Fourth Movement:
Innovation and Change

In a gaff that probably caused him grief when he got home, former President Richard Nixon once said in a nationally broadcast speech: “This country can’t stand pat!” (Pat was the name of the first lady.) Nixon was referring, of course, to the fact that nations resist change only at their peril. The same applies to organizations. Change occurs whether the stewards of organizations are prepared for it or not. The economy changes, the technology of doing business changes, the tastes and preferences of suppliers and customers change, and so on. And change often takes place in ways that are mostly out of the control of an organization, or even a whole nation. Nonetheless, the stewards of an organization must be prepared to address change, lest they be taken by surprise and overwhelmed by it. To remain fixed in a changing world, even if at some point in time one is among the best, usually means flirting with long term irrelevance and demise. While abandoning tradition or historical values can also be a serious mistake, even successful tradition-bound organizations must adapt over time (Salipante and Golden-Biddle, 1995)

Managing change is a multifaceted endeavor, consisting of at least two parts. First, the notion of change means identifying new ways of doing things. An organization cannot cope with external changes unless it has alternatives to the
status quo that it can potentially pursue. The identification and implementation of new ways of doing things is called *innovation* – the theme of the present movement. The second part of change management is the process of *evaluation and adjustment* (Nelson and Winter, 1982) or what organizational scholars have called *organizational learning* (Senge, 1990). Learning involves taking stock of where you are relative to where you want to be, and then making adjustments to come closer to your goals. Learning is related to change because when environmental circumstances change, the organization must be able to measure how much it is being left behind (or how much its lead over other organizations is diminishing), and hence what corrective actions it must take. Learning is also related to innovation because often an organization learns that it cannot catch up or dash ahead by doing things in its usual way – it must innovate or change its traditional methods. This is what organizational scholars call “double loop” learning (Senge, 1990).

Discussion of *evaluation and adjustment* is reserved for the next and final movement of this presentation because it encompasses not only the challenge of coping with change, but also the general issue of achieving organizational excellence in all dimensions of management. The present movement focuses specifically on *innovation*.

**Innovation**

To innovate is to do things *differently*, hopefully better, than they have been done before. For management, this can be problematic. Good organizations commonly seek to improve what they are doing. But this often means doing the same things over and over until they get it right; in this process, innovation can even be seen as a diversion which can throw the quest for fine-tuning into discord.

Nor is innovation necessarily prompted by a desire to improve. Innovation comes about in a variety of ways and may serve various purposes or no purpose at all. To paraphrase a contemporary scatological bumper sticker, “innovation happens!” It may be the result of unpredictable, serendipitous circumstances and unforeseen events, or simply human desires to be creative, playful and inventive. The best that managers may be able to do, if they consciously seek innovation, is to establish conditions under which such creativity is encouraged and where people are receptive to change and new ideas. Such was the case for the bebop quintet led by Max Roach and Clifford Brown in the 1950’s:

> After [drummer] Roach ends his solo there follows the most extraordinary portion of this excellent performance [of *Blues Walk*]. For the next five choruses Brown and [tenor saxophonist] Land engage in a musical dialogue that has never been surpassed on record ....The smoothness with which this musical dialogue proceeds suggests that they preplanned it all, but they did not... the conversation... begins well, but sputters along during the last three choruses. Uncertainty reigns supreme as the players struggle with shorter and shorter phrases, almost all of it different from that used in the final version. (Owens, 1995, pp.217-218)
Innovation is a cross-cutting phenomenon that interfaces in a variety of ways with other dimensions of management responsibility. Consider coordination. Some of the strategies that we have considered for coordination—such as the use of standard plans and procedures, extensive rehearsals and central direction—may suppress innovation by minimizing individual variation and experimentation. To the contrary, however, innovation can sometimes be achieved because ensemble is so perfect that organizational members are locked into each others' behaviors and can follow each other flawlessly into uncharted territory. For example, in an interesting study of a jazz quartet, Bastien and Hostager (2002) showed how the expansion of shared knowledge through a consensus on rules, procedures and practice, allowed the ensemble to explore uncharted musical territory—invent a new song—while maintaining its coordination.

Motivation and innovation are also linked in this way. Novelty and freshness that stem from innovative activity can be an important motivator for participants in an organization. To work in an exciting organization can be more stimulating and energizing than working in a smoothly running organization where one may be treated well and rewarded appropriately but where the work is routine and bounded. Yet innovation can also be chaotic, destabilizing and disruptive, and discouraging to those caught in its whirlwind. Often, a balance is needed to provide basic stability without oppressive routine.

Niche-finding is perhaps most closely related to innovation. Organizations can excel in standard market niches with classical styles and repertoires that break no new ground. So innovation is not essential to finding or maintaining a viable niche, at least not for the short term. But organizations often do create new niches for themselves by innovating. For example, through incremental innovations they may “differentiate their products” as economists would say, so that their repertoires are slightly different from those of their competitors and they enjoy a modest gain in market power as a result. Few music groups succeed without first finding their own unique styles. Product differentiation is an incremental process, but small changes accumulate. Over time, evolutionary changes that come about through differentiation and incremental adaptation to new conditions can lead to major shifts, even if managers are not looking explicitly to innovate:

“We’ve been in the recording studio for over 25 years”, says [bassist Teddy] Gentry. “You just find your sound and then redefine what you do best each time you go into the studio. I’ve never looked at Alabama as traditional country, but we are country boys, and when we sing, it sounds like country no matter what kind of a beat we’ve got to it. So, we never quit looking for a new way to express our sound.” (Capozzoli, 1999, p. 1-E)

Innovation can also destroy niches. When Rock and Roll’s popularity overran conventional “Hit Parade” music in the 1950’s, demand for the latter shrank considerably. But there was little that managers of conventional music groups could do about it. Few of them had the capacity to transform themselves into rock groups. They could only continue to compete for the reduced ecological space
remaining for their style of music. Innovation was not a panacea. In music as in other fields, innovation can be a force of creative destruction (Schumpeter, 1934) in which the old is destroyed and new forms are created. This is generally a healthy process for fields as a whole, but it can spell disaster for individual organizations, even if they are well run.

