A change management process: Grounded in both theory and practice

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ABSTRACT *There exists in the literature a number of change models to guide and instruct the implementation of major change in organisations. Three of the most well known are Kotter's strategic eight-step model for transforming organisations, Jick's tactical ten-step model for implementing change, and General Electric (GE)'s seven-step change acceleration process model. This paper introduces a framework that draws from these three theoretical models but is also grounded in the reality of the change process at a Fortune 500 defence industry firm. The purpose of the paper is to provide guidance to the practitioner leading an organisational change process. This guidance is grounded in both theory and practice. The guidance is further enriched by the demonstrated use of such methodologies as mind mapping, lessons learned, storytelling and metaphors.*

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MODELS OF THE CHANGE PROCESS

Three models have stood as exemplars in the change management literature. The first model is Kotter's (1995) eight–step model for transforming organisations. Kotter's model was developed after a study of over 100 organisations varying in size and industry type. After learning that the majority of major change efforts failed, Kotter couched his model as a way of avoiding major errors in the change process. It is best viewed as a vision for the change process. It calls attention to the key phases in the change process. Two key lessons learned from the model are that the change process goes through a series of phases, each lasting a considerable amount of time, and that critical mistakes in any of the phases can have a devastating impact on the momentum

of the change process. Kotter's model is aimed at the strategic level of the change management process.

Jick (1991a) developed a tactical level model to guide the implementation of major organisational change. His ten-step approach serves as a blueprint for organisations embarking on the change process as well as a way to evaluate a change effort already in progress. He notes that implementing change is an ongoing process of discovery, with thoughtful questions continually being asked throughout the change journey. Jick states that implementation is a blend of both art and science. How a manager implements change is as important as what the change is. How well one does in implementing a particular change depends ultimately on the nature of the change, on how sensitive the implementers are to the voices in the organisation, and on the recognition that change is a continuous, not a discrete process.

The seven–step change acceleration process used at GE (Garvin, 2000: 131) follows closely Lewin's (1947) notion of unfreezing, movement and refreezing as the essential components of the change process. In essence, the model focuses on the leader's role in creating urgency for the change, crafting and communicating the vision, leading the change, measuring the progress of change along several dimensions, and institutionalising the change. Institutionalising the change, or the refreezing, involves changes in the organisational design factors, ie creating a fit of systems and structures to enable change. Kerr (quoted in Garvin, 2000), one of the developers of the model, refers to the series of seven steps as a pilot's checklist. According to Garvin (2000) checklists are used by even the most experienced pilots; yet they offer no new insights. Instead, they make existing knowledge more visible and accessible, ensuring that all essential steps are followed. Discipline, not discovery is the goal of the checklist.

The three models of the change process are configured in Figure 1 as a Mind Map. Mind mapping is a creativity and productivity enhancing technique that can improve the learning efficiency and capability of individuals and organisations (see eg Buzan, 1989; Mento *et al*., 1999). The Mind Map visually shows the intellectual roots upon which we drew. Three plus years of practical experiences, however, further shaped these theoretical constructs with change management at an anonymous defence contractor (ADC). Because of increased security measures after the events of 11th September, the defence firm requested anonymity after the write-up of the projects had commenced. Thus drawing lessons learned from both the theoretical literature and a practitioner's experience, this paper provides guidance to the leader of an organisational change process. This guidance is grounded in both theory and practice. Furthermore, it demonstrates and is enriched by the use of such methodologies as mind mapping, lessons learned, storytelling and metaphors.

COMPANY BACKGROUND

In the 1990s, the defence industry was greatly affected by a shrinking defence budget after the collapse of the former Soviet Union. The reduced defence expenditures caused a consolidation of firms within the industry. The division under study was acquired and became a core business area for the acquiring firm in the mid–1990s. Additional acquisitions created a *de facto* market of internal engineering organisations, all vying for the same corporate resources to fund both product improvements and new product development. A critical

