivity”'(quotation marks theirs) (p. 7).

Central for the emerging approach is the recognition that organizational practices and routines shape business continuity outcomes. As the preliminary empirical findings from Herbane et al. (2004) suggest, continuity can be viewed as 'a mix of routines and skills that is observable but not necessarily tangible or transferable' (p. 437). What the authors mean is not that business continuity should be viewed as a set of separate and isolated routines, but on the contrary – it should be viewed as 'an integral and ongoing part of daily routines' (Herbane et al., 2004, p. 447). What this implies is not that all work would be related to

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2 Indeed, the widely used information security management standard, ISO-27001, from International Organization for Standardization (2006) includes a part that also covers business continuity.
business continuity, neither that organizational routines and practices would include a part that is only
relevant in respect to business continuity, but that there are certain ways of working that are 'better' than
others. As Barley and Kunda (2001) argues, '[h]uman action generates organizational variance' (p. 79). To
understand continuity, then, is to understand work and its constituents.

Organizational work happens at the nexus of humans, technologies and 'things' (Schatzki, 2006). Consequently, in order for the work to happen both social and material 'components' – that is combinations of the humans, technologies and things – are needed. However, same or at least closely similar work outcomes can be produced with different social and material configurations of work. For instance, if an accountant needs to calculate company's profits, he or she may do so with paper and pen, with a calculator, or with a computer running a calculator (just to give a few possible options). While it is possible to produce the same outcome with all the options, the outcome is dependent on the joint possibilities formed by the human actor (the accountant) and the material technologies (the paper/pen, calculator, and computer). Whether the outcome will be a correct calculation is not dependent solely on the accountant, neither on the material artifact, but on their interaction; paper and pen can produce the correct calculations only in interaction with an actor capable of doing manual calculations and so forth. While social ingenuity is indispensable in findings ways in which the technologies might be used, the ingenuity is always conditioned by the prevailing material conditions. And while technologies are indispensable in extending possibilities of work, they need to be implicated in the organizational work to produce organizational outcomes. Importantly then, the capabilities of technologies and the human actor are neither universals nor are they fixed or possessed by any single component part of a practice, but become determined in certain practices and in relation to one another (Barad, 2007) – in the act of practicing. It is also this ongoing flow of practices, the performance of everyday work that gives rise to and engenders continuity. And it is incidents that actualize as the abrupt transformations or disruptions of this ongoing flow.

The transformation or disruption of the ongoing flow of practices is often contingent on the material aspects of work. As practices are constitutive configurations of social and material components (Orlikowski & Scott, 2008), incidents can be understood as abrupt reconfigurings of the material constitutions of practices, and the possibilities of work thereof. When harmful event befalls, it abruptly reconfigures the social/material arrangements and the possibilities to enact work practices – a calculator stops working, the network connection hangs, computer powers off, a software crashes, or a computer virus corrupts work files. The abrupt material changes have direct and experienceable social implications. As Brown and Duguid (1994) explain, it is '[b]ecause the social and material aspects of artifacts and practices are interwoven, the loss of physical continuity often disturbs social practice' (p. 22). Thus, the effectiveness of business continuity measures is relational to the degree of which they enhance or are enhanced by possibilities to work; the effectiveness of plans materialize as the extent of usefulness of the plans to aid and support work in the newly transformed material conditions of work; social ingenuity materializes as the ways in which the human actor is able to enact and make use of the newly emerged material conditions; and technologies in the ways in which they enable (or do not constrain (cf. Sakurai & Kokuryo (2014)) human action. That is, the social and material aspects of work shape in important ways business continuity outcomes, i.e., what incidents occur, how they occur and with what consequences. As such, business continuity requires being sensitive and attentive to the work practices and their differential constitutions.

