Diffusion of changes in organizations

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Abstract

Purpose – The purpose of this paper is to address the advisability of innovation diffusion theory for enhancing the adoption/execution success rate in leading organizational change.

Design/methodology/approach – The study design involved an interpretive discussion of innovation diffusion theory and related research, followed by a review of influential models of organizational change management (CM). Through analysis and synthesis of the essential ideas and processes derived from both schools, this study conceptualized an integrated change diffusion model with practical and research implications.

Findings – The study findings were presented via an organizational change diffusion model and its phases with major considerations. Leading change should be a systematic but responsive process as visualized by a sequential but recursive flow of the phases; change could sustain with the spontaneous function of organizational dynamics; before-during-after diagnosis and evaluation would be fundamental to the success of change efforts.

Research limitations/implications – This study recommended that future research empirically test the validity of this study's conceptual arguments and attempt to further integrate innovation diffusion and CM research in many areas, including the change leader's competencies. Extended research opportunities were presented as well.

Practical implications – This study suggested that change leaders concentrate resources on a few positively or negatively influential individuals and take advantage of communication networks to persuade and inform others to help with their change adoption. Change leaders were also advised to partner with formal/informal opinion leaders and facilitate each player's proper role in the change diffusion efforts. An additional suggestion was that system-centric thinking should precede the individual-blame orientation in the root cause analysis of adoption/non-adoption (diffusion/non-diffusion) of a change.

Originality/value – This study offers value by enriching CM approaches in consultation with the research asset on innovation diffusion, which has been less capitalized upon in the organizational CM arena. Specifically, value added includes an encompassing consideration of both normative-reeducative and empirical-rational perspectives on individuals' behavior change, a research-based conceptual extension of CM models, and consummative strategies for effective and efficient change interventions.

Keywords Critical mass, Change management models, Diffusion of innovations, Innovation-decision process, Opinion leadership, Organizational change diffusion model

Paper type Conceptual paper

Organizations care about the concept of diffusion. While seeking change and innovation, they also endeavor to diffuse them to markets, customers, and employees. Change is pursued for both operational efficiency and strategic effectiveness (Daft, 1978). Unlike operational changes designed for fine-tuning and gradual improvements, planned organizational change is typically a large-scale change implementation with the intent of revolutionizing the way an organization functions and presenting its members with a future vision on a whole new level (Burke, 2011). The organizational change is either initiated by proactive internal dynamics or forced

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by external circumstances (Jacobs *et al.*, 2013). Whether the driver is the former or the latter, it reflects an intense effort to secure organizational effectiveness and, once planned and implemented, calls for members to adopt it (Damanpour and Schneider, 2006).

Diffusion research abounds across disciplines, first coming to light in hybrid corn diffusion research by Ryan and Gross (1943; as cited in Ashley, 2009), and has the potential for organizational capitalization. Organizations are already benefiting from insights into and applications of diffusion research in various areas such as communication and marketing (Rogers, 2003). An issue here, however, is that change management (CM) and organization development (OD) frameworks that take advantage of the notions of diffusion research are infrequently articulated (Cool *et al.*, 1997; Lundblad, 2003). One reason is that diffusion theory has mainly been regarded as "a model of change that focusses on individual decision making" (Ashley, 2009, p. 36) while the CM field has focussed more on transformational change of the entire organization in leading change (Gilley and Gilley, 2002). This reasoning becomes more apparent when it comes to prevailing CM models – introduced later in this study – that take a normative-reeducative approach to behavioral change (Rothwell and Sullivan, 2010). This approach assumes that "change […] will occur only as the persons involved are brought to change their normative orientations to old patterns and develop commitments to new ones" (Chin and Benne, 1985, p. 23). However, also noted for leading change should be the empirical-rational approach, which posits that individuals are rational and moved by self-interest (Duck, 2001). Both approaches are reciprocally beneficial; innovation diffusion theory could complement CM models by compensating for the lack of the empirical-rational perspective on individuals' behavior change.

A subsequent issue relates to the matter of the scientific rigor of CM models. CM literature takes "a more applied, practice-oriented way of considering the change process" (Burke, 2011, p. 164) and focusses on "analyzing common characteristics of successful change efforts so as to derive a change model from them" (Rothwell and Sullivan, 2010, p. 44). That is, most CM models are prescriptive in presenting ideas and formulating phases, based less on empirical investigations and more on conceptualizations of practice experiences and think-through processes. Therefore, if supported by and combined with relevant empirical research, CM models could converge into a more generalizable, coherent, and valid set of ideas. Research-based findings from innovation diffusion theory would be of help in this regard as well.

In sum, attempts to distill from the literature on diffusion of innovations the implications for CM would generate synergy in that both schools are ultimately concerned with sustainable change in adopting units from the distinctive but complementary perspectives. Specifically, this study explored innovation diffusion and CM/OD research, sought to interpret and integrate multidisciplinary concepts, and then offered a synthesis of findings via an organizational change diffusion model. Also, this study offered suggestions for and called for critical discussion by those who work on organizational change.

