

## **BATCH ORGANIZATIONAL CHANGE – A STRUCTURAL MODEL**

Organizational change is inherently lumpy – that is, done in batch, leaving the organization-environment fit in a state of flux. Organizational structures and routines lead managers to bundle and execute change in batches. I propose a holistic structural model to capture the costs of batch organizational change.

### **Organizational Change**

Questions about organizational change have been studied by theorists from many perspectives and with many different assumptions. While most of this research has surely contributed to the collective understanding of the field, there seems to be a wide range in the value of prescriptive and actionable knowledge. This paper proposes a model to study and assess the costs of organizational change, in particular, discontinuous, non-gradual reorientations (Tushman & Romanelli, 1985), what I refer to as “batch” change. While much of the literature reviewed here concerns change, if we hold the assumption that change is in reality a constant, it follows that organizations are actually in a state of constant change. While this is true at some level of analysis, at the firm level, changes are often made in batch. An organization facing a 1% decline in a market cannot lay off .3 of a 30 person manufacturing staff, or 1% of its one person controller’s office. As well, an organization facing a secular decline in market share does not always decrease its staff in lock step with the market size; instead an organization batches its changes (e.g. downsizings) into groupings and episodes. There may be, for example, only one planning and staffing meeting each quarter, and thus only one opportunity to plan for and execute such a (e.g.) downsizing. This is how managers work in practice, and thus where more research attention needs to be paid.

I argue that organizational change is inherently lumpy – that is, episodic – leaving the organization-environment fit in a loosely coupled state (Pfeffer & Salancik, 1978). Organizational structures and routines lead managers to bundle change decisions and then execute them in batches. Consider the batch organizational change that managers and organizations face in the formation and dissolution of inter-organizational relationships. While researchers and managers have spent considerable time analyzing the potential benefits of such relationships, the organizational change costs involved in both the formation and the eventual dissolution of these relationships has not been sufficiently studied. As well, it is unlikely that such change costs are fully considered before entering into such relationships. Change is costly to an organization at many levels, but we have yet to fully model the whole cost of organizational change.

In the pages that follow, I review the relevant overarching theoretical perspectives on organizations and change. This foundation is used to lay out elements of the change process from the literature that then motivate seven constructs that are linked in a theoretical structural model. The proposed model is a holistic structural model to capture the costs of batch organizational change. The implications of this paper are both a research agenda to further the knowledge of

organizational change costs and a basis for a cost assessment tool for managers that may eventually emerge. This paper, the model, and the propositions developed, are put forth in the spirit of creating such a research agenda.

### **Theoretical Bases in the Organizational Literatures**

Three perspectives are important here to suggest sources of pressure to change: first, that there exists an organizational-environment fit; second that there are exogenous demands on an organization; and third, that organizational and managerial volition (endogenous) exist. The arguments of Population Ecology Theory suggest that the external environment determines the optimal characteristics of an organization. Given that, organizations must adapt to the changes in their environments in order to increase their chances of survival (Hannan & Freeman, 1989). Of importance to this paper is that organizational responses to exogenous stimuli may be required of an organization, and those stimuli may require a batch organizational change response. DiMaggio and Powell (1983), and others, offer an Institutional Theory for how and why organizations, in their search for legitimacy, must change. (Exogenous) Isomorphic forces, both competitive and institutional, guide adaptation, in part, to reduce environmental uncertainty. While managers may not explicitly understand the causal linkages among – the stimuli, their actions, their intended outcomes, and the actual outcomes – managers may conduct rapid, dramatic change in response to such stimuli. Finally, managerial volition is a key driver of change (Andrews, 1980). As an example, Transaction Cost Economics helps us understand how and why managers decide to create linkages – less important to this paper is the “why,” but rather the “how” of implementation. For example, the formation and dissolution of such linkages (e.g. inter-organizational relationships) involve discontinuous, batch changes, and are some of the most dramatic change organizations face (Williamson & Ouchi, 1981). Important here is how Williamson (1994) suggests that there is volition in management action in such decisions. That said, this pressure to change may be endogenous (our decision) or exogenous (our reaction to the other party). Either case may require action and change – change that may be wholesale, and is equally likely to have been unplanned as planned, since either party can initiate it.