*Figure 1
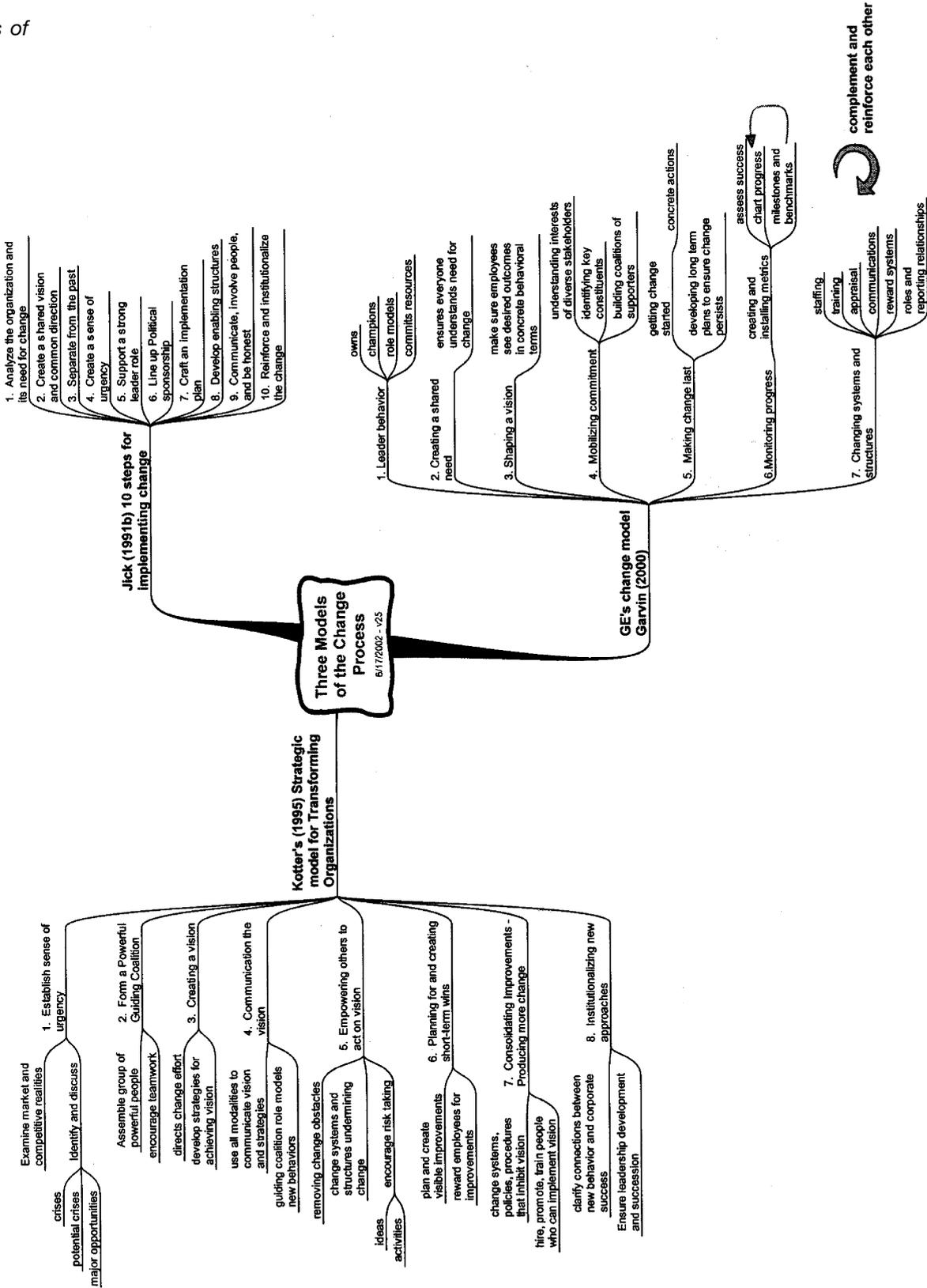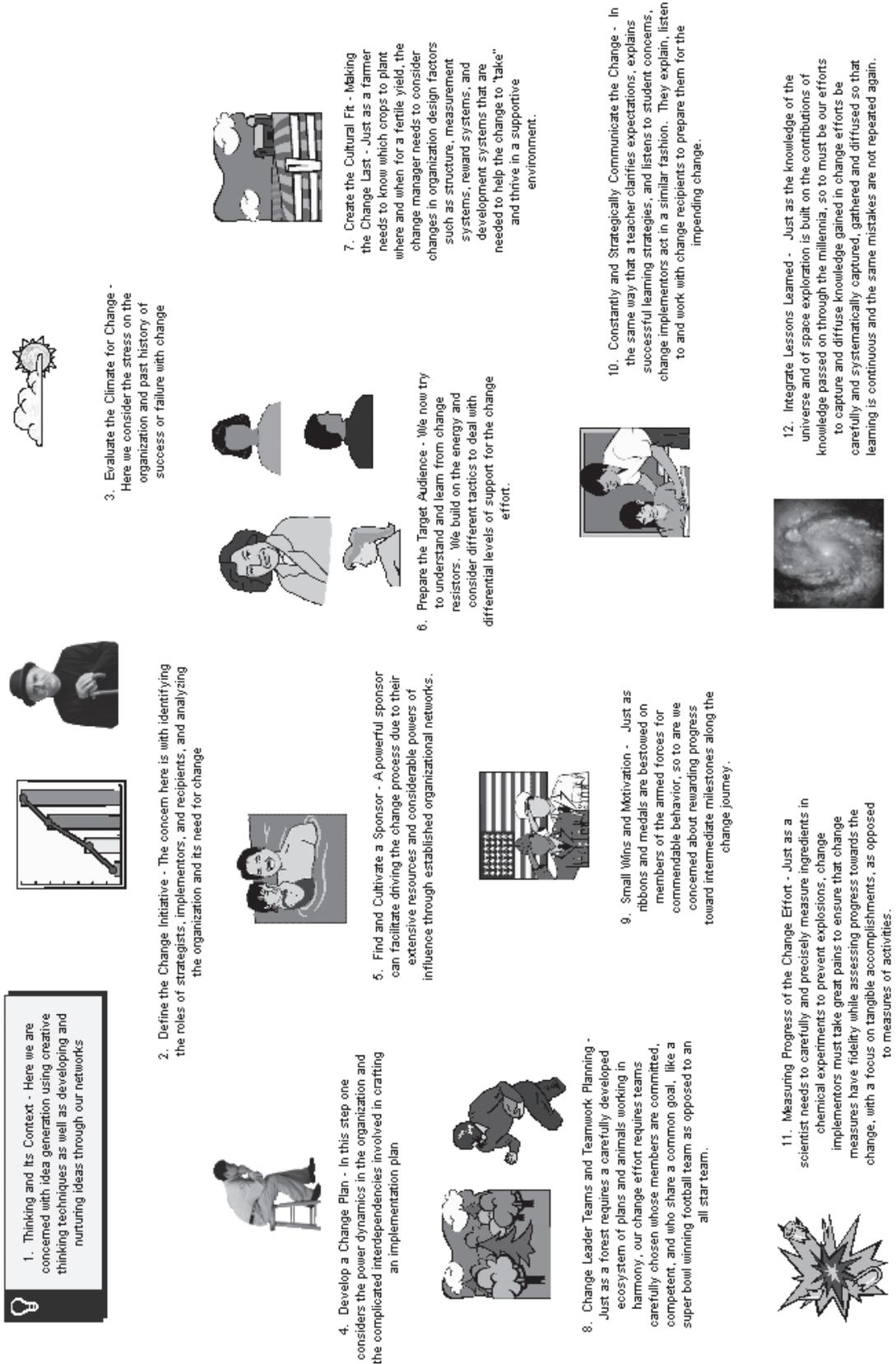Three models of
the change
process*