Diffusion of innovations

Diffusion features three distinct processes: "presentation of the new culture element or elements to the society, acceptance by the society, and the integration of the accepted element or elements into the preexisting culture" (Linton, 1936, p. 334). Rogers (2003) defined diffusion of innovations as "the process by which an innovation is communicated through certain channels over time among the members of a social system" (p. 5), where

an innovation is defined as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (p. 11). Major components of innovation diffusion theory that affect individuals' innovation-decision process include innovation, communication, and innovativeness associated with time and a social system.

Innovation

Implementation of non-routines that requires change in thinking and doing is an innovation because it is perceived as new by potential adopters. Similarly, planned change in organizations might be perceived as something new and adopted/rejected by members depending on its perceived attributes and consequences.

Adoption decisions. The innovation decision in the organization is twofold: the organization's decision and the staff's individual decision (Frambach and Schillewaert, 2002). Rogers (2003) expanded the classification into optional, collective, authority, and contingent innovation decisions. The optional decision is about the individual adoption or rejection decision; both the collective and authority decisions are about the organization-level decision making; and the contingent decision focusses specifically on decisions made by individual members subsequent to the preceding collective or authority decisions. The contingent innovation decision is in the focal interest of CM because change efforts are generally meant to diffuse planned changes to all constituents.

Further, individuals in an organization engage in one of two types of intra-organizational innovation decision making: voluntary or forced (Zhou, 2008). Whether and how willingly individuals adopt a change are contingent upon their perceptions of and the manner in which their organization deals with it. For example, a certain change initiative can be perceived as desirable for both the organization and its members, either of them, or perhaps neither of them; the organization's prior decisions about and communication of the initiative can be interpreted as rational or otherwise. Therefore, members' decision is as important as the preceding organizational decision and should be valued because they might respond negatively if they perceive that they are deprived of it (Eagly and Chaiken, 1993).

Attributes. Relative advantage, compatibility, complexity, trialability, and observability are major attributes for an innovation adoption by individuals (Rogers, 2003). Wisdom *et al.* (2014) re-confirmed the association of these attributes, along with practice efficacy and low risk, with the change adoption. The relative importance of each attribute could take effect differently in accordance with what the proposed change is, who the potential adopters are, and how and in what context the change is communicated. For example, relative advantage and complexity might most affect the adoption of material innovations; compatibility for conceptual or philosophical changes; trialability for risky and expensive changes; observability for multi-staged and complicated ones (Dearing, 2009).

Consequences. Changes are initiated typically in anticipation of direct and desirable consequences. However, they may spawn counter-effects simultaneously, such as organizational instability or inequality and distrust among people (Lundvall, 2010; Rogers, 2003), especially when there is a flood of change efforts that exceed organizational capacity and/or there is an unequal provision of information about ongoing initiatives.

There is also an issue of resistance, one of the most common responses to change, acting to obstruct the achievement of change goals. The main triggers of resistance are risk and uncertainty, both of which inevitably accompany changes (Fidler and Johnson, 1984). Once resistance arises, it may lead to individuals' rejections and, even worse, evolve into collective resistance, causing negative alliances and possibly undermining

the fundamentals of the organization. Besides, since change efforts are generally initiated in the interest of desirable outcomes, resisters tend to be regarded as disruptive offenders, not as individuals who may have located the initiative's flaws or reasons for a system's lack of fitness for it.

Communication

Communication in the organization takes place through various networks linked with one another, loosely and tightly. Individual adoption decisions are often and heavily influenced by these networks and the opinions of those involved in them.

Strength-of-weak-ties. Organizational changes are often triggered by an external environment such as expedited globalization, changing customer needs, and new technologies (Cummings and Worley, 2005). In many cases, information necessary for the changes, which flows inside and outside of the organization, is induced through multiple channels connected to information-focussed cliques (Rogers, 2003). Granovetter (1973) found a strong role of weak ties with heterogeneous people in helping new information flow across different groups of people. This implicit but working pattern of communication may explain much about how homogeneous silos in an organization are informed of what is going on outside the silos and how communication ties are at play in this process (Greenhalgh *et al.*, 2004).

Furthermore, information communication technologies (ICTs) create even wider and more complex yet weak ties. As network-based interactions among people are being spurred by ever-developing communication technologies and vice versa, people can easily – and sometimes unconsciously – establish a number of communication ties in and out of the organization (Rosen, 2002). Word-of-mouth is presumably becoming more influential in the converged era of in-person and virtual communications.

Opinion leadership. "Opinion leaders are the reason why diffusion can be a very efficient process to jump-start" (Dearing, 2009, p. 513). They affect others' attitudes and behaviors because they have more exposure to information, maintain extensive links with various people in and outside of the system, and are socially accessible by others (Rogers, 2003). Information they obtain spreads to others with relative ease and speed, which in turn dramatically expedites the change diffusion among them. For example, the diffusion of a service quality initiative was more successful in the branch with opinion leaders assigned as change agents than in the other branches (Lam and Schaubroeck, 2000); opinion leadership was found to be influential within internet communities composed of anonymous people (Van Eck *et al.*, 2011); and authoritative top-down communication was less effective in change diffusion (Glaser and Backer, 1979). Using commonly understood methods of communication, opinion leaders help reduce negative perceptions about a proposed change among people, manage a current or potential resistance, and achieve the goals of the change diffusion (Fidler and Johnson, 1984).