### **Theoretical Bases in the Change Literatures**

**What is change?** Much of the traditional literature has portrayed change as occasional and temporary in organizations that are presumed to be bound by assumptions of routine, order, and stability, while others assume change as the normal condition of organizational existence (Tsoukas & Chia, 2002). By defining change as a state of departure from the norm, the latter argument would suggest that since change is the constant, that only when an organization does not change is it truly in a state of change. While the purpose of this paper is not to argue either stance, it is important to understand that in both cases, change does occur. That is, people do get hired and fired, structures do get altered, exogenous shocks happen, and reorientations do occur. Whether such occurrences are the norm or the exception, this contention is important to understand the broad applicability and importance of studying the cost of change.

**Evolutionary change.** Several arguments have been put forth to suggest that organizations should change incrementally rather than in revolutionary steps, including Cyert and March (1992) who offer short-run reaction to short-run feedback and suggest that organizations change incrementally in response to stimuli one at a time and at a sub-unit (or even single person) level. An organization is thereby able to keep a harmonious balance with its environment. Hedberg, Nystrom, and Starbuck (1976) suggest that an organization is made up of processes that are done at the task performer level (thus very adaptive to their environments) that must be dynamically balanced and that such balance allows an organization to avoid problems.

Revolutionary adjustments to any of the processes would disrupt the harmonious balance. Weick (1979) puts forward a loosely coupled organization with changes done at the micro level, again suggesting that organizations change incrementally in response to minute stimuli. Starbuck, Greve, and Hedberg (1978) find that crises occur because managers make mistakes and therefore that appropriate evolutionary, incremental adaptation is the natural result of management without such mistakes. While managers and their organizations can benefit from crises by seizing opportunities and by providing proper leadership, there is seemingly a preference in these literatures for incremental adaptation over wholesale, batch change.