Figure 2   Visual metaphors

1. Thinking and Its Context - Here we are concerned with idea generation using creative thinking techniques as well as developing and nurturing ideas through our networks

2. Define the Change Initiative - The concern here is with identifying the roles of strategists, implementors, and recipients, and analyzing the organization and its need for change

3. Evaluate the Climate for Change - Here we consider the stress on the organization and past history of success or failure with change

4. Develop a Change Plan - In this step one considers the power dynamics in the organization and the complicated interdependencies involved in crafting an implementation plan

5. Find and Cultivate a Sponsor - A powerful sponsor can facilitate driving the change process due to their extensive resources and considerable powers of influence through established organizational networks.

6. Prepare the Target Audience - We now try to understand and learn from change resistors. We build on the energy and consider different tactics to deal with differential levels of support for the change effort.

7. Create the Cultural Fit - Making the Change Last - Just as a farmer needs to know which crops to plant where and when for a fertile yield, the change manager needs to consider changes in organization design factors such as structure, measurement systems, reward systems, and development systems that are needed to help the change to "take" and thrive in a supportive environment.

8. Change Leader Teams and Teamwork Planning - Just as a forest requires a carefully developed ecosystem of plans and animals working in harmony, our change effort requires teams carefully chosen whose members are committed, competent, and who share a common goal, like a super bowl winning football team as opposed to an all star team.

9. Small Wins and Motivation - Just as ribbons and medals are bestowed on members of the armed forces for commendable behavior, so to are we concerned about rewarding progress toward intermediate milestones along the change journey.

10. Constantly and Strategically Communicate the Change - In the same way that a teacher clarifies expectations, explains successful learning strategies, and listens to student concerns, change implementors act in a similar fashion. They explain, listen to and work with change recipients to prepare them for the impending change.

11. Measuring Progress of the Change Effort - Just as a scientist needs to carefully and precisely measure ingredients in chemical experiments to prevent explosions, change implementors must take great pains to ensure that change measures have fidelity while assessing progress towards the change, with a focus on tangible accomplishments, as opposed to measures of activities.

12. Integrate Lessons Learned - Just as the knowledge of the universe and of space exploration is built on the contributions of knowledge passed on through the millennia, so to must be our efforts to capture and diffuse knowledge gained in change efforts be carefully and systematically captured, gathered and diffused so that learning is continuous and the same mistakes are not repeated again.

imperative for the divisions internally, and the company externally, was to learn how to adapt more quickly to this changing environment. The munificent environment of the 1980s was being replaced by a more parsimonious context in the 1990s. Given this environmental shift, it became imperative for 'our' division to have an effective change management programme. Two of the authors became involved with this project, one very directly and one in a consultative capacity.

The paper will explicate 12 steps that are recommended when one wants to implement change. These 12 steps are based on lessons learned from the change models discussed above filtered through the actual experience that occurred throughout the late 1990s. These 12 steps are shown holistically as visual metaphors (Morgan, 1998; Davenport, 1999) in Figure 2. They are detailed in what follows.

A FRAMEWORK FOR CHANGE

Step 1: The idea and its context

It is important as the starting point of a change effort to highlight the idea for what needs to be changed or what new product should be introduced or what particular innovation might bring a significant lead over competitors. A source for ideas for improving the organisation can arise through creative tension (Senge, 1990). Senge notes that creative tension evolves from clearly seeing where we want to be, our vision, and telling the truth about where we are now, our current reality. The gap between the two generates a natural tension. In an interview (Tichy and Charan, 1989), Jack Welch similarly notes a key characteristic of any leader is to first face reality.

There is a key distinction between leading a change effort around ideas developed through creative tension as opposed to implementing fixes to current organisational problems. When one focuses on problem solving, the energy to change comes from the desire to escape an unpleasant status quo. With creative tension, the energy for the change comes from the vision, of what one wants to create, juxtaposed with the current reality. With problem solving, the energy for the change diminishes as the problems become less pressing and the situation is improved. Senge notes that the energy for change that drives the problem–solving process is extrinsic because it represents a way to escape from the status quo. Change driven by creative tension tends to be intrinsic. The extrinsic/intrinsic orientation can have a significant impact on the consequences of the change effort. In the context of a learning organisation, extrinsic motivation for change produces adaptive learning, whereas change driven by creative tension yields generative or new learning. Recognising change (the need for, the idea of, and the context thereof) is just the first step.