Critical mass. Diffusion is most likely to succeed if it reaches a point at which future adoptions become self-sustaining. The point, labeled "critical mass" (Rogers, 2003), induces a collective action among people through self-reinforcing dynamics (Centola, 2013; Kim and Bearman, 1997; Yin, 1998) and tips an epidemic that "everything can change all at once" (Gladwell, 2000, p. 9). The rate of adoption jumps from a relatively linear path to an exponential upsurge once it touches this milestone; the innovation diffuses such that it no longer requires additional support for further movement.

The "bandwagon effect" (Sherden, 2011), or "social influence" (Young, 2009), is a similar phenomenon where people within a social system start to adopt a change due less to their individual judgment than to a sufficient number of prior adopters demonstrating positive attitudes toward it. People adopt a change, or jump on the bandwagon, as a coping mechanism to conform to a majority norm (Fiol and O'Connor, 2003).

Innovativeness

Individuals' adoption decision is closely associated with the characteristics of their own and the social system in which they are, both of which factor into the organizational change diffusion process.

Adopter categories. Adopter categories are arguably among the best-known concepts in diffusion theory, represented as the bell-shaped normal distribution of adopter frequency as follows: 2.5 percent, venturous innovators; 13.5 percent, early adopters exerting opinion leadership; 34 percent, deliberate early majority; 34 percent, skeptical late majority; and 16 percent, laggards. Unlike innovators and early adopters who make relatively independent decisions, subsequent adopters are affected by social influence in their decision (Dearing, 2009).

As each adopter category has unique characteristics in terms of socioeconomic status, personality values, and communication behaviors, each individual's willingness, ability, and tendency to adopt a certain change also vary depending on his/her knowledge of, interest in, and evaluation of it. This heterogeneity is a partial yet significant reason for the difference in adoption decisions among potential adopters (Young, 2009). Therefore, a change permeates the organization with less friction when individual members can make an adoption decision voluntarily at their own paces rather than forced to do so at once (Porras and Robertson, 1992; Zhou, 2008).

Organizational characteristics. Organizational innovativeness reflects the characteristics of an organization and its leaders, as well as those of its members. For example, organic systems, characterized by flexible roles and responsibilities, decentralized decision-making structures, and lateral communications are "more able to adjust rapidly to environmental and technological uncertainties" than mechanic systems (Harrison, 2005, p. 87). For an organization to be innovative, there should also be leaders who perceive needs for change (Garland *et al.*, 2010) and offer necessary resources for its occurrence (Damanpour and Schneider, 2006). The innovativeness of an organization and its leaders becomes more explicit when it comes to costly or radical change initiatives (Day, 1994). In addition, Kotter (1996) maintained that most failures in organizational change efforts should be attributed to failure to establish sufficient organizational readiness for change (ORC). Members with high ORC, "the extent to which organizational members are psychologically and behaviorally prepared to implement organizational change" (Weiner *et al.*, 2008, p. 381), invest and persist toward change endeavors even when confronted with obstacles. The extent to which an organization can embrace change is proportional to its members' capacity to deal with it.

Innovation-decision process

An individual's decision regarding whether to adopt an innovation requires an array of choices, actions, and evaluations over time, undergoing five stages:

(1) knowledge, getting to have an initial understanding of an innovation;

(2) persuasion, forming an attitude toward it;

(3) decision, deciding whether or not to adopt it;

(4) implementation, implementing it; and

(5) confirmation, maintaining their adoption decision when reinforced or revoking it if otherwise (Rogers, 2003).

This innovation-decision process, which describes an individual's optional decision making, informs change leaders of ways to effectively harmonize a preceding organizational decision (i.e. a change initiative) with members' voluntary contingent decision to adopt it. In other words, along with the introduced concepts from innovation diffusion theory thus far, the innovation-decision process would be well integrated with CM models – discussed below – in diffusing and leading planned changes among the target adopters in the organization. Two caveats: first, every organization is not necessarily collectivistic in its cultures (Cummings and Worley, 2005; Rogers and Steinfatt, 1999); second, individuals take the empirical-rational approach, as well as the normative one, to their choice of behavior (Chin and Benne, 1985; Porras and Robertson, 1992).

CM models

Building on an understanding of innovation diffusion theory, this study referred to the CM/OD literature for an interdisciplinary synthesis. Succinctly presented hereafter are well-established change models encompassing Action Research (AR), Burke's Simple Phase Model (SPM), Rothwell/Sullivan's Change Process Model (CPM), and Appreciative Inquiry (AI) that appear in part or in full in multiple CM/OD textbooks used in university courses (e.g. Cummings and Worley, 2005; Rothwell and Sullivan, 2010). Model selection did not hinge on identifying those superior to others, but in seeking one specific approach best suited to the goals of this study.

AR

AR has long served as the foundation for organizational change efforts since Lewin's (1946) introduction of it (Rothwell and Sullivan, 2010). AR, defined as "the process of systematically collecting research data about an ongoing system […]; feeding these data back into the system; taking actions […]; and evaluating the results of actions by collecting more data (French and Bell, 1990, p. 99), is recognized for its focus on problem-solving and diagnostic interventions for change.

The general AR procedure proceeds from entry and start-up, through assessment and feedback, gathering information and feedback about the need to design actions; action planning, collaborating with key stakeholders to create plans and activities to achieve the preferred goal; intervention, implementing, monitoring, and adjusting the planned actions; evaluation, helping key stakeholders evaluate the progress of and the learning from the change effort; and adoption, change maintained by members of the organization, to separation or closure of the change effort (McLean and Sullivan, 1989).