But how understanding of practices and their social/material constitution contributes to improving business continuity? As suggested by the above discussion, since continuity is not intrinsic to plans, social ingenuity or technologies but how they all become enacted and unite in work, the unit of improvements and analysis should be work practices. Organizations must therefore recognize that improving business continuity 'will introduce changes to working practices' (Gibb and Buchanan 2006, p. 131). As with any restructurings of organizations, when new structures are imposed, be it plans or technologies, 'they invariably alter patterns of work. Conversely, when the nature of work in an organization changes...organizational structures either adapt or risk becoming misaligned with the activities they

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3 Although something like software or files is sometimes considered as 'immaterial' rather than 'material', 'materiality is not the same as tangibility...To exist in the world as software, some specific materialization is required' (Scott & Orlikowski, 2014, p.879)
organize’ (Barley & Kunda, 2001, p. 76). Indeed, often times there is a mismatch in how organizations document their work and how they actually work (cf. Brown & Duguid, 1991). Thus reliance merely on the documented plans may distort what actually takes place in practice. Further, while technologies structure action and alter patterns of work, they are not fixed, stable, and deterministic structures but become differentially enacted in practice (Orlikowski, 2000). Therefore, one possible way forward is to shift the focus from plans to planning. What this implies is that it is the process of producing the plans, the act of planning that invokes changes in work and the material conditions work, and not merely the resulting plans. Indeed, similar suggestions are also visible in the practitioner oriented business continuity methodology, ISO 22301, from International Organizations for Standardization (2012). The standard also suggests that continuity is not an end product of the planning methodology (either as plans or any other form of end product) per se but should be realized throughout the process as transformations in how people work and how they think about business continuity. However, it is not sufficient to describe these processes in terms of universal and rather linear abstractions (that often characterize methodologies), as ‘[a]bstractions detached from practice distort or obscure intricacies of that practice’ (Brown & Duguid, 1991, p. 40), but investigate how the planning takes place in practice.

Existing business continuity research suggests, at least partial misalignment exists between the documented methodologies and methodologies in practice. Empirical findings from Herbane et al. (2004) indicate that the process of improving business continuity is not likely a neat and linear, but a ‘messy, probably two-directional and incremental’ (p. 77). Such assessment is further supported by Niemimaa and Järveläinen (2013) who suggest existing work practices and planning techniques are likely to be reciprocally related. That is, the existing work practices are likely to shape the planning techniques as much as the planning techniques shape the work practices.

As a summary, work practices have always material and social dimensions that become abruptly reconfigured when an incident befalls. Practicing continuity approach emphasizes understanding practices as amalgams of social/material arrangements, and thus, improving continuity is relational to the ways in which the planning techniques, technologies and social conditions improve the possibilities of enacting the work practices. Consequently, the unit of improvement and analysis of business continuity should be work practices.

Discussion and Conclusions

This research sought to explicate the ways in which business continuity has been approached. The focus of the research was to conceptually extend and develop further an approach that centers on the idea of practicing continuity. Despite the fact that the focus was to extend a single approach, the attempt is not to exclude, but to complement others. Indeed, each approach entails certain theoretical commitments that generate some distinctive blind spots (Orlikowski & Scott, 2008) when approaching continuity. Therefore, multiplicity of approaches may generate multiple and complementary insights of the same phenomenon, and thus widen understanding of the complexities of business continuity – each from their distinctively own perspectives. As such, the research contributes by extending the 'toolbox' of approaches for business continuity.

The approach developed here shares Butler and Gray's (2006) premise 'that individual and organizational reliability arises from both what work is done and how it is performed' (Butler & Gray, 2006, p. 212), but differs in respect to what constitutes 'work'. While their view on 'work' centers around on the cognitive aspects of work, the view taken here underlines the material aspects of work. The practicing continuity approach centers around the idea that business continuity is not embedded in plans, technologies, or human actors per se, but is an ongoing an active doing – a form of contextual and situated activity conditioned and enabled by the social/material configurations and conditions of work. The approach underlines that while plans, technologies and human ingenuity are each significant for business continuity, their effectiveness is not intrinsic, but arises from the ways in which they become enacted and combine when performing work. The practicing continuity thus provides a link that bridges the macro- and micro-level approaches. Failure to link the abstract, macro-level explanations and the micro-level practices at least risks overlooking or omitting the proximal explanation for variation in organizations' ability to cope with incidents, but also gives overly homogenous, cleansed, and therefore false image of organizational business continuity measures.
In order to extend and develop further the discussions around business continuity, Table 1 summarizes the existing approaches and how the practicing continuity approach contributes to understanding and improving continuity in comparison to other approaches.