Step 2: Define the change initiative

Defining the change initiative tracks closely with Jick's step 1 of analysing the organisation and its need for change. It is useful at this point to define the roles of the key players in all change efforts: Strategists, implementers and recipients (Jick, 1991a). Change strategists are responsible for the initial work: Identifying the need for change, creating a vision of the desired outcome, deciding what change is feasible, and choosing who should sponsor and defend it. The vision creation assists in the formation of creative tension that can yield generative learning. Change implementers are the ones who make it happen. Their task is

to help shape, enable, orchestrate and facilitate successful progress. Change recipients represent the largest group of people that must adapt to the change. In the case of a new product development, the end user is also a recipient who must be convinced that the change will be beneficial to them. If the initiative lacks credibility with any of the targeted audiences, the initiative is dead before it even begins.

The actual case was a late-1990s project that involved the development of a tactical radio system for the military. The idea was that the revolution in the cellular market would allow for the development of one radio whose software could be reprogrammed to mimic any of the military's current inventories of radios. The change management team was successful in defining the change and getting the target audience behind them.

Step 3: Evaluate the climate for change

This step is similar to Jick's step 1 (analyse the organisation and its need for change) but with further elaboration. Both change strategists and implementers must implicitly understand how the organisation functions in its environment, how it operates, and what its strengths and weaknesses are. Such understanding will assist in developing alternative scenarios that could be created by the proposed changes. This will facilitate crafting an effective implementation plan. As part of this analysis, change masters need also study the company's history with previous change. Although failures of the organisation in implementing previous change efforts do not forever doom an organisation to future failure, Dalziel and Schoonover (1988) suggest that these patterns of resistance are likely

to be repeated. In such situations, a gradual non-threatening, and more participative process is advocated to break the failure syndrome.

The authors' tactical radio project experience reinforced the need for assessing the company's readiness to support a change initiative. Two indices were utilised to evaluate the readiness of a company to change. One measure evaluates the current organisational stress of the company (see Beer's matrix for assessing the impact of a change effort; Beer, 1980: 58). No product development or improvement ever occurs without someone else's effort being hindered. There is the stress of everyone competing for the same common resources — money, people and sponsorship. A non-trivial hurdle for any new initiative is not the competitor from outside your company, but rather the one you face down the hall. The second measure is historical readiness to perform new projects. Scepticism is very natural when the change is a Big Hairy Audacious Goal (the BHAG components of a vision of effective companies, as defined by Collins and Porras, 1996). Patterns of the past are often hard to break. It is helpful to champion a concerted effort of using lessons learned (Daudelin, 1996). Learning from past development efforts will avoid making errors in the planned change. Executives and managers will continue with familiar patterns of operations unless they are taught a more retrospective approach. The lessons learned methodology is further discussed in step 12.

Compatibility of change goals with the company's Long-Range Strategic Plan (LRSP) is a significant plus. To gain support for the previously mentioned radio project, it was important to tie into ADC's LRSP goal of expanding into commercial airborne radars. The division's efforts were sold internally as

being part of an integrated avionics sales pitch. Most aircraft vendors want only one company to install the avionics, of which the radios and radar are the major components. This programme was sold on the idea that either the division could continue to buy the radios from the people against whom it was competing or could build its own in-house radio. This radar alliance created a silent partner rather than a vocal opponent. Three words to follow are to prioritise, focus and align your efforts such that you build an internal alliance(s) to support your efforts.

Step 4: Develop a change plan

This step tracks closely with Jick's step 7 — craft an implementation plan. At a minimum, the plan should include specific goals and provide detailed and clear responsibilities for strategists, implementers and recipients. A plan that does not solicit input with respect to both the content of the change as well as the process of the change will surely prove to be non-optimal. A proper balance between specificity and flexibility is key; too much specificity can lead to a plan that does not mesh well with evolving organisational needs.

When developing a plan for implementation, one must tailor the approach to the frame of reference (FOR) of the individual participants. A change will require the efforts of people at many levels in the company with many diverse roles. Each person will have their own FOR that will affect how resistant or open to the effort they will be. Some of the basic framing methods to consider are the hammer, the carrot, the challenge and the prestige (often useful with researchers). In all instances, creating the implementation plan is very much like planting seeds in a garden. Groundwork needs to be done

to discover what seeds will be most fruitful or whether the ground needs to be broken apart forcefully (the hammer) before anything will take root and grow. Many times, the approach also depends on the needed speed of implementation. Short-term pressures usually involve the hammer, but this does not win people for a long-term project. Listening to and actively seeking the involvement of the recipients of the change will prove fruitful in performing many of the later steps in the process. Getting people to see a future return on their personal investments today (carrot) is a successful method in long-term projects. FOR involves more than just deciding 'Pay me now or pay me later'. Rather, the proper balance must be reached between the use of power to ensure order compliance and the use of time to build commitment.

Hill (1994) offers insights on these issues when discussing power dynamics in organisations. She notes that the existence of organisational politics is a way of life. Political conflict can be viewed as a function of three variables — diversity, interdependence and competition for scarce resources. According to Hill, both precipitating and prevention factors exist in all organisations with respect to political conflict. The use of both positional and personal power is needed to successfully manage the interdependence between various stakeholders in the modern network organisations. Being cognisant of the change time frame and one's power sources segues to the most critical decision in implementing change with the tactical radio project, the sponsorship step.