AR has been open to continuous applications and evolution. In fact, reflections on AR's project-based linear approach have been stirred over time when the multitude, magnitude, and speed of required changes have been overwhelming. A philosophical challenge to AR's problem-oriented, gap-closing approach has also emerged, highlighting positive change and organizational transformation.

Simple phase model

Pointing out that too many change efforts are concurrent in organizations, Burke (2008, 2011) reinvented the traditional AR model into SPM in which phases overlap. In proposing the model, Burke depicted organization change as a process in which progress occurs in spirals, not on a linear path, and highlighted the importance of the change leader's role throughout the process.

In particular, the change leader's activities are specified in four phases of SPM:

(1) pre-launch, examining the management's view of and external environments for change and establishing a need for and the direction of a change initiative;

(2) launch, communicating the need for change and implementing initial activities while dealing with resistance;

(3) post-launch, furthering the change implementation and managing subsequent instability, uncertainty, and disorder with perseverance and patience allowing creative forms to emerge; and

(4) sustaining the change, dealing with the unanticipated, maintaining the change momentum and succession, and launching new initiatives again.

Change process model

Acknowledging SPM as one of the most relevant change models in the era of the burst of change, Rothwell and Sullivan (2010) attempted another contemporary application of the traditional AR model into CPM, which is valued both for offering a conceptual synthesis of numerous change models and for presenting the research-based competencies required of change leaders.

CPM involves four major phases that blend with each other:

(1) marketing, identifying the need for change and helping decision makers to become aware of the change benefits and the change leader's competencies;

(2) pre-launch, building relationships and clarifying expectations;

(3) transformative launch, with four sub-phases of scanning what is and what should/could be with clients, planning actions using relevant techniques and methods, acting on what was planned, and re-acting in response to the feedback and learning from the previous phases; and

(4) separation, ending a change process with mutual trust and agreement.

While SPM and CPM addressed the limitations of the traditional AR model by taking the whole systems approach to organizational change, both models remain consultant-driven and normative-reeducative.

Appreciative inquiry

AI is defined as "the cooperative co-evolutionary search for the best in people, their organizations, and the world around them" (Cooperrider *et al.*, 2008, p. 3) and features "a philosophy and orientation to change that can fundamentally reshape the practice of organizational learning, design, and development" (Watkins and Mohr, 2001, p. 21). AI has steadily diffused as another effective change approach, offering philosophical, as well as procedural, guidance for those pursuing positive change in the organization.

The procedure of AI consists of the following stages: discovery, appreciating the best by focussing on the most alive and effective times; dream, envisioning a positive future based on the positive history; design, creating the structure and generating activities to articulate the envisioned future; and destiny (deliver), delivering on propositions co-created in the dream and design phases and sustaining the change (Cooperrider and Whitney, 2001).

Unlike the (traditional/contemporary) AR models, AI places greater emphasis on strength-based co-creation of shared goals among members and inclusive communication throughout its change process. At the same time, however, similarities include greater attention to the entire organization than to individuals with regard to the diffusion of changes and prescriptive nature of their conceptualization.

CM models at a glance

Figure 1 offers a summary of the introduced CM models.

Organizational change diffusion model

Diffusion research has focussed on individuals' adoption decisions through empirical investigations, while many CM models are grounded in insights into the practice of implementing change initiatives in organizations. In an attempt to integrate the prescriptive and empirical arguments and the normative and rational perspectives, this study conceptualized the organizational change diffusion model as the Diffuse Model through the synthesis of research findings and procedural components offered by multiple CM models and innovation diffusion research.

The diffuse model

Figure 2 demonstrates the phases in the Diffuse Model and how they correspond to those in the aforementioned innovation-decision process and the CM models.

Figure 3 offers a visual representation of the model, which is unique in having a sequential but recursive flow of phases with the self-sustaining phase. The role of diagnosis and evaluation were considered fundamental, as shown by its placement at the base level; the spontaneity of self-sustaining diffusion and its ultimate importance were visualized by its placement above the implementation-related phases.

The model consists of five phases:

(1) diagnosis;

(2) framing in forethought;

(3) unleashing;

(4) self-sustaining; and

(5) evaluation.

Diagnosis. The failure of organizational change efforts may be partially but crucially attributed to two situations: overlooking a deliberate assessment and taking action with little diagnostic support (Harrison and Shirom, 1999). Diagnosis provides an analytic big picture for the following diffusion strategies, while serving the basis for evaluation.