Finally, innovation itself can be a niche. Some organizations are pace-setters and, by design or reputation, succeed by drawing support from those who equate value with progress and state of the art methods and products. Maintaining that special position requires an organization to constantly innovate or risk losing its distinctiveness:

In their work together with the New York Art Quartet, Mr. Tchicai and Mr. Rudd brought uncommon elements to free jazz, as if holding to its original promise of liberation from predictable routines. Collective improvisation was a cherished ideal in early free jazz, but aside from greater parity between horn soloists and their rhythm sections, this was often just talk. For the New York Art Quartet, collective improvisation was a raison d'être, the band's musical starting point. (Davis, 1999, p.31)

Overall, innovation is potentially important for managers in a number of ways. If the environment is changing rapidly then innovation is a route to maintaining a viable niche. If a comfortable niche is achieved by establishing the organization as a pace-setter then continual innovation is required to retain that position. Innovation can also contribute to maintaining motivation through the rewards of novelty, freshness and the excitement of pioneering. But motivation and coordination problems can also arise where innovation becomes too prominent a part of the organizational regime. Finally, innovation is an inexorable imperative that eventually affects all organizations. Sectors or industries in which innovation does not occur eventually decline or are overtaken by other sectors that do innovate. In this sense, innovation can be seen as a collective responsibility of leadership in all organizations that share a common focus. In short, organizations must attempt to manage innovation or risk being managed by it.

Innovation comes about through a number of related organizational processes. The economist Joseph Schumpeter (1934), in his study of entrepreneurship and economic development, identified entrepreneurs as innovators who implemented "new combinations" of the means of production – using different inputs or methods to produce goods and services, finding new markets, producing entirely new products and services, organizing production in new ways, and so on. The idea behind "new combinations" is that people innovate by shuffling a basic set of elements and possibilities in a manner that departs from conventional practice and leads to new results.

Music demonstrates that the potential for innovation through new combinations is virtually unlimited. Terrance Simien and his Mallet Playboys offer one modest example of "fusion music" which combines different musical styles:

Simien marries Creole zydeco with Cajun music and Delta blues, spiced with touches of rock, reggae, funk and gospel...His energized zydeco sound effectively blends
Given pieces of music can be played with widely different combinations of instruments, and adapted to many different styles. The same piece can be upsized for large ensembles and downsized for smaller ones. Tempos can be changed and rhythms and harmonies can be altered in uncountable ways. Classical pieces can be diluted into elevator music or adapted to jazz motifs, and Beatles music can be elaborated for symphony orchestras. Melody can be moved to the bass line and harmonies can be carried in upper registers. Tubas can solo and cornets can harmonize, and so on. Experience with the trombone offers an interesting illustration:

In the early years of jazz in New Orleans, musicians like Edward (Kid) Ory...developed “tailgate” style in which the trombone serves as a hinge between melody and rhythm, improving a sort of ground bass behind the trumpet lead and clarinet obbligato. In the 1920s, the trombone evolved as a soloing instrument in the hands of the New York musicians Jimmy Harrison and Miffy Mole, and it contributed to the subsequent stylistic developments in the music, from be-bop...to the avant-garde in the 1960s.....[In] the 1970s, Albert Mangelsdorff and George Lewis were elaborating startlingly innovative, polyphonic solo vocabularies on the trombone, defying naysayers who had dismissed the instrument as unwieldy and lumbering. (Edwards, 2001, p.23)

Intentional innovation does not normally occur through the haphazard trial of random possibilities; certain combinations work better than others. The art of orchestration consists of following established principles in order to specify the instrumental combinations that best project a given piece. But within these principles there is room for imagination and creative departure from norms. The idea of “new combinations” leaves open the possibility that one can constantly reconsider the old formulas and every once in a while find a new mix that works well and strikes out in a fresh new direction. Indeed, Nelson and Winter explain that “Innovations in organizational routine ... consist, in large part, of new combinations of existing routines” (1982, p.130). Donald Tovey applies this idea to Beethoven:

The technical resource by which he extended his art amounts to little more than a combination of the habits of Mozart and Haydn, stimulated in later years by an intensive study of Handel and ...Bach. But in art, as in chemistry and mathematics, such combinations are no mere arithmetical additions. They are integrations that produce results often incalculable and sometimes explosive. (Tovey, 1949, pp.346-347)

One way of seeking new combinations is to imitate a previous form in a new context. Innovations that result from this strategy may be trivial (adapting Beatles’ tunes is unlikely to set off a revolution in symphonic music) but sometimes this imitative strategy can lead to much more significant results. For example, as Tovey illustrates, in Bach’s time the organ was employed to play “...a fugue
imitating the behaviors of a four-part or five-part chorus discussing a subject in
dialogue, but usually taking advantage of your instrument to propound a florid
proposition beyond the range of the most athletic singer” (1949, p.341).

Another application of new combinations is the intentional blending of
substantially different approaches. A good example is the work of Bright Cheng, a
modern composer who seeks to combine western and Chinese systems of musical
expression:

Cheng creates a convincing bridge between the differing instruments and scales....the
piece begins with a thin-sounding, vibratoless folk-like sound from the cellist,
accompanied by harps and gentle drums. Gradually, almost imperceptibly, the cello’s
richer tone quality takes over in a melody that maintains the wide-leaping, angular
flavor of Chinese scales in a fuller, more harmonically rich Western context. (Stearns,
1997, p.8D)

Sometimes innovation comes about by accident, even by mistake, but
organizations must be receptive to new possibilities and be prepared to exploit
them. Better yet, they need to improve on serendipity to bring innovation about.
Tovey’s recounting of the story of the “lost chord” is interesting in this regard:

....That which trains the imagination is good; that which starves or dulls the imagination
is bad. Sitting at the keyboard and fumbling for lost chords is bad for the imagination.
The poetess [Adelaide Proctor] herself clearly tells us that the lost chord was struck by
accident. Samuel Butler has already pointed out that it must have been two chords if it
sounded like a great Amen, and my own theory is that the organist had stumbled into a
 plagal cadence, and probably often afterwards struck one or other of the chords without
recognizing them...Obviously a little knowledge of theory would have given the
organist’s imagination the freedom of all the Amens in Berlioz’s Requiem....This
Charles Halle tells us, Berlioz actually discovered by letting his fingers wander idly over
the keyboard. (Tovey, 1949, p.377)

The story of the lost chord suggests that searching for new combinations can be
usefully guided by thorough knowledge and understanding of existing
combinations and by an imperative to find a solution to some outstanding problem.
Berlioz let his fingers wander idly over the keyboard for a reason; he was looking
for an idea that fit into the piece he was working on. More broadly, innovation is
often the result of a directed search for new solutions to problems not satisfactorily
resolved by conventional means. In this way, managers seek to solve problems or
exploit opportunities, and innovations are the results – sometimes even incidental
but important by-products of the search:

One way in which the routine functioning of an organization can contribute to the
emergence of innovation is that useful questions arise in the form of puzzles or
anomalies relating to prevailing routines.....the problem-solving responses routinely
evoked by difficulties with existing routines may yield results that lead to major change.
(Nelson and Winter, 1982, pp. 129-130)
Consider the band called the Derailers from Austin, Texas:

How does a country band come up with something new? It’s not easy and the problem is especially acute if it wants listeners to know it’s country music rather than just music stuck with a ‘country’ label’’. "It’s very exciting trying to look for that new twist,” rhythm guitarist/vocalist/songwriter Tony Villanueva said... “To me, you have to really nail down what you’re doing so people know where the music comes from while at the same time drawing on a broad enough pallet so we can develop our own thing.”...What the band developed ....is a style squarely based on the California sound of Buck Owens and Merle Haggard melded with Texas honky-tonk, Western swing and a throbbing rockabilly beat... “We basically took a lot of elements from the music we listened to but we were basically thinking about the twosomes,” Villanueva said. “People like the Everlys, the Louvins, Buck (Owens) and Don (Rich), as well as Keith and Mick and John and Paul. We wanted the interaction between two strong identities that would jell into something that works.” (Fulmer 1997a, p.17)

Carse argues that the entire evolution of the modern orchestra, essentially a story of experimenting with new combinations of instruments to solve various problems over time, can be understood as a quest for better expression of the musical art form:

However much the growth of the orchestra has been the toy of circumstances, conditions, or the mechanical or technical development of instruments, the real driving force behind such evolution is after all the insistently growing demand of musical art for fit means of expression. The impelling power of a constantly advancing art has always carried with it the realization of better and more worthy means of expressing itself, and with the demand, the man, the instrument, and the opportunity have always been forthcoming. (Carse, 1964, p.7)

Viewing innovation through this lens of problem-solving suggests that innovation is a reactive and pragmatic process, stimulated by difficulties in current operations. However, long term planning, anticipation of trends or elaborate theorizing about new possibilities also play into this picture. Where the environment, especially technology, is changing rapidly, problem solving may call for a more coherent and sustained approach to innovation. In these circumstances, Baumol points out the seemingly paradoxical result that: “...the innovation process has veered toward becoming yet another humdrum activity of the firm, with corporate R&D taking over a substantial portion of the field and transforming it into preprogrammed activity” (1993, p.115). And, Nelson and Winter observe: “...organizations have [developed] well-defined routines for the support and direction of their innovative efforts” (1982, p.134).

Whether formally organized through a research and development enterprise, or pragmatically based in a problem-solving philosophy that is open to systematic consideration of new combinations, a problem-solving focus remains an important strategy for organizational innovation that allows for improvement in current ways of doing things and adaptation to new environmental circumstances over the long term.
Serendipity and directed change through research and development are two ends of a spectrum of ways in which new combinations can be produced and innovations manifested. A middle ground, well illustrated in the realm of music, yields innovation by allowing for intuitive and semi-systematic variation and experimentation within the framework of existing norms. Musicians call it improvisation: "...improvisation refers to composing and performing in the same moment, i.e. realizing a musical performance without the benefit of deliberate planning about how each note will be executed, the order and flavour of each solo, the direction the performance will take, how long it will last, etc." (Kamoche, Cunha and Cunha, 2002, pp.2-3).

Improvisation is not random. It requires structure to be in place, and it requires a set of rules and conventions within which variations may be tried. But these rules are also flexible, and pushing their limits is one way in which significant innovations may occur. Indeed, Weick (1998) points out that improvisation lies along a continuum of practices, or departures from convention, that range from "interpretation" to "embellishment" to "variation" of a melody, to full "improvisation" which radically transforms the melody in some significant way. As Tovey observes, improvisation may even lead to bad habits which can undermine effective operation, but it can nonetheless be critically important:

Extemporization is a pastime which may lead to all manner of bad habits, but at least half the aesthetic resources of classical music have originated in it, and the wise teacher will neither close the playground nor supervise the games until they become a worse tyranny than the lessons. (Tovey, 1961, p. 378)

Clearly improvisation is best known in the world of jazz. Indeed Max DuPree (1992), John Kao (1996) and others have used jazz as their principal metaphor for leadership and creativity in dynamic business environments where adaptability and inventiveness are seen as prerequisites of success. John Coltrane provides a vivid illustration of how innovation can occur through improvisation in jazz:

*My Favorite Things* was originally a bright, bouncy waltz in *aabb* form... Coltrane kept it in triple meter, but used its 16-measure sections to frame scale-based improvisations of indefinite lengths. A performance consisted of three solos - one by Coltrane, one by Tyner, and another by Coltrane - bounded by an introduction and coda of varying lengths. Because of the open-ended interpolations, different recorded performances vary in length from ten to fifty-six minutes...Coltrane weaves a fascinating tapestry of melodic threads, unfettered by any predetermined structural boundaries. In these performances the group clearly is redefining the traditional roles and relationships of jazz-group members. Garrison avoids playing walking bass lines, and instead concentrates on rhythmically more varied melodic lines. Tyner supplies an almost constant chordal barrage during Coltrane's lengthy solos. And Jones aggressively interacts with the soloists, creating energetic and dense textures with them. He seems to play drum solos during the sax and piano solos, but he is actually entering into a lively dialogue with them. The result is the musical equivalent of animated and excitable old friends conversing, interrupting one another, yet interacting and exchanging thoughts. It is a fascinating and brilliantly executed musical experience, one far removed from
The Elements of Innovation

Fostering innovation involves many of the same elements of management strategy that were considered in our discussions of coordination, motivation and niche-finding. Revisiting these elements further illuminates how innovation comes about and how managers can influence and exploit it.