Step 5: Find and cultivate a sponsor

This stage corresponds to both Kotter's (1995) notion of developing a powerful guiding coalition and Jick's (1991a) step

7 — line up political sponsorship. Kotter is referring to the support of powerful line executives who can help create a critical mass of support for the change. Jick tends to offer more specific guidance. He urges the recruitment of influential informal leaders and the development of a commitment chart. The commitment chart should help one to: Identify target individuals or groups whose commitment to the change is needed; define the critical mass needed to ensure the effectiveness of the change; develop a plan to gain the commitment of the critical mass; and create a monitoring system to assess the progress.

In the radio project, a single individual played the role of the sponsor. The sponsor is to be viewed as the person that will legitimise one's cause. The strategy used to win and keep a sponsor must be defined in the FOR. It must emphasise the needs, expected levels of pain for the organisation, clear goals and a time frame. Points for possible exit along the way must be indicated. Sponsorship is easier to win and maintain when the person believes their decision is not irreversible. If the sponsor does not show a real commitment, however, the resistance from the recipients will be significant, and one's ability to acquire the required resources will be more complex. The sponsor needs to be informed frequently and regularly of progress in order to adapt their talk or their walk to push the effort. He/she must possess a sufficient amount of organisation power and influence to obtain the resources required for success. The sponsor must express, model and reinforce the initiative for the maximum effect. He/she should be pushing to generate strategic convergence both vertically down and horizontally across the organisation. Recruiting the individual at the lowest level in the organisation to whom all the change recipients report is often a good choice. Implementation of the change occurs from the top down, but the content for the change must be developed from the bottom. A sponsor at too high a level may introduce unnecessary risk due to a lack of direct involvement.

A second ADC project involved a missile development programme. The authors' goal was for the sponsor to support the replacement of the current seeker portion of the missile with their own department's version. A sister department within their division was responsible for integrating the missile and was presently purchasing the seeker section from the major competitor. The VP responsible for the entire division was recruited as a sponsor. He had influence over the current Program Manager (PM). More importantly, the VP changed how success was to be measured for the PM. The measurement for success was changed from the number of units produced to the profit per unit produced for the firm as a whole. Without the actions of this sponsor, the PM would have, most likely, resisted change because there would have been little reward for the increased risk for making such a change. The sponsor expressed, modelled and reinforced the initiative. It was successful. In contrast, difficulty with sponsorship occurred on the AMC's radio project. Sponsorship was never secured high enough in the organisation to obtain an alignment of changing goals. While initially viewed favourably, the new product development activities were frozen when a potential large-scale merger was announced. It was never possible to change the FOR of the negative risk/reward ratio engendered by the proposed change at the time of the proposed merger. The sponsor was not sufficiently powerful to prevent the freeze on activities.

Step 6: Prepare your target audience, the recipients of change

This stage of the change process is best understood from the perspective of the recipients of the change. This issue is not clearly dealt with in any of the other three models of the change process. Jick (1991b) argues that change is not possible unless, at the very least, the change recipients accept the change. Change is not possible unless people are willing to change themselves. Jick makes the cogent points that change can be 'managed' internally by those who decide when it is needed, and how it 'should' be implemented. Actual implementation, however, occurs only when employees accept the concept of change, generally, and of the specific change, internally.

It has been observed that it does not matter whether the change is perceived as being a positive or a negative. Resistance is generated because the status quo will be affected. People are comfortable with knowns. The introduction of a change, even for the better, is an unknown. It adds stress to people. Specific strategies for dealing with resistance as well as the advantages and disadvantages of each approach can be found in Kotter and Schlesinger (1979). They advocate the use of focus groups, surveys and suggestions to bring the issues of resistance to the surface. Resistance to change efforts is directly related to how the situation is framed (Gabarro and Kotter, 1993). Speaking with the audience most affected by the change gives immediate feedback and allows the target to express their FOR. Resistance is a natural emotion that must be dealt with and not avoided. If one can look at the positive aspects of resistance to change, by locating its source and motives, it can open further possibilities for realising change.

Hultman (1979) states: 'Without resistance to change, we are skeptical of real change occurring. Without real questioning, skepticism, and even outright resistance, it is unlikely that the organisation will successfully move on to the productive stage of learning how to make the new structure effective and useful.' Resistance to change should have previously been considered at Step 3, 'Evaluating the climate'.

Step 7: Create the cultural fit — Making the change last

During the evolution of any change effort, the change must became rooted to the existing culture. In essence, organisation members need to accept and understand the fact that change is in reality 'how things are done around here'. In Kotter's step 8, failure to anchor the change initiative with the corporate culture is a grievous error. Step 5 in the GE change model deals with getting change started with concrete actions and developing long-term plans to ensure that change persists. 'Changing systems and structures' (step 7 in the GE change model) is concerned with altering staffing, training, appraisal, communication and reward systems, as well as roles and reporting relationships, to ensure that they complement and reinforce change. A strategic initiative that is congruent with the established organisational culture has a high probability of success. When a disconnect exists between the corporate culture and the change, culture can diminish the potency of the change initiative. If a conflict is expected, it should be discovered during the climate evaluation and the development of change plans steps. An adaptation plan can be created through a consistent vision, BHAGs and development of clear linkage between

strategic direction, core competencies and corporate culture. When this occurs and when the cultural changes are viewed as an investment over time rather than a quick fix or a *change de jour*, the likelihood of success is significantly enhanced.