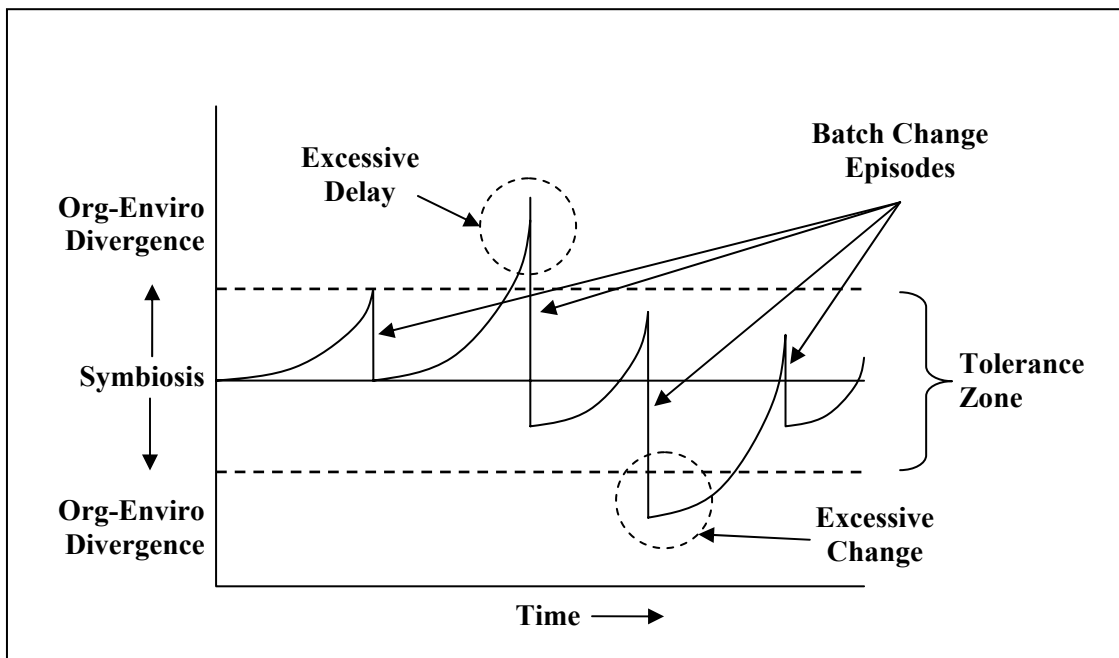
**Revolutionary change.** The punctuated equilibrium model has been put forth and empirically tested by several theorists (Gersick, 1988; 1991; Tushman & Romanelli, 1985). This is an evolutionary analogy with long periods of equilibrium and minimal change followed by bursts of rapid change resulting in new genetic species. The evolutionary process of variation provides incremental shifts in a species – a punctuated equilibrium is the equivalent of an accumulation of incremental shifts, but over a short period of time (Gould & Eldredge, 1977). That said, the fit of the analogy to evolutionary theory relies on whether evolutionary variation can be catalyzed to produce bursts resembling incremental variation, since organizations certainly can go through discontinuous, wholesale transformations – whether by the volitional stroke of a manager’s pen, or by some exogenous impact that forces change. While this may be grounds for questioning the fit of the analogy, the analogy is valuable with an appropriate temporal perspective and level of analysis (Lichtenstein, 1995). Lichtenstein (1995) argues against the punctuated model because: a) the model does not provide for variation and selection – basic steps in evolution; and b) no speciation occurs – that is, evolutionary theory suggests a process that yields new species; organizational theory does not. While Lichtenstein soundly argues that the evolutionary punctuated model does not map perfectly to an organizational model, an attempt to force the analogy to fit will surely confound the issue and end in a myopic understanding. Here, the analogy need not be perfectly matched to offer utility. The punctuated model offers that organizations are in stasis most of the time, with bursts of punctuated change that resemble an accumulation of incremental variations that have simply occurred over a short period. This is consistent with the principle of batch change whereby managers delay and accumulate incremental, individual actions into episodic, batch changes.

**Revolutionary versus evolutionary change.** Incremental changes can result in discrepancies or conflicts with elements of organizational structure, and organizations should resist incremental change that might unbalance an organization until there is a critical incongruence with its environment (Miller, 1982). This is perhaps the clearest suggestion that batch change is preferable. There are two issues at work here – first, at the employee level, there may be an authority-responsibility misalignment and thus an organization already has built into its structure the inability to adapt piecemeal at the employee level. Second, changes that are needed are probably done in batch; that is, managers wait until there is enough feedback, a critical level of need is established, discussions are completed, etc., at which point there may have been a, perhaps severe, time lag. Upon eventually making a decision and choosing to act, managers will have bundled several changes resulting in batch change shown as *Batch Change Episodes* in Figure 1. I propose that the processes and routines of managers and the authority structures built into organizations will tend to lead to batch change, in part since rational managers will prefer to make more informed – and thus delayed and batched – change decisions.

Miller and Friesen (1980) find that organizations, based in part on inertia arguments, naturally resist changes in structure and strategy, even if it is to their own detriment (shown in Figure 1 as a movement away from Symbiosis). When such change is incremental, the resistance can be effective in stopping the needed change altogether, thus the only effective process of