Formal Rules and Procedures

Organizational routine is in some sense the antithesis of innovation. As Tovey notes, following the rules in mechanical fashion leads to uninspired results:

Nobody is ever in doubt about the sound of a passage that keeps the rules. If it has not been imagined, it will be dull, though clearer than ditch-water. It if has been imagined, it may be vivid as the opening of Beethoven's Violin Concerto, even if it is as unoriginal as Handel's Hallelujah Chorus. (Tovey, 1961, p.392)

However, rules and standard procedures are also essential to innovation. Without standard ways of doing things there would be nothing nonstandard to be called an innovation. As Nelson and Winter put it: "...innovation involves change in routine." (1982, p.128). Routines serve as the foundations from which innovation takes place. Variations from routines may happen by accident or by changes in circumstances that require the same operations to take place under different conditions. For example, as Nelson and Winter point out, organizational routines can "mutate" when the personnel who carry them out change:

...because the new role occupant may himself be different in significant and durable ways from his predecessor, and also as the result of other contingencies affecting the role-learning process, it is highly unlikely that a near replica of the predecessor's role performance will result. In short, organizational routine will mutate. (Nelson and Winter, 1982, p.116)

An example of a routine in music that generates such mutation is ornamentation in baroque music:

Ornamenting baroque music is something like trimming of the Christmas tree. Composers of the 17th and 18th centuries created musical structures as strong and beautiful as evergreens. Performers were expected to add expressive embellishments that gave the music sparkle and personality. (Salisbury, 1998a, p.3-E)

As the term "personality" suggests then, variations through the routine of ornamentation came about when personnel changed and musicians with different ideas offered new ornaments to the standard pieces played by their ensembles.
One could argue that ornamental variation is not true innovation because it is generated by fixed rules that constitute part of the essential (routine) core of Baroque music. (Weick would probably call it “embellishment”.) This mode of “structured variation” nonetheless encourages exploration of new combinations. Hence, innovation can be a matter of degree – paradoxically, some of these variations may be “routine” while others can depart, sometimes radically, from the usual fare.

Again, innovation depends on a foundation of existing rules and procedures. In an interesting study, Bastien and Hostager (2002) observed a jazz quartet that had previously not played or rehearsed together but whose members were all accomplished musicians with a strong knowledge of the rules and customs of jazz. With no preparation they were able to immediately play and improvise around some simple well-known songs and, as the performance progressed, were able to improvise more daringly around more complex melodies to a point where they eventually invented a new song. They were able to do this because they had knowledge of the initial song, the musical rules (chord progressions, rhythmic patterns) through which variations in the song could be constructed, as well as the social practices or protocols through which each player was expected to interact with fellow players and the group leader. Using the rules, the players were able to minimize uncertainty over what was coming next, and the risk of chaos, while exploring new possibilities. A similar experience is described by Peplowski (1998).

Many different musical ensembles may play the “same music” but each is likely to engage that music in its own way, and in some cases, significant innovation may occur. Traditional American folk songs were played in a standard, old-fashioned way by the Weavers in the early 1950s and their popularization of this genre of music was itself noteworthy. But when the Kingston Trio and Peter, Paul and Mary got hold of this music in the late 1950s and early 1960s, they created a whole new folk music style and audience.

In classical music, the basic routines and repertoires apply to all orchestras and chamber groups. Still, people are drawn to particular sounds and styles of ensembles that have managed to distinguish themselves from the crowd through some variation in those routines – perhaps a subtle but effective nuance in rhythm or dynamics, or an imaginative new combination of instruments. For example, such an innovation arose from the need to solve a unique problem that arose in putting the program together to celebrate the ninetieth birthday of distinguished harp teacher Alice Chalifoux: an unusual ensemble of 58 harpists was assembled for this occasion to play a unique program of rarely performed pieces on this normally singular instrument, in a progression from solo harp to the full ensemble:

The program will grow from a sonata ...to a suite for two harps...to a concerto for harp and seven wind instruments to ensemble works for six harps, then 22 harps and then – imagine! – 58 harps. (Rosenberg, 1998a, p. 2-E)

Another way in which routines support innovation is through experimentation
with the circumstances under which different sets of rules or routines are applied. Bringing a popular piece (a Beatles song) to a classical context, or a classical piece to a popular context (jazzing up Beethoven’s *Ode to Joy*), are examples of innovating by changing from one set of rules to another. Mixing two or more sets of rules is yet another way. Gilbert and Sullivan innovated by mixing the rules for opera with those of popular music. Gershwin innovated by bringing classical structure to a jazz motif.

Rules also establish the basis for “planned innovation” through improvisation. While the results of improvisation vary from one application to another, and sometimes leads to unusual outcomes that strike out in substantially new directions, improvisation, as we have noted, is not a completely random process. The rules of improvisation guide and confine the possibilities but also permit surprises to occur. In jazz, there are scales that may be explored, particular intervals that are known to sound better than others, key changes that fit and others that do not, incidental notes and phrases (risps) that may be inserted in various kinds of circumstances. The possibilities are many, but most are predefined. However, the number of combinations is enormous and never fully explored, leaving open the chance for important innovations to occur in the process of improvising by the rules. Moreover, there remain many yet to be imagined possibilities for variations in the rules themselves – incrementally different, but nonetheless new kinds of incidental notes and phrases, rhythmic and harmonic variations and so on, which potentially increase the number of “standard” combinations and which raise the prospect of introducing wholly new kinds of possibilities. This zone of bending the rules at the margins is where significant innovation often occurs:

In jazz, improvisation doesn’t just have to consist of variations on the theme at hand. A few jazz musicians, ranging from Louis Armstrong to Stan Getz, have excelled at subtly altering the melody and the chords of standard tunes. Others, Dizzy Gillespie for example, are at their best developing ingenious new melodies on familiar chord structures. Ornette Coleman showed musicians how to improvise on the sound, the mood, the feeling of a tune, and many followed his example.