In this initial phase, every aspect surrounding a change initiative should be assessed by asking probing questions such as: what are the attributes of the change; who are the target adopters; what does the organizational communication network look like; how

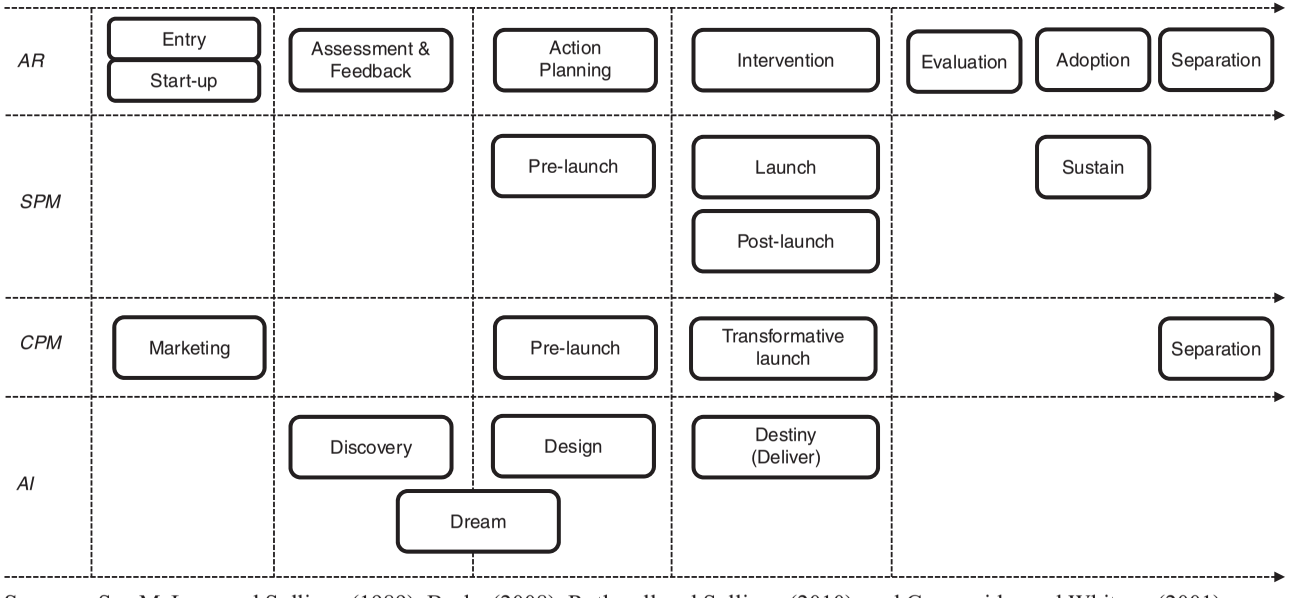

Figure 1.
Summary of the CM models

Sources: See McLean and Sullivan (1989), Burke (2008), Rothwell and Sullivan (2010), and Cooperrider and Whitney (2001), respectively, for the complete figures and descriptions