Step 8: Develop and choose a change leader team

In his ten-step tactical model for implementing change, Jick (1991a) makes the observation that, in large-scale change, the leader plays a critical role in creating the corporate vision. The leader both inspires the employees to embrace the vision, and crafts an organisational structure that consistently rewards people who focus their efforts on pursuing the vision. In step 5 of the model, which deals with supporting a strong leader role, Jick takes the view similar to the one learned in the change process at AMC. A change leader team can better provide the necessary leadership role than can a single individual. A team can be carefully assembled to maximise the appropriate skill sets. Billington's (1997) review of the team literature found that there are three essentials of an effective team: Commitment, competence and a common purpose. Commitment refers to the achievement of specific performance goals. Core competencies of team members are a critical determinant of how effective a team can be. The best teams invest the time and the effort to explore, shape and agree on their purpose that is to be internalised both individually and collectively. The team must be self-energising and self-motivating in believing they are the agents of change. Diversity of skills and opinions makes a team strong as long as all share the vision. (Katzenbach and Smith, 1993).

In our radio project, there were seven people who did the necessary design, marketing and fieldwork. Team members had to rely and trust that their counterparts were equally committed to the change goal. They did have highly visible sponsorship. The sponsor would drop by the development lab and check the progress. He would bring sandwiches for dinner as the team worked late at night. He was available continually to listen to their concerns. He knew they all were motivated by the challenge (no carrot or hammer) of creating a new business area for the company. In all change efforts, timing is critical. Unfortunately, new business creation ceased to be a high priority when the LRSP shifted, owing to a proposed large-scale merger. When anti-trust issues subsequently killed the merger, new business creation again became a part of the LRSP. By that time the team was no longer together. Nor were they anxious to reassemble. They were no longer motivated by the thrill of the challenge.

Step 9: Create small wins for motivation

Creating short-term wins as a way to motivate employees is critical during a long change effort (Kotter, 1995). One must plan for and create visible performance improvements. Employees involved in those improvements should be recognised. Without specific important and visible short-term wins, people may give up and default to change resister status. A change team may be working on a BHAG that requires a multi-year effort. It is very difficult to keep the change leader team self-energised if they do not see any tangible benefits corresponding to their level of effort. The longer and more drastic the change, the more necessary it is for small victories to be celebrated. The further the goal is in the future, the

more important are the achievable goals that must be built as part of the roadmap to success. It is human nature to work on what we are measured against.

The constant battle for resources and the continual need to update the sponsor also drive the need for small victories. Often, the sponsor is in fear of over-commitment and must feel that positive progress is occurring. The small victories can be as simple as meeting a design milestone and having a special lunch or happy-hour event. The display of appreciation by the sponsor goes far in spawning more teamwork and opening the lines of communication. It is often through the informal small win celebrations that new ideas will surface. The authors' project experience has shown this to be true. New opportunities originated from ideas that were first surfaced at these informal gatherings. In essence, the small win events are transformed into brainstorming events. The more informal setting frequently results in the better mixing and generation of ideas.

Step 10: Constantly and strategically communicate the change

The concept of constantly communicating the change throughout the organisation is adapted from Jick's step 9 — 'Communicate, involve people, and be honest'. From the very beginning of the change effort, effective communication is critical. The process by which the change is introduced can set the tone among recipients with respect to acceptance or rejection. The goals of the communication effort should be: To increase the organisation's understanding and commitment to change to the fullest extent possible; to reduce confusion and resistance, and to prepare employees for both the positive and negative effects of the change.

At ADC, the focus was on communication with the sponsor and the strategists and implementers who held needed resources. Effective communication with the sponsor had been a recurring theme. The tides in a company will constantly be changing and so will the needs of the programme. As an effort becomes larger, often the resource power of the sponsor will be exceeded, and the sponsor either needs to draw additional support or to obtain sponsorship themselves. Communicating the message in the same way will not have the desired affect at the different levels of the organisation. It is important to tailor each communication to the FOR of the audience. The radio project sponsor failed to communicate strategically in his efforts to obtain higher-up sponsorship at the time of the proposed merger. The sponsor failed to recognise that the proposed merger had changed his superiors' FORs. His communication was no longer effective, as it was not couched in terms of how it would impact the merger.

Step 11: Measure progress of the change effort

This step is in concurrence with step 6 of GE's Change Acceleration Process, which is Monitoring Progress. This involves creating and installing metrics to assess programme success and to chart progress, using milestones and benchmarks. The notion of assessing the effects of change goes hand in hand with developing a small wins strategy (step 7) in order to motivate sustained effort for the change effort. Schaffer and Thompson (1992) caution companies to avoid the 'rain dance' of change improvement programme measurement that entails a concentration on activities, as opposed to tangible, measurable results. They recommend focusing on

results–driven programmes that bypass lengthy preparations, and instead aim for quick measurable gains within a few months. The key is to measure often only those variables believed to be logically related to important milestones in the change effort. In psychometrics, the idea is to avoid criterion deficiency, ie assessing the wrong or a deficient measure of the true concept one wants to assess.