But all of these improvisers are fundamentally alike and each one has developed a distinctive musical syntax, a personal dialect of the language we call jazz. (Palmer, 1987, p.28)

**Communication**

Communication among members of an organization can be a critical element in achieving innovation. While inventiveness and creativity may be vested largely in the capacities of individuals, communication is essential to moving from the conception of ideas to their implementation. Moreover, the generation of new ideas per se is certainly stimulated by the interplay among individual organizational members.

Nowhere is the importance of communication to innovation more evident than
in the process of improvisation. In jazz, improvisation requires that organizational members take turns trying to invent new phrases on the fly when their musical parts come around to them; group members set the context and provide the stimuli for individual solos. Improvisational sessions may be understood as conversations among ensemble members in which the musical response and inventiveness of one player inspires that of the next.

The quality of the communication and hence innovational success will depend on a number of factors, including how well the players know each other and can understand and anticipate each others’ thoughts and ideas. Members of a tightly knit ensemble that have played together for a long time can lead each other about — even into uncharted territory — more easily than a group of strangers. So too, even relative strangers who have common backgrounds of education and experience, will know “where each other are coming from” as they improvise, better than a group of players used to different styles and genres of music. This was the case for the jazz quartet observed by Bastien and Hostager (2002). The more the four musical strangers played together, the more capable they became in moving from routine to innovation, moving from minor variations on a simple theme in their first number, to the invention of a new song by the third. A similar rapport seems to have been achieved by Bobby McFerrin as he led the Cleveland Orchestra in accompanying jazz pianist Chick Corea:

When Corea came onstage, he introduced Mozart’s Piano Concerto No.20 in D minor, K.466, by improvising a simple harmonized melody that segued into the orchestral exposition. Then, he played along, almost inaudibly, and he also added extra notes to the solo part.

Except for the cadenzas, most of his additions were well within the boundaries of the classical style. But in the cadenzas, he forged into a different world of free improvisation and chromatic harmonies.

Although McFerrin sometimes let the ensemble overpower the soloist, he was an attentive partner who encouraged the pianist to take the lead...McFerrin set the pace, and Corea came along for the ride. At times, the musicians needed a few phrases to get into the same groove. But once they were on their way, their synchronized performances took flight. (Salisbury, 1997, p.5-B)

Education

The importance of understanding rules and having clear communications as prerequisites to successful innovation, suggests that the education of ensemble members also plays an important supportive role, though education is also a potential hindrance. Highly educated ensemble players will know the rules and have a deep understanding of both the existing routines and the ways in which they can be varied. Moreover, educated players are more likely to share common understandings of musical language, heuristics and routines for variation and hence will be able to communicate with each other more effectively on an
extemporaneous basis than those not as well trained, even if they are from different musical venues.

However, education can also be a stumbling block to innovation where training blinds individuals to the possibilities that may lie outside their areas of expertise. Here is where less highly trained creative geniuses sometimes intrude on the world of professionals to introduce new forms that would never have been conceived by their most highly educated contemporaries. George Gershwin was an amateur in the world of classical writing and orchestration. Paul McCartney didn’t read music. They broke rules because they didn’t know all the rules. These innovators were in some sense aided by their ignorance because they were unconstrained by standard ways of thinking that might have restricted their imaginations. The role of education in fostering organizational innovation is therefore, paradoxical. The most erudite practitioners may foster innovation because they have not only mastered their disciplines but understand the limits of those disciplines as well, and hence are receptive to new possibilities. Less well educated practitioners may also be innovative if they have innate talent and genius and are not constrained by standard notions. Those occupying a middle ground of substantial education and limited imagination will be most likely to ignore and even eschew possible new combinations that could lead to important innovations.

Finally, there is another interesting twist to the relationship between education and innovation. Sophisticated improvisation requires deep musical knowledge by each of the players in an ensemble. The more knowledgeable each of the players, the more easily members of the ensemble can interact and follow each others’ leads and cues. Hence, the group as a whole may be held back by its less sophisticated members. Bastien and Hostager thus speculate that “...groups that include musicians of very different knowledge bases will either produce jazz that is not well integrated or will perform at a level roughly equivalent to that of the least competent member” (2002, p.23).

Rehearsing

The role of rehearsing and repetition in innovation is similarly paradoxical. Certainly at the level of the individual, practice is a key ingredient in preparing players for innovation. Citing Berliner (1994, p.494), Weick emphasizes this point:

...Berliner is worried lest, in our fascination with the label “spontaneous”, we overlook the major investment in practice, listening, and study that precedes a stunning performance. A jazz musician is more accurately described as a highly disciplined “practicer”...than as a practitioner. (Weick, 1998, p.544)

At the ensemble level, practice plays a very important role in innovation as well. An ensemble’s playing of a given piece proceeds through successive stages of development. Initially, the group works out the operational problems and reaches a point where the performance is technically correct. From that point, the
ensemble can fine tune its playing, working out nuances so that it achieves a high level of technical perfection. Subsequently, the ensemble may begin to put its own stamp on the piece, setting the tempo and dynamics according to its own taste and playing certain phrases in its own way, giving it an interpretation that can be associated with the ensemble’s own special style. At this level, the ensemble may go further, actually making changes in the sequences, orchestration, or even melody, harmony and rhythm, possibly leading to significant innovation. While not going quite that far, the Cleveland Orchestra sometimes borders on innovation, even with standard Beethoven pieces:

The Beethoven performances in Cleveland should in no way be viewed as rehearsals for Tokyo, if last night’s program of the “Leonore” Overture No.1 and Symphonies No.4 and 5 was any indication. These weren’t run-throughs of music we’ve heard on numerous occasions, but newly conceived interpretations by a conductor who never stops probing and an orchestra that abhors anything resembling routine. (Rosenberg, 1993, p.30)

This nominal sequence of development makes clear that continued practice and repetition can support innovation. The more a group masters a particular kind of work, the better position it is in to see where improvements or new approaches may apply. However, practice can be enervating as well. If the stage of technical mastery is not followed by creative interpretation and experimentation it can lead just as easily to a loss of enthusiasm and a deterioration in performance, and the opportunity for innovation may be lost.