organizational adaptation is a batch change. Greiner (1972) suggests that organizations have distinct stages of orderly change or evolution that naturally lead to a management crisis or revolution, and that aware managers should anticipate and plan for revolutionary changes – managers need simply to lead an organization through repeated episodes of crisis. While contrary to some population ecology arguments, perhaps an organization is better off not responding to each environmental stimulus. Managers should put off revolutionary change until it is absolutely necessary (critical mass, or tipping point), and when such discontinuous change is implemented, managers should endeavor to complete the intended change as quickly as possible (in Figure 1, change periods are instantaneous event as shown by vertical lines; in reality these are not so) so as to keep an organization in a state of imbalance as briefly as possible (Miller, 1982). Empirical evidence of the former has been put forth by Miller and Friesen (1982) in a study where they find an association between revolutionary change and high performance in organizations – interesting findings with prescriptive possibilities, although a clear issue is that a causal link is not firmly established. Finally, Romanelli and Tushman find in an empirical study of minicomputer producers that incremental changes in strategy, structure, and power distribution do not accumulate to create fundamental transformation (1994). That is, gradual changes do not add up to the transformations possibly required by the changes in the environment in which an organization may operate.

**Figure 1: Batch Organizational Change**



**Organizations and the Process of Change – Construct Underpinnings**

Three constructs, *magnitude*, *choice*, and *timing*, that are developed later, are discussed here among several well known change-related concepts/constructs. While there are many relevant and important concepts and constructs that should be considered in a more in-depth study, the select few that follow should suffice in presenting a foundation for the constructs used here.

**Choice of change.** Depending on the nature of the stimulus at hand, managers will prefer either a gradual or a batch path or opt for no change at all. As well, managers respond to crises according to their perception of the degree of control of the environment in which they operate and the likely costs of organizational change (Smart & Vertinsky, 1984). They also find that highly turbulent and complex environments promote incremental, gradual, short-term responses and adjustments whereas predictable, simple environments promote gradual, long-term planning and response from managers. While managers surely consider the costs of organizational change, the intent here is to provide a model with which managers can better assess the organizational change costs of batch change, and how it may differ from the costs of a gradual change path.

**Choice and propensity to change.** Jansen (1996) argues that each organization has a characteristic level of change similar to that of an individual's risk tolerance. Organizations will take action to accelerate or slow change when the amount or magnitude of change falls outside of this comfort zone. Such propensity is likely held in check by an organization's leadership and the nature of the organization itself.

**Choice for action – volition.** Simply put, change can either be action or reaction. Managers acting on their own volitional plans, perhaps a strategic plan, have the temporal luxury of being able to plan and time change. This does not imply that they are actually capable of adequately doing so, nor willing to do so, nor do they actually do so in practice, nor are they able to plan for every contingency. That said, volitional change does perhaps give managers an upper hand in being actors and not just reactors. Such change cannot always be planned – that is changes may be prompted by exogenous shocks or stimuli including regulatory changes, competitive changes, market changes or other environmental shifts. In these exogenously driven change cases, managers are reacting to the change, and while they may not have the upper hand, ongoing monitoring and contingency planning before the fact are unquestionably beneficial tools for managers in these reactionary situations.

**Timing – speed and pace.** An organization's inertia and momentum impact its pace of change. While an organization may temporarily move outside of its comfort zone of typical change pace, it is eventually pulled back by these forces to a steady-state pace (Jansen, 1996). Regardless of assumptions of inertia, momentum, or adaptability of organizations, crises can trigger reactive change outside the typical pace of change (Gersick, 1994). Gersick also finds that managers, and therefore organizations, pace change either using time-based or event-based reorientations and actions. Such pacing of change improves the manager's ability to control change, and therefore potentially the organizational costs of such change.

**Magnitude of change – downsizing.** How large is the change? As an example, downsizing can be costly and traumatic for an organization, as can rapid growth. In either case, the episodic change is costly and disruptive, in relation to the magnitude of change relative to the organization. Downsizing has been modeled as a consequence of decline, layoffs, and inability to adapt (Freeman & Cameron, 1993). In a review of the literature on downsizing, in particular as it relates to the healthcare industry, Davis, et al (2003) emphasize effective planning before, during, and after a downsizing to ensure successful outcomes, including the suggestion that managers include downsizing plans and contingencies in their strategic plans whether they plan to downsize or not. This call for planning is consistent with the agenda presented here that management plans for downsizing include estimates of the costs and impacts of such discontinuous changes, should they occur.