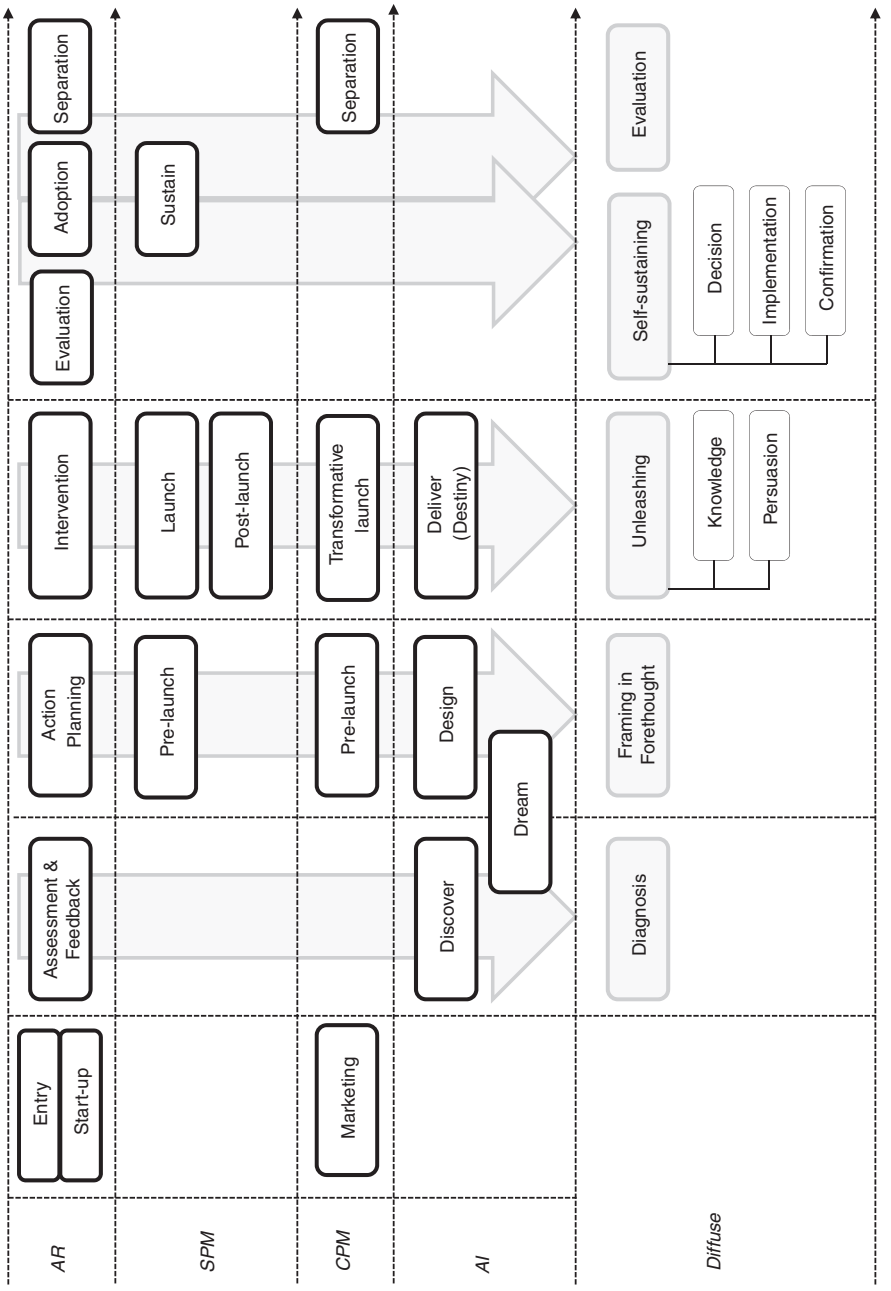

Figure 2.
Phases in the diffuse and CM models

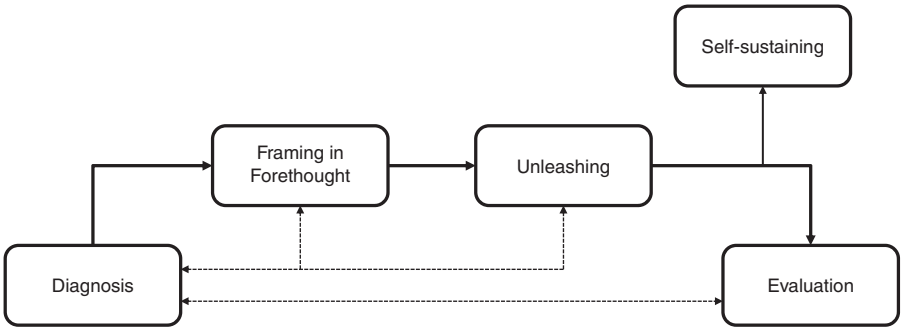

Figure 3.
The diffuse model

does the change fit the organization's characteristics; what are the organizational leaders' attitudes toward the change; and how ready are the organizational members for the impending change? Answers to these questions are critical predictors of whether the proposed change fits and succeeds in the organization, serving as fundamental information for subsequent phases. The answers might also be used to determine who is to blame – individuals, the organization, or the change itself – when the change initiative fails to diffuse.

Diagnosis should be conducted in a recursive manner (Alderfer, 1980), spanning most of the following phases so that change leaders can keep track of changing dynamics during the diffusion process. Especially important is to do so with special attention to the communication patterns and emergence of resistance among people because things often proceed unlike the initial diagnosis such that, for example, predicted supporters or resisters actually do the opposite (Burke, 2011).

Framing in forethought. This is the phase in which an effort is made to bridge a proposed change with visionary possibilities through framing in forethought.

As individuals "anticipate the likely consequences of their prospective actions" (Bandura, 1989, p. 1179), change leaders should exercise forethought of a change initiative's consequences that might be "desirable/undesirable", "direct/indirect", and "anticipated/unanticipated" (Rogers, 2003). Timing and organizational situations are subjects of forethought as well. Sometimes, a change may bring about organizational inequality that outweighs the advantages; excessive change attempts may damage the dynamic equilibrium of the organization, causing fewer changes to be successfully adopted. Not only can a certain change have negative consequences but issues may also arise in the ongoing process. For example, later-adopting individuals may either endure pressure and disadvantages until they eventually adopt the change, or resist it; managers may find that employees are being forced to adopt a change in exchange for their loyalty to the organization and trust in management (Smollan, 2013). Considering that all these downsides might boil down to an effort in vain or, even worse, organizational failure, forethought is an essential activity.

With forethought, the effective framing of a planned change is critical because, as repeated, individuals' perceptions toward the change are key to their adoption decision. The act of framing is "to select some aspects of a perceived reality and make them more salient in a communicating text" (Entman, 1993, p. 52) so that the impact on people's perception would be maximized. For example, the overall attributes of a proposed change, whether it intends to fix negative problems or foster a positive example, could

be framed in an advantageous and compatible way; the anticipated desirable and direct consequences could be framed from the respective standpoint of each stakeholder so that all intertwined bodies share mutual understandings about the change and find plausible rationales for voluntarily adopting it. The framing goes further to inspire people and establish a powerful context because people's behavior is chosen at the intersection of their personality and perception of an environment (Lewin, 1946). For example, using Herscovitch and Meyer's (2002) notion of "want to" (i.e. value the change), "have to" (i.e. have little choice), or "ought to" (i.e. feel obliged), Weiner (2009) highlighted the frame of the motive, we want and believe we can, to promote members' commitment and efficacy in preparing an organization for change; putting an emphasis on framing an environment and setting tone, Kotter (1996) suggested first establishing a sense of urgency for leading change.

Moreover, communications strategies should be framed in forethought of interpersonal and systematic communication networks so as to assign key players – formal/informal opinion leaders, predicted resisters, interpersonal and departmental-ties, and information communication systems – to relevant roles. They need to be credible for informative communications and rational and resonant for persuasive communications. The framing should also be open to modifications and redefinitions to ensure the more inclusive and responsive evolution of communications along the way.