The dangers of repetition coupled with the benefits of practice appear to call for an approach to innovation that emphasizes variety and experimentation. Ensembles can expand their repertoires so that they become expert in a reasonable number of different pieces, yet are able to avoid boredom with any specific piece. Practiced and revisited with reasonable frequency, individual pieces can remain both fresh and well-mastered, and each revisiting can become an opportunity to take a new look and consider additional variations in performance.

Practice and repetition are particularly useful components of success in improvisation. By definition, improvisational performance should never be the same from one performance to the next. No matter how many times the Preservation Hall dixieland band in New Orleans plays “The Saints Go Marching In”, someone’s solo will be slightly different and some variation will occur in the overall fabric of the piece. Thus, practice and repetition becomes an increasing challenge within an improvisational regime. The obvious variations will be dispensed with early on and new variations will be searched out with increasing urgency. A “surprise” that comes after many improvisational repetitions may represent a significant innovation. But if surprises cease to occur after a long while, it will be time to move on to other challenges before the creative juices dry up.
Personnel Practices

Earlier we observed that changing personnel inevitably introduces variation into the way an organization carries out its work, potentially leading to innovation. There are at least two ways to introduce change in the personnel mix of an ensemble. The first is to change individual members of the group and the second is to rearrange the roles of incumbent members.

It is the rare organization that maintains a completely stable mix of personnel over long periods of time. Such stability can be extremely important to successful innovation in ensembles where the combination of skills and personalities is unique and group members find themselves reinforcing and stimulating each others’ creative energies. The Beatles, for example, were able to stay together for a long time and progress through several successive stages of creative, groundbreaking achievement. Introducing new personnel into such an ensemble when it is “on a roll” is likely to be counterproductive; it would forego the advantages associated with the fact that group members had achieved a high level of mutual understanding which enabled them to work together towards new horizons of creativity. At best, a new member would require a substantial learning period that would interrupt progress and slow the group’s momentum.

Eventually, however, the personnel mix of any organization changes, either by natural causes or because the ensemble no longer senses that it can maintain the chemistry responsible for past success. In some cases, especially small groups like Simon and Garfunkel or the Supremes, the ensemble will simply dissolve. Larger organizations are more likely to survive key personnel changes, and their innovative potential may even benefit from them. For such organizations, the question of replacing old members and recruiting new ones is critical. New members will have different styles and personalities, so it will be important for them to be compatible with whomever remains. At the same time, new members are a source of fresh creative energy and ideas and they may introduce changes in style and expertise that can amplify the potential number of “new combinations” available to the ensemble as a whole. Recruitment, therefore, creates special opportunities for an organization to reconsider its current ways of doing things and to explore new possibilities that ultimately may prove to be innovative. Changes in organizational leadership provide the clearest illustrations. Consider Leonard Slatkin’s experiences with different orchestras:

I am delighted with the sound we have achieved here and I try to take a little bit of St. Louis with me wherever I conduct. But you can’t do that with every orchestra you work with; if you’re just visiting, you don’t want to rearrange the furniture too much...I try to come in with a clear conception of the way a piece should be played and then I make adjustments for the personalities of the different orchestras I work with.” (Page, 1992, p.138)

In smaller organizations, it is more likely that new people will come from the outside rather than rising through the ranks or entering through lateral personnel
changes. This increases the likelihood that new personnel will introduce substantial change, since they are not yet indoctrinated with the organization's culture and particular ways of doing things. This is a mixed blessing for innovation. New recruits must gain a common understanding with existing organizational members before new and old members can work productively together towards successful innovation. Once they have done so, however, new recruits are likely to stimulate fresh approaches. One way this can happen is by introducing new skills, just as new members of a musical ensemble can bring different instrumental capacities. For example, jazz sextets can substitute banjos or trombones for guitars, if personnel with the capacities for playing those instruments are introduced and brass sextets can utilize different combinations of cornets, horns, trombones and tubas (Osterberg, 1996).

In larger organizations, there is a greater likelihood of changing the personnel mix internally, through changes in work assignments. Individuals can move from one department to another, introducing new ideas, styles and perspectives while maintaining a consistency borne of experience in the same overall organizational environment. To a large extent, such mobility is impeded by specialization, however. Production workers rarely move into the accounting department, and human resources personnel are unlikely to shift to corporate finance. A more likely scenario is the shift of personnel assignments within departments.

Orchestras illustrate both the possibilities and limitations of such shifting. In a symphony orchestra, it would be the rare talent that could move from the string section to the woodwinds; these instrument sections are too specialized for most individuals to be accomplished in both. Such individuals could potentially increase the likelihood for innovation by bringing the benefits of "woodwind thinking" to the strings or vice versa. It is more likely, however, that individuals could move within such departments, for example, from the violas to violins, and certainly from second violins to first violins, or if not from clarinet to oboe, then from flute to piccolo. Such shifting at opportune times within these subgroups – for example as practiced by the 15 member Concerto Soloists of Philadelphia chamber ensemble (Goodman, 1985a) – can enhance the potential for innovation by introducing different styles and perspectives on which to build new combinations.