**Timing and lame ducks.** The phenomenon of redundant and displaced employees, perhaps as a result of an impending change, puts employees into a circumstance termed a lame duck situation (LDS) by Krell & Spich (1996) whereby employees are in an unproductive holding pattern awaiting their removal, possible redeployment, or other change to occur. Krell and Spich suggest that having employees in a LDS is costly and disruptive to the rest of an organization which is supported by Radde (1986) who also finds that there are costs and impacts of putting an employee into a LDS, however, and interestingly, that the costs of dissolving certain employee relationships may exceed the benefits derived.

**Timing and opportunity costs – organizational slack.** While there may be pressures on managers and organizations to downsize when there is an under-utilization of employees, there is also benefit to having slack resources as a mechanism to allow an organization to, for example, capture unplanned opportunities. As the 21<sup>st</sup> century organization is increasingly complex and technical and able to capture and disseminate knowledge, organizations that wish to take advantage of the new systems, technology, and knowledge need management resources to focus on extracting and creating value. They cannot merely aim for full deployment and efficiency of workforce without slack time or resources for thinking or learning (Lawson, 2001). While the argument for slack resources is sound, it would seem that the prescribed steady state should include such resources in a buffer state, and that organizational transformations in line with this paper will require changes too great to simply be absorbed.

Change, whether volitional or reactionary, whether driven by strategic or environmental contingencies, whether core or periphery, is complex and costly. A core assumption in this paper is that managers make changes on behalf of organizations based, at least in part, on their assessments of costs and benefits. Two essential questions arise from this: first, how can managers better calculate and assess these costs of batch change, especially as they compare to gradual change; and second, how can managers use this information to better guide and control organizational change?

### **The Cost of Batch Organizational Change**

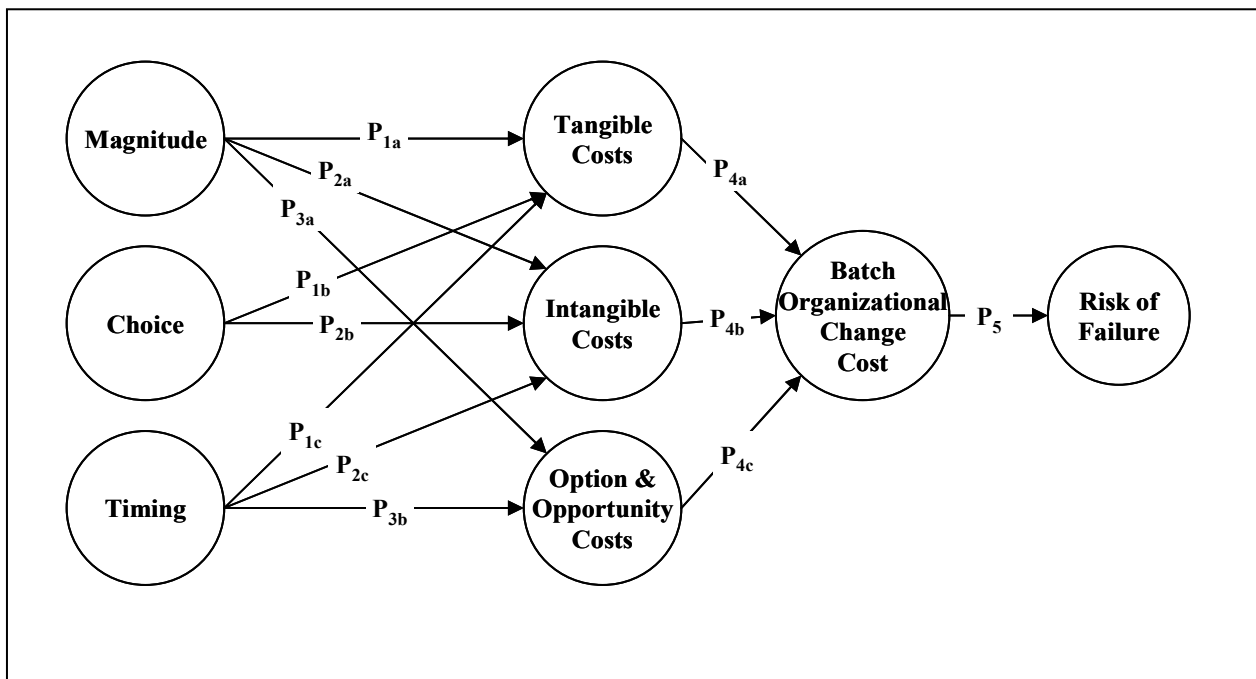
How can change costs be categorized, and can they be modeled? Nickerson and Zenger (2002) assume that organizational change costs fall into two categories; up-front costs and dynamic costs. Up-front costs are the costs of planning and executing the organizational change. The implementation phase is typically the most costly, involving actual costs (e.g. relocating employees, equipment costs in a downsizing) of changing the structural elements of an organization (Miller & Friesen, 1980). Nickerson and Zenger's second category of dynamic costs includes the transitional loss of productivity from employees as they await or go through change. While useful in creating an elementary set of prescriptive literature for managers focused on reducing these costs of change, perhaps a more complex view of these change costs will further elucidate the true costs of batch organizational change.