Change progress needs to be measured at all stages of the programme, not merely at the end. In a recent *Business Week* article (Burrows, 2001), Hewlett Packard's CEO Carly Fiorina comments that business planning is similar to sailing in that 'you are going to need to tack at times'. Tacking is highly dependent upon knowing in what direction the winds are blowing. In creation of the cultural fit and in creation of the proper motivation when building the team, it was recognised that the proper measurements and reinforcements are critical to keeping the programme on track. Measurement is also concerned with all members involved in the change effort being crystal clear with respect to roles, goals and expectations. It has been observed that organisations too often forget to have the proper tools or information available to measure the amount of progress achieved. Using an example from the HP article, implementers were successful in changing the business into four organisations instead of 83 business units. This, however, required a new cost accounting system that lagged the changes. The company was claiming a certain level of financial benefit but was not measuring the proper characteristics to support this result. As the measurement system came on–line, managers were shocked to discover that the system was suffering a lack of financial accountability and transition costs were somewhat out of control. In a

similar manner, many people measure success on winning a contract. If the contract win is done at a price too low or under the assumption of too great a technological risk, however, the contract in actual financial terms is a loss with subsequent cost over runs and late deliveries.

Step 12: Integrate lessons learned

No other model of the change process directly deals with the process of generating a set of lessons learned through reflection. At the root of lessons learned is reflection. Reflection is a personal cognitive activity that requires stepping back from an experience to think carefully and persistently about its meaning through the creation of inferences (Baird *et al.*, 1997; Kleiner and Roth, 1997; Seibert, 1999). Reflection, using a set of techniques first suggested by Daudelin (1996), brings to light insights and learning themes (concepts) by directing and guiding change strategists and implementers to think actively about the learning that is going on during the change process itself. Reflection then connects learning directly to job performance and yields more relevant personal learning. Reflection is an extremely powerful way to learn from experience. It is a major component of individual learning, and individual learning is the building block for organisational learning. At the heart of the reflection process is the use of carefully thought out trigger questions. Research has shown that people are generally poor reflectors unless provided with questions about their experience as stimuli (Seibert and Daudelin, 1999). Very useful is a set of questions developed by the US Army in their After Action Review Process (AAR), as documented by Garvin (2000).

These questions are: (1) What did we set out to do? (2) What actually happened? (3) Why did it happen? and (4) What are we going to do next time?

'Those who forget the past are condemned to repeat it' is the quote that often comes to mind with respect to change efforts. At all times, not just at the end of a project, effort needs to be expended on a retrospective look at what works and what did not. These efforts allow for the continuous refinement of the evolving process. Many of the lessons learned should concentrate on the problems and solutions of dealing with both the formal and the informal organisation. Organisation design factors such as policies, procedures, compensation and organisational structure are just the tip of an iceberg when evaluating your organisation. Documenting the cultural norms, unwritten rules of work, the political system and informal leaders will serve you well in your use of lessons learned. The best companies are learning organisations that will not forget, but rather learn from the past.

CONCLUSION

The use of metaphorical storytelling (Botkin, 1999; Jensen, 2000) based on the theme of a ship embarking on a perilous journey facilitates the summation of the change stages encountered at the authors' firm. While preparing to embark on the challenging voyage, one needs to do certain things to improve the chances of success. It has to be clear in one's mind why one is taking this trip (*The idea and its context*). Next, one needs to have a fairly good understanding of exactly what one intends to accomplish by taking this voyage (*Define the change initiative*). It is always necessary to have some idea of what the weather will be

like when one intends to begin the journey (*Evaluate the climate for change*). Prior to departure, one must have an accurate set of nautical charts and sailing plans that will help to overcome obstacles and barriers in the person of pirates and rocks (*Develop a change plan*). Similar to Columbus, before embarking on the long voyage, one needs to line up a powerful and benevolent sponsor (*Find and cultivate a sponsor*). A sound step to take next would be to work with the selected crew in clarifying roles, goals and expectations that they need to be aware of during the duration of the voyage (*Prepare the target audience, the recipients of the change*). A further step is to make sure that the ship is capable of accomplishing the task and that the route chosen, given the expected storms and bad weather, is not beyond the structural integrity of the ship itself (*Create the cultural fit — making the change last*). Along these lines, one of the most important preparatory steps is to make sure the carefully chosen crew are committed, competent and share the same goal of a safe and exciting journey. People should work together like a well-oiled piece of machinery (*Develop and choose a change leader team*). There must be specific milestones or goals to reach during the journey to provide feedback with respect to how well and how fast one is sailing toward the objective. Also one should stop in various ports of call to celebrate one's good fortune in arriving safely and to let off steam after being at sea and alone for great lengths of time (*Create small wins for motivation*). It is important to let one's sponsor know on a regular basis how well one is doing, and to share with the crew why one is taking the actions one is taking, as well as taking the time to listen and learn from the suggestions of the crew (*Constantly and strategically communicate the change*). As the voyage

continues over months and years, it is necessary to consider the progress made, whether one is indeed going in the right direction or whether one has been blown off course. It is necessary to ensure also that the morale of the crew is positive and that the route and plan are flexible enough to accommodate changes in sponsors, and in the weather (*Measure progress of the change effort*). Finally, at the end of the journey, an after action review should be conducted so that knowledge gained through reflection is captured and disseminated among other ship captains and crews throughout the organisation who might be embarking on similar perilous journeys through the unforgiving environment (*Integrate lessons learned*).