However, the simple shifting of personnel among departments and roles within departments may not be sufficient to exploit the full creative potential of talented players. Second violins and low brass simply may not have interesting enough parts. Thus, another personnel approach that can enhance innovative potential is to juggle work assignments among roles. Second violins and low brass can be given the melody line on occasion and first violins and trumpets can play accompaniment. This approach, rather than shifting people around, effectively addresses the same goal. The same set of first violin players, having grown a bit stale playing the melody lines together, may find wholly new perspectives in occasionally addressing (or revisiting) the challenges of harmony and counterpoint. Certainly, the tuba players will thrill to the possibilities of being in the melodic limelight and this too may introduce new creativity into the low brass section.
Overall, of course, changing work assignments in this manner, simply offers the chance for experimentation with new combinations for how the ensemble gets its work done; indeed it may find that some unusual combinations actually do work better for certain kinds of pieces or performances. Certainly the notion of rotating solos is implicit in the jazz motif where players in all sections normally get their chances, on a rotating basis, to display their ideas through improvisational solos—percussion, low brass and basses included.

The potential for innovation may be even further enhanced if hierarchical and status barriers between departments are broken down and members of each can deal with one another on a more egalitarian basis. This perspective is common in chamber music. Composer Ellen Taffe Zwilich illustrates the idea in her Double Quartet:

This simply isn’t an octet. I wanted the audience to realize that this was not just a piece for two cellos, two violas and four violins, but two separate string quartets, simultaneously competitive and cooperative. Chamber music demands a continual trade-off in musical hierarchy. Now the first violin has the melody, now it’s taken by the cello; now the one quartet leads the way, now the other. (Page, 1992, p.149)

De-emphasis of hierarchy may encourage innovation for three reasons. First, greater equality will encourage greater mobility among work groups; first violinists will be more willing to play with the second violins if no loss in status is associated with such a move. In turn, the increased interdepartmental mobility will enhance the possibilities for mixing personnel from different groups and hence introducing new elements of creativity into various contexts from time to time. Second, greater equality will increase the likelihood that new combinations resulting from role reversals and exchanges will be considered. If first violins do not consider it an insult to play harmony or counterpoint, they will be open to doing it more often. Third, if greater equality prevails, better communication is likely among departments and a more robust exchange of ideas may result. Tuba players may be less reluctant to offer suggestions to the clarinets, and so on.

Leadership

The issue of how status affects innovation carries over into the question of what role leadership plays in innovation. Inspired leadership can be an important source of innovation. However, autocratic leadership can discourage innovation by suppressing the potential contributions of organizational members, especially those in low status departments.

The world of music is filled with names of strong leaders whose innovative ideas formed the foundation for the ensembles they led. Great composers such as Beethoven, Berlioz and Wagner conducted orchestras playing their own original works, and jazz bands under the leadership of Duke Ellington, Count Basie, Glen Miller, Benny Goodman and many others, have been vehicles for playing the path breaking works of those creative geniuses. As music directors of their own
ensembles, these individuals assumed the role of Schumpeter's entrepreneurs, not only inventing new combinations but putting them into practice through bands or orchestras either created for the express purpose of playing their works or adapted over time to serve as vehicles for their particular musical contributions. This situation is referred to by Fischer and Jackson as "...the double metaphor of the conductor as performer; the orchestra as instrument" (1997, p.72).

The "orchestra as instrument" concept puts an enormous burden on the leader to be the sustaining source of inspiration and new ideas. While this entrepreneurial style of central leadership is an important source of innovation it is also limited because it depends on sustainable individual creative genius not only to continually invent new concepts but also to put them into practice. Most organizations seeking to innovate, especially larger ones, must exploit other means less critically dependent on enormous central leadership talent.

Even if they are not creative geniuses, leaders can play a central role in organizational innovation. In music, for example, conductors can be the critical link between composers of new or less-well known music and the playing of that music for a public audience. Leonard Bernstein was well known for championing the works of Gustav Mahler, for example, at a time when Mahler was not widely appreciated. In this sense, leaders perform a "boundary-spanning" function, scanning the environment for new ideas and possibilities and bringing them inside the organization to expand the repertoire. This can be a very important role, particularly in the case of highly experimental works. A conductor with a strong personal reputation who can afford to take risks, and with the personal acumen to understand the significance of a new idea, may be instrumental in promoting an important innovation on which others are unwilling to gamble. This appears to be the case with Elliot Carter and the Cleveland Orchestra:

The Cleveland performance was eloquent testimony to a splendid orchestra operating in peak form, under a conductor, Dohnanyi, who is committed to playing new music and getting it right. There remains only the sadness and even the anger, that this was not all happening in New York. Since Pierre Boulez left the music directorship of the Philharmonic two decades ago, the orchestra has not played any new piece by either of the two venerable composers who have spent their working lives in or near New York: Carter or Milton Babbit. (Griffiths, 1997, p.8-E)

While leadership can be extraordinarily important as a source and support for innovation, it can also be problematic if it suppresses or ignores creative energies that reside within the rest of the organization's work force. A self-centered, autocratic leader may be unreceptive to the ideas of other organizational members, and hence may discourage their contributions. A leader that assumes the entire burden of responsibility for programming and repertoire, and fails to consult organizational members or cultivate their interests, runs the risk of lulling the organization into a sense of (possibly false) security that the boss is "taking care of these matters". Worse yet, an autocratic leader may have to overcome indifference with intimidation. Of course, a brilliant autocratic leader may also inspire
organization members, thereby effectively engaging the organization as a vehicle for innovation. However, a more open style of leadership which encourages participation, values suggestions, and removes risks associated with offering unorthodox ideas, has perhaps the greater potential to unleash imaginative thinking that can lead to significant new possibilities. Over time, decentralized leadership can be far more effective in stimulating innovation than autocratic, central leadership unless the latter is unusually brilliant and enduring.