### **Batch Organizational Change Costs – A Structural Model**

A complete model of batch organizational change can serve as a foundation for a management toolset useful in calculating, forecasting, and controlling these costs of change. Based on the literature reviewed and theory developed here, I propose such a model. From right to left, the model consists of a construct for *risk of (organizational) failure* as it is impacted by undue or excessive costs of change. The construct *batch organizational change cost* is driven by both monetary and non-monetary costs, including changes in future opportunities and risk

impacts. The three cost constructs, further developed below, that are intended to include all of the costs that an organization may incur in such change. Finally, I propose three constructs, *magnitude*, *choice*, and *timing*, that drive these costs. These three exogenous constructs are theorized to be mutually exclusive and collectively exhaustive. Referring back to Figure 1, *magnitude* encompasses to the distance from symbiosis (movement up and down), *timing* encompasses speed, go-stop decisions, sequencing, delay and other temporal elements (thereby determining movement from left to right), and *choice*, the control of all such movements, encompassing management volition, cognition, action-reaction, ability, authority, will and other choice elements. Each of these is further developed below, as are propositions to suggest elementary relationships among them.

**Figure 2: A Structural Model of Batch Organizational Change Costs**



**Magnitude.** This is a measure of the magnitude of the change. The magnitude is in part based on the relative size of the batch change (e.g. number of employees or percentage of revenue affected) as well as a measure of the criticality of the change. The criticality is in part driven by the location of the change – whether located at the core or periphery of an organization (Singh, House, & Tucker, 1986) and its increased costs (risk of failure) as it approaches the core (Hannan & Freeman, 1984). This is a relative measure, since each organization has a different tolerance and propensity to change (Jansen, 1996), and since some organizations with established modification routines, that is, built-in capabilities to change, are perhaps more readily able to adapt (Nelson & Winter, 1982), or have learned the process of change (Amburgey, Kelly, & Barnett, 1993), and thus even batch change may be relatively easy for them.

**Choice.** This measure takes into account the degree to which the change is planned (volitional) or not (reactive) and whether managers are reasonably able to anticipate (cognition) the stimulus. As well, this is affected by management’s degree of control over the change – e.g. in a hostile takeover, target management is only partially in control. An organization may have

limited control over its environment, and thus exogenous shocks and gradual change alike may be out of the control of managers. Inherent here is whether the manager's have the ability, experience, authority, and will to effect such change or affect the timing or magnitude.