All 12 steps are not to be regarded only sequentially, but also as an integrated, iterative process to enable change. Business and engineering are about growing, changing, adjusting and improving the accepted norms and procedures today to make the future brighter. Engineering is often referred to as turning dreams into reality. But one fails to realise that miracles often do not occur overnight and that there is actually a progression that must be painfully followed. The thought for the 21st century change leaders is that they must be astute decision makers and marketers, trusted innovators, agents of change, preachers of difficulties, master integrators, enterprise enablers, technology stewards and knowledge handlers. They will need first-rate managerial, technical, interpersonal and scientific skills. Complex systems and issues will need to be embraced and they must reach the decisions about the amounts of time, money, people, knowledge and technology they are willing to commit to meet what should be a common end goal that was well communicated and accepted all around

the company. Hopefully, the authors' change model will provide some much-needed guidance along these lines and will help to ensure that their voyage will be successful.

REFERENCES

Baird, L., Henderson, J. C. and Watts, S. (1997) 'Learning from Action: An Analysis of the Center for Army Lessons Learned', *Human Resources Management*, 36(4), 385–395.

Beer, M. (1980) *Organization Change and Development: A Systems View*, Goodyear, Santa Monica.

Billington, B. (1997) 'The Three Essentials of an Effective Team', *Harvard Management Update*, Reprint No. U9701A, Harvard Business School Press, Boston.

Botkin, J. W. (1999) *Smart Business: How Knowledge Communities can Revolutionize your Business*, Free Press, New York.

Burrows, P. (2001) 'The Radical: Carly Fiorina's Bold Management Experiment at HP', *Business Week*, cover story, 19th February.

Buzan, T. (1989) *Use Both Sides of Your Brain*, 3rd edn, Plenum, New York.

Collins, J. C. and Porras, J. I. (1996) 'Building your Company's Vision', *Harvard Business Review*, 74(5), 65-77 (Reprint No. 96501).

Dalziel, M. M. and Schnoover, S. C. (1988) *Changing Ways: A Practical Tool for Implementing Change Within Organizations*, American Management Association, New York.

Daudelin, M. W. (1996) 'Learning from Experience Through Reflection', *Organizational Dynamics*, 24(3), 36–48.

Davenport, T. (1999) *Human Capital*, Josey-Bass, San Francisco.

Gabarro, J. J. and Kotter, J. P. (1993) 'HBR Classic — Managing your Boss', *Harvard Business Review*, 72(3), 150–157.

Garvin, D. (2000) *Learning in Action: A Guide to Putting the Learning Organization to Work*, Harvard Business School Press, Boston.

Hill, L. (1994) *Power Dynamics in Organizations*, Note 9-494-083, Harvard Business School Press, Boston.

Hultman, K. (1979) *The Path of Least Resistance*, Learning Concepts, Austin, TX.

Jensen, W. (2000) *Simplicity*, Perseus, Cambridge, Mass.

Jick, T. (1991a) *Implementing Change*, Note 9-191-114, Harvard Business School Press, Boston.

Jick, T. (1991b) *Note on the Recipients of Change*, Note 9-491-039, Harvard Business School Press, Boston.

Katzenbach, J. R. and Smith, D. K. (1993) *The Wisdom of Teams*, Harvard Business School Press, Boston.

Kerr, S. (2000) Quoted in Garvin, D. *Learning in Action: A Guide to Putting the Learning Organization to Work*, Harvard Business School Press, Boston, 131.

Kleiner, A. and Roth, G. (1997) 'How to Make Experience your Company's Best Teacher', *Harvard Business Review*, 75(5) (Reprint No. 97506).

Kotter, J. P. (1995) 'Why Transformation Efforts Fail', *Harvard Business Review*, 74(2) (Reprint No. 95204).

Kotter, J. P. and Schlesinger, L. A. (1979) 'Choosing Strategies for Change', *Harvard Business Review*, 55(2), 4–11.

Lewin, K. (1947) 'Group Decision and Social Change', in E. E. Maccoby, T. Newcomb and E. Hartley (eds) *Readings in Social Psychology*, Holt, Rinehart & Winston, New York.

Mento, A. J., Martinelli, P. and Jones, R. M. (1999) 'Mind Mapping in Executive Education: Applications and Outcomes', *Journal of Management Development*, 18(4), 390–407.

Morgan, G. (1998) *Images of Organization*, Berrett-Koehler, San Francisco.

Schaffer, R. H. and Thompson, H. A., (1992) 'Successful Change Programs Begin with Results', *Harvard Business Review*, 70(1), 80–90.

Seibert, K. W. (1999) 'Reflection in Action: Tools for Cultivating On-the-job Learning', *Organizational Dynamics*, 27(3), 54–65.

Seibert, K. W. and Daudelin, M. W. (1999) *The Role of Reflection in Managerial Learning: Theory, Research, Practice*, Quorum, London.

Senge, P. (1990) 'The Leader's New Work: Building a Learning Organization', *Sloan Management Review*, 32(1), 7–24.

Tichy, N. and Charan, R. (1989) 'Speed, Simplicity, and Self-confidence. An Interview with Jack Welch', *Harvard Business Review*, 65(5), 112–118.