Unleashing. This is the phase in which the diffusion plans are unleashed to transform a change initiative from an organization's collective/authority decision to the subject of each member's adoption decision.

Information is to be officially shared across the organization to make everybody aware of the change since an individual can only adopt a change after coming to know it. Rogers (2003) and Hiatt (2006), respectively, put the knowledge stage in the innovation-decision process (knowledge, persuasion, decision, implementation, confirmation) and the awareness stage in the ADKAR change model (awareness, desire, knowledge, ability, reinforcement). Along with many communication channels, ICT is an efficient vehicle for informative communications due to its cost-effective provision of access to vast information and to a "long tail" feature that enables even the tiny to reach out to many (Anderson, 2008). Its effective use can help with communications by offering overarching purposes and specific details on diverse concerns, providing up-to-date facts, disseminating desirable consequences, and repeating messages over time.

Simultaneously, time and resources need to be effectively allocated to opinion leaders so that they may readily engage in the diffusion process. Identified formal/informal opinion leaders should have appropriate and timely information framed in the previous phase and necessary resources to better exercise their persuasive power with their target audience. Opinion leaders as change agents help expedite the time needed for a proposed change to reach beyond a critical mass of adopters, inducing less resistance due to their influence on their human networks (Rogers, 2003). In other words, a focus on empowering opinion leaders, who generally fall into the early adopter category of < 20 percent of the population, will help tip an epidemic of adoption decision by more than 80 percent of the entire population of early majority, late majority, and laggards – conceptually well-matched with the "80:20 Rule" or the "Pareto Principle" that argues a few contribute much of the effect in any phenomenon (Craft and Leake, 2002).

Meantime, attention should be paid to preventing and dealing with disruptive communication, one of the common inhibitors of change diffusion. Considering that rampant negative communications usually stem from a lack or misunderstanding of

information that may develop into a vicious cycle of rumors that eventually undermine organizational fundamentals, the importance of communication is highlighted here again.

Self-sustaining. Once diffusion is successfully unleashed to a critical mass – the barometer of a change diffusion's potential success, it is likely to enter the self-sustaining phase in which the change diffuses spontaneously through the function of organizational dynamics, such as tacit norms, peer pressure, and everyday conversations at work.

In this phase, people become more open to adopting and implementing the change, rather than rejecting it. The deliberate early majority, following early adopters such as opinion leaders, would begin to adopt it, talk about their decision, and exert a conscious/unconscious influence on the not-yet-adopted. Skeptical late adopters are now surrounded by those who have already crossed the threshold toward adoption and assisted in jumping on the bandwagon (Granovetter, 1978; Markus, 1990). In turn, the same process occurs with the remainder.

While the decisions are still being made by each of individuals, stories and information regarding perceptions and consequences of the adopted change spread through a variety of identified/unidentified weak ties across the organization. This phenomenon would be more quickly spurred by ICT systems that help promote interactive exchanges of information among all people. Thus, building a diffusion-friendly ecology in an organization, in terms of both interpersonal communications and communication technologies, should be an ongoing endeavor in the face of change.

Change would be better sustained with the support of external (e.g. recognition, rewards) and internal (e.g. satisfaction, other benefits on a personal level) reinforcement, the last stage in the ADKAR change model (Hiatt, 2006). Upon implementation, individuals go through the confirmation stage to determine whether to continue their adoption decision or revoke it if its effect turns out differently than expected (Rogers, 2003).

Living systems, faced with change, self-organize and create new reality (Pascale *et al.*, 2000). Thus, the active role of change leaders is not as pronounced in this phase as in the previous ones. Instead, they are tasked with feeding back and forth with people, facilitating communications and arranging reinforcements, monitoring the diffusion pattern for new change efforts, and moving into the evaluation phase.

Evaluation. All strategy implementations, spawned consequences, and lessons learned throughout the change diffusion effort should be put together in this phase. A solid evaluation and effective communications about it with stakeholders reinforce the values of the diffusion effort and the change leaders as well.

For evaluation, classic approaches such as Kirkpatrick's model have utility. The four levels can be applied as follows:

(1) reaction to the introduced change including either/and/or an adoption (voluntary, forced) or resistance;

(2) learning about the organization-change fitness, the appropriateness of information transfer to individuals, and the functionality of communication channels;

(3) behavior as reflected in the rate of adoption and utilization of the change; and

(4) results of the change's desirable, anticipated, and direct consequences and their opposites.

Business impacts and bottom-line values created by a change initiative are also weighty criteria in business organizations (Phillips and Phillips, 2006). Evaluation in this regard involves measuring the degree to which anticipated desirable business impacts were produced, financial returns on direct and opportunity investments were secured, and unforeseen counter- or by-products were resulted. Then, the actual business impact and return on investment (ROI) should be compared to the ones anticipated earlier.

Equally important is the conduct of formative evaluation, which offers specific information regarding the intervention for its improvement in the middle of its implementation (Hawe *et al.*, 1990). This ongoing feedback method is necessary because an introduced change continues to evolve as it unfolds (Ashley, 2009) and the interventions should react accordingly. A follow-through evaluation is also advised because a successfully unleashed and seemingly self-sustaining change is neither a confirmation of continuance by individuals nor a guarantee of ultimate success of the change effort. Adopting a change is one thing; continuing it is another (Rogers, 2003).