**Timing.** This includes several timing factors that may affect the overall batch change, including what I term: reaction; convenience; and execution timing. First, is the reaction or lag time that it takes for an organization to recognize, comprehend, or become informed that change is required until the point that the change occurs. Miller (1982) argues that an organization should delay change until absolutely necessary (why incur the cost until you must), and that episodes of change should be as short as possible (why leave yourself vulnerable and unfocused). While Miller's latter point is sound, leaving change until it is absolutely necessary requires that managers have perfect and timely information, and that they have the ability to use that information both to calculate the costs of change at that point in time, and to time the execution of such change correctly, which seems doubtful. More likely, during this lag time the organization accumulates costs and disruption from the forces of or need for change, until such change actually occurs. Second, is a convenience factor regarding the timing of this cognition and of the change itself with respect to the timeline of the organization, its operations, and other changes in process. For example, it might be inconvenient to initiate a lay-off within an accounting organization during an annual budgeting process. After an episode of change, an organization has a period of freedom; a clock-resetting (Amburgey, et al., 1993) – a temporary reprieve that may allow an organization to recover. However, an organization increases its risk of failure (costs in this context) by having the cumulative effects of multiple changes (Kelly & Amburgey, 1991) during a period – thus the timing of the change in relation to other changes and events, and the lingering effects thereof, must be considered. Finally, the total time it takes for the firm to execute and complete the change, depends upon the pace at which managers drive the transformation (Gersick, 1994), management's goal to get through the episode of change as quickly as possible (Miller, 1982), and their desire to return quickly to a less costly and less disruptive set of trial-period routines following episodic change during which change is suspended for a period (Sastry, 1997).

**Tangible costs.** This includes part of what Nickerson and Zenger (2002) call up-front costs, including the direct costs such as redundancy packages, professional advisors, relocation, retraining, and equipment costs. This also includes indirect costs such as planning costs (manager salaries) not directly allocable to the change process. Batch change costs will differ from gradual change, in part since, for example, a single set of consultants is hired, a single outplacement firm, a single redundancy package is arranged, etc., thereby saving the costs and hassles required to, e.g., downsize a firm, individual by individual. While this would require empirical testing, it seems logical that in, for example, a group lay-off, redundancy packages might be more generous and thus more costly to a firm – employees in numbers may have more leverage or be more likely and willing to threaten to sue in a class action – although these costs are likely offset to some degree by lower execution costs.

**Proposition 1a (P<sub>1a</sub>):** The greater the magnitude of batch change, the higher the tangible change costs.

**Proposition 1b (P<sub>1b</sub>):** The greater the choice and control of batch change, the less the tangible change costs.

**Proposition 1c (P<sub>1c</sub>):** Tangible change costs will be lower when an organization improves its timing (factors) of batch change.

**Intangible costs.** This includes intangible costs from both inside and outside the organization. Intangibles within the firm include increased coordination costs, lower work effort and productivity, in part because of perhaps being in a lame duck situation (Krell & Spich, 1996), as well as reorientation and re-enculturation costs (perhaps increased transaction costs due to returning or redeployed employees who must reestablish relationships and trust). Intangible costs external to the organization include stakeholder perception damage (costs) and legitimacy cost effects (Baum & Oliver, 1991) – that is, an organization’s legitimacy may be called into question based on the occurrence of change. For example, Baum & Oliver (1991) find a relevant intangible future cost in the termination of an inter-organizational relationships; such a termination will decrease an organization’s legitimacy and therefore make it more difficult (costly) to establish future relationships. Reconfiguring an organization’s resources and people requires the creation of new routines and/or the breaking of old routines (Nelson & Winter, 1982), many costs of which are not actual cash costs (e.g. loss of productivity, increased transaction costs). Organizational change at the employee level, where people are hired, fired, and redeployed in batch change, requires retraining, re-enculturation, and re-integration of people; all costly and difficult endeavors, but with increased cost impacts when done in batch.