<table>
<thead>
<tr>
<th>Approach Description</th>
<th>Main focus</th>
<th>Blind spots</th>
<th>How practicing continuity contributes</th>
<th>Illustrative research questions</th>
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<tbody>
<tr>
<td>Continuity Plans:</td>
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<tr>
<td>Business continuity is largely relational to business continuity plans.</td>
<td>Focuses on plans and improvements of procedures to create optimal plans.</td>
<td>Focusing on plans (and the methodologies of their production) tells more about how plans are born out, not how organizational practices are born out of plans/planning, i.e., how the plans implicate and are implicated in organizational work.</td>
<td>By drawing attention to the work practices, the approach enables research to focus on the ways in which the methodologies become enacted and shaped in practice and how the methodologies can most effectively bring about changes to ways in which people work. Improving understanding on the ways in which continuity planning and work are relational may lead to improvements when designing new methodological abstractions. Further, by focusing on the work practices, new insights to how exactly continuity plans become enacted during incidents may open.</td>
<td>What methodological steps produce the most effective and comprehensive plans?</td>
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<td>Continuity Technologies:</td>
<td>Focuses on advancing technologies</td>
<td>Focusing on technologies per se neglects the context of technology in use foreshadowing the multiplicities of a single technology in practice, i.e., the various ways in which users may differentially appropriate and use technologies in practice.</td>
<td>Draws attention to the ways in which various continuity technologies become appropriated and used when implicated in work practices under normal and incident circumstances; focuses on how technologies are used rather than what technologies are used.</td>
<td>Which technologies facilitate and support business continuity most effectively?</td>
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<td>Social Ingenuity:</td>
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<tr>
<td>Business continuity is relational to organizational individual and group level</td>
<td>Focuses on explaining and facilitating continuity-favorable social conditions.</td>
<td>Focusing on the social aspects foreshadows the material aspects of work, i.e., how material conditions of work restrict and enable social</td>
<td>By recognizing that work happens in the constitutive interaction of social and material conditions of the context, the approach enables insights on the ways in which the social performance is conditioned and enabled by material artifacts (such as</td>
<td>Which social factors influence business continuity? How to facilitate most effective social conditions for business continuity?</td>
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Practicing Continuity

Business continuity is relational to work practices; an ongoing and active achievement. Focuses on the situated and contextual entanglements of social actors, technologies and plans in practice. Focusing on the interactions may overshadow the differential implications and role of plans, technologies or human actors in business continuity.

<table>
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<tr>
<th>Practicing Continuity:</th>
<th>How business continuity unfolds in practice (as practiced)?</th>
<th>How plans, technologies, and social conditions are implicated in work to support business continuity?</th>
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<td>Focuses on the</td>
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<td>technologies and plans</td>
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How business continuity unfolds in practice (as practiced)?

Table 1. Extending business continuity approaches

Due to the conceptual nature of this research, the lack of empirical data is a limitation that may limit the practical relevance of this research. However, ‘the IS research community still relies heavily on non-empirical studies’ (Chen & Hirscheim, 2004, p. 14). Nevertheless, future research should develop the practicing continuity approach further by delving into the empirical details of organizational work to understand how continuity is performed in practice. By immersing oneself into organizational work it becomes possible to foreground the practices and their constituent parts through which business continuity is performed in order to develop more nuanced, detailed, and perhaps even more truthful descriptions and theories of how continuity is practiced. Especially fruitful sites of investigation are likely to be those that have mature practices for coping with incidents and for whom continuity is imperative. Such are likely to be banks and other financial organizations, as well as organizations that are a part of societal critical infrastructures.

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