Conclusion

Druckman and Bjork (1991) asserted that over 60 percent of organizational change strategies are abandoned very quickly. While this sounds a bit drastic, such an assertion paradoxically stresses the importance of managing launched change efforts (Lundblad, 2003). This study addressed the advisability of innovation diffusion theory for enhancing the adoption/execution success rate in leading change in organizations. In particular, in offering an organizational change diffusion model this study integrated the empirical-rational approach and research-based multidisciplinary insights of innovation diffusion theory with the CM literature. Also, recommendations for practice and research are intended to invite critical responses and further discussion to enrich discourse on the diffusion of changes in organizations.

Suggestions for practice

In consultation with innovation diffusion and CM/OD research, this study integrated practice- and research-based knowledge into the conceptual CM model of Diffuse. The first suggestion is that CM professionals undertake the proposed phases to ensure that they conduct the up-front and on-the-go diagnosis, frame communication strategies in forethought of consequences and adopting units, allocate resources effectively, help sustain diffusion, and evaluate the processes and results.

Among other things, the proposed model emphasized effectiveness and efficiency in leading change efforts by suggesting resource concentration on a few positively or negatively influential individuals and utilization of communication networks. The content strategy in this regard was to frame a change to inspire people and establish a powerful context as stories were proven effective in examinations of organizational-culture change (Briody *et al.*, 2012). Specifically, stories and narratives could be created by/for opinion leaders, themes and nuances delivered by/for weak ties, and details and up-to-date information posted by/for ICT systems to help with communications. The process strategy was to identify and leverage opinion leaders and organizational communication networks, which could be assisted by use of social network analysis (SNA). SNA is a methodology used to reveal the interpersonal network structure and pivotal actors among social entities (Hatala, 2006), and thus would well serve the process strategy in its delivering the content strategy.

Adopter categories in diffusion theory might be matched with a specific group of constituents in a conventional hierarchy of organization – innovators with top management; early adopters with front-line managers, immediately connected with both top management and many employees; and early and late majorities with most employees. Therefore, when top management pursues an initiative to trigger constructive changes, CM professionals should be prompted to collaborate with middle managers, the likely early adopters and opinion leaders, in effectively diffusing it among the members. This partnership would lead the initiative to a more rapid entry into a critical mass and make a virtuous circle of managers' example-setting, accelerating diffusion and reinforcing their leadership.

This study tacitly discouraged the operational involvement of innovators with authority (e.g. CEO, top management). A considerable proportion of failures in change efforts may be attributed to their power-based unilateral communication or excessive interference with the diffusion process (Backer *et al.*, 1986; Block, 2000; Wisdom *et al.*, 2014). Their championing must be critical to an initiation of and support for a change effort, but the dynamics of organizational change is more "multifaceted than change initiators typically assume" (Jacobs *et al.*, 2013, p. 772). Therefore, the proper assignment of the roles of innovators, change leaders, and change agents should be a crucial consideration in strategizing diffusion efforts.

For an interpretation of individuals' non-adoption, this study suggested that system-centric thinking should precede the individual-blame orientation (Caplan and Nelson, 1973). It might be a biased premise to state that every organizational change effort is flawless. Rather, a change that fits poorly with the organization's culture and people can hardly diffuse. Neither can one that fails in setting appropriate timeframes and communication strategies for each adopter category and individuals in the categories. Therefore, the root cause analysis of adoption/non-adoption (diffusion/non-diffusion) should proceed from the change initiative itself, to the systems, and then to the individuals.

Recommendations for future research

This study is conceptual in nature despite its heavy reliance on empirical research in making arguments. Therefore, future research could test the validity of this study's arguments with such factors as leadership styles, organizational characteristics, and various communication channels at play in the research design. Case studies or empirical comparisons that examine these factors in relation to whether or to what extent organizational change initiatives succeed would help determine the scientific rigor of the arguments.

Recommended also is a further integration of innovation diffusion and CM research. The review of innovation diffusion theory and selection of the CM models for this study were not exhaustive. Rather, this study shed light on and called for potentially promising collaborations between the two schools. An integrated approach would elaborate on considerations of the CM models and simultaneously serve the field's proposition about engagement with multi-disciplines. Examples include an examination of the change leader's competencies in consideration of the roles indicated by this study or of CM failure cases to explore the applicability (or limited applicability) of relevant elements of diffusion theory. Another contribution would require delving deeper into whether the specific insights of diffusion theory apply to the organizational CM context. For example, can organizational change diffusion be explained with the notion of *contagion* – people adopt

when they "come in contact with" prior adopters (Young, 2009, p. 1902) – as occurs in the marketing arena (Bass, 1980; Mahajan and Peterson, 1985)? This vein of scholarly inquiry should be a desired follow-up to the initial attempt at interdisciplinary integration.

Extended research opportunities may be found in areas in which previous studies have offered conflicting results or that have received infrequent attention. Examples may include research on the relationship between organization size and innovativeness – many studies have argued for the presence of a positive linear relationship in this topic (e.g. Ettlie and Rubenstein, 1987; Laforet, 2008) while others have stated the opposite (e.g. Kamien and Schwartz, 1975; Cohen and Klepper, 1996) – and SNA research for empirically examining and/or comparing the influence of formal and informal opinion leadership on organizational change diffusion.

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