**Proposition 2a (P<sub>2a</sub>):** The greater the magnitude of batch change, the higher the intangible change costs.

**Proposition 2b (P<sub>2b</sub>):** The greater the choice and control of batch change, the less the intangible costs of change.

**Proposition 2c (P<sub>2c</sub>):** Intangible change costs will be lower when an organization improves its timing (factors) of batch change.

**Option and opportunity costs.** This includes the opportunity costs of having to focus resources on the batch change which may include lost revenue or other missed opportunities. This factor also needs to include the value of any options that are no longer available to the organization now that the change is either imminent or is completed. For example, if an organization withdraws from a joint venture, the option value inherent in being a possible takeover candidate by the dyad party may now be valued at zero because the option is no longer likely (Kogut, 1991). This option value decrease must be considered, as well as the value of any new options now open to the organization after such batch change. While this cost does not appear on an income statement, under an assumption of efficient markets, it will appear as a change in firm value to reflect the option value (Kogut, 1991) and thus an organization should face a change in its market value.

**Proposition 3a (P<sub>3a</sub>):** The greater the magnitude of batch change, the higher the option and opportunity costs.

**Proposition 3b (P<sub>3b</sub>):** Option and opportunity change costs will be lower when an organization improves its timing (factors) of batch change.

**Propositions 4a,b,c (P<sub>4a</sub>, P<sub>4b</sub>, P<sub>4c</sub>):** The overall cost of batch change is driven (positively) by the tangible, intangible, and option & opportunity costs of change.

**Change in organizational risk of failure.** An organization that undergoes batch change may increase its risk of failure, perhaps by removing or lessening its transformational shields or by lowering its buffering abilities, thereby increasing organizational risk (Miner, Amburgey, & Stearns, 1990). Since it is clear that organizational change is costly, the findings that

organizational change increase the likelihood of additional changes of the same type (Amburgey, et al., 1993) suggests another element of resultant increased organizational risk – more change. Baum and Oliver find that institutional linkages add to legitimacy, and the presence thereof increases the likelihood of survival (1991), thus the termination of, to stick with the example, an inter-organizational relationship, may indirectly cost an organization by increasing its risk.

**Proposition 5 (P<sub>5</sub>):** As batch organizational costs increase, the organizational risk of failure increases.

While none of the above propositions is empirically tested here, several of these relationships have been well established in the literature, as have constructs and measures. The intention is to present a holistic model to capture the entire cost of batch change.

### **Conclusion, Research Agenda, and Implications**

I propose that change in organizations is inherently lumpy. There is a managerial preference and a set of forces and constraints from the organizational structure that tend to promote batch organizational change rather than gradual change. While the environment within which an organization exists may be in a constant state of change, and while the organization may too be changing with its environment at some level(s), much of an organization's change occurs in batch. An organization's environment experiences punctuations and discontinuous change, but here too the organization may, at certain levels of analysis, not respond in lock-step. It is these differences, action-reaction timing lag, pace of change, and magnitude of reaction to action, among others, that add to the costs of change. In this paper I propose a model to more fully capture and assess the total costs of batch organizational change. While several of these constructs in the proposed structural model are individually described and supported in the literature, this model is an attempt to further elucidate these concepts and constructs into a more holistic model. This model as a whole needs to be further developed and subjected to empirical testing, as do each of the various cost components and drivers, as they interrelate.

Further to a research agenda, a tying of the elements of this model into a cohesive change cost assessment tool can also serve as a foundation for a management toolset to make better informed decisions related to batch changes. Managers do not currently have a toolset for comparing the costs of change for gradual versus batch changes, and as such, further research here may lead to better decision making for managers.

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