Here again is where the process of improvisation comes into play. Indeed, Bastien and Hostager argue that jazz is the antithesis of central leader-led innovation: "Jazz is ... a truly collective approach to the entire process of innovation, for it requires that the invention, adoption, and implementation of new musical ideas by individual musicians occurs within the context of a shared awareness of the group performance as it unfolds over time" (2002, p.14). While a leader may establish a procedural framework and supportive environment, improvisation is usually a bottom-up process that depends on individual initiative and creativity. The ensemble becomes an incubator, perhaps under the benevolent oversight of a conductor-coach-manager, within which section leaders and others with virtuoso leanings can explore their ideas, share them with others, and insert new combinations into the ensemble’s overall repertoire. Such decentralized leadership arrangements foster innovation in a mode that is complementary to the entrepreneurial mode of the creative central leader, and perhaps is even better suited for that role in circumstances where towering geniuses are rare, work has become too complex for single individuals to exert complete mastery, and work forces abound with talent and proficiency.

The Circumstances of Innovation

Not all organizational contexts support or encourage innovation. Larger and smaller, more or less diverse, professional and amateur, and stable and transient, organizational settings present different challenges to generating and implementing new ways of doing things.

Size

With respect to innovation, smaller is generally better. All else constant, smaller organizations provide for greater ease of communication, less rigid adherence to standard procedures, and generally greater flexibility for making changes and trying new approaches. Moreover, smaller organizations accommodate both entrepreneurial leaders who may use the organization as a vehicle to implement their creative ideas, and egalitarian groups that prefer to share in the creative process. Thus, we can equally expect democratic chamber groups such as the Canadian Brass or Guarneri Quartet to be innovative as we can pop groups such as the Supremes or Huey Lewis and the News which revolve tightly around charismatic, creative leaders.
Innovation becomes a more difficult challenge in larger organizations where bureaucratic procedures and strong centralized administration may be more deeply entrenched. In this context, a conscious strategy of innovation is more critical, whether that be the creation of a central research and development program that explicitly generates new proposals for systematic testing and experimentation, or the establishment of a decentralized regime in which experimentation, improvisation and creativity are specifically encouraged, rewarded and systematically exploited throughout the organization.

In classical music, observers have argued that many of the larger organizations (orchestras) have begun to ossify and some have fallen by the wayside, victims of their inability to change. They have not had a systematic program for seeking innovation nor have they decentralized in a way that could exploit the benefits of small size. For example, in making recommendations for orchestras in the twenty-first century, Orleans suggests:

A “think tank” for musicians...By beginning to address organizational problems at the artistic level ourselves, without the intrusion of managements, conductors, or marketing influences, we can define for ourselves our own mission, and present to management, in the most constructive way possible, very specific suggestions regarding, but not limited to, repertoire (symphony, pops, and youth concerts), program planning, and even areas that have been heretofore seen as the express responsibility of the music director, such as rehearsal time management and stage decorum. (Orleans, 1997, p.4)

Such a think tank would be akin to a central research and development process for orchestras. Alternatively, a decentralized approach would entail having orchestras exploit the advantages of smallness by breaking themselves down into smaller ensembles for different performance opportunities – chamber groups, sectional and chamber orchestras of various compositions, and so on. Within these subgroups, ideas can be more easily generated and cultivated on a continual basis than is easily done in the larger ensemble. In this way, an internal process of creativity is maintained that can invigorate the entire organization. Spich and Sylvester elaborate upon this idea as a model for orchestras of the future:

The 21st century orchestra could consist of a string ensemble, two or three woodwind quintets, two or three brass quintets, an early music ensemble, a multitude of keyboards, a percussion ensemble, a jazz big band, a battery of synthesizers and digital acoustic recreative equipment, a host of electronic instruments...and a multitude of world-music ensembles. (Spich and Sylvester, 1999, p.36)

The value of such decentralization lies not only in the increased number of possibilities for innovation at the subgroup level, but also the ability of the overall organization to respond creatively to external opportunities. Spich and Sylvester offer the example of the Columbia Symphony:

It worked as follows: Columbia Records wished to record major artists, soloists, and composers... In many cases, their time frame was much shorter than is typical of
program planning by a symphony orchestra. The traditional symphony orchestra is not terribly flexible in terms of available time for recording or isolated concert dates....The Columbia Symphony was a responsive and flexible organization, a virtual-type organization that could be created over and over again, each time including only the actual musicians needed, and each time dispersing after a particular project. (Spich and Sylvester, 1999, pp.36-37)

Such a “cut and paste” ensemble raises other issues regarding performance quality, similar to those experienced by pick-up bands as discussed earlier, but it does promise a new level of innovation and adaptation to a complex and changing environment.

Diversity

Other factors (such as size) held the same, an organization of diverse parts maintains a fundamental advantage for innovation that more homogeneous organizations forego: they intrinsically have more combinations with which they can potentially experiment. There are simply more possibilities to exploit in an orchestra of diverse instruments than in a homogeneous ensemble of tubas or accordions, or even human voices, no matter how flexible the instrument in question. Moreover, the number of combinations increases geometrically with the number of different types of participants. If there are two basic functions to be performed (melody and harmony), two instruments can combine to do this in two different ways (one plays melody, the other harmony or vice versa). If three instruments are available, the number of combinations rises to twelve (three choices for melody; then two for harmony; then the third can choose one or the other: \(3 \times 2 \times 2 = 12\)). Four instruments allows for 48 such combinations! And so on.

Of course the sheer number of possibilities is not the only determinant of innovative potential. While seemingly random mixing of radically different elements (e.g., Chinese and American musical systems; banjos and oboes) can sometimes be the basis for important innovations, there must also be a rationale for bringing such elements together; purely random experimentation rarely works – innovators usually have some idea of what they are looking for within a defined domain of possibilities. Moreover, there must be some common basis of communication so that diverse elements can be brought together in new, but sensible ways. Rap singers won’t mix well with flutes unless some creative genius sees a connection and finds a way to meld these elements together. Nonetheless, such mixes are not necessarily to be dismissed out of hand. Indeed, the history of jazz features various instances where very different traditions have been mixed, including bebop with traditional Japanese music, and jazz with European concert music:

In the 1950s a few jazz and non-jazz composers wrote some works that attempted to blend jazz and European concert music and create a new music....Most of it joined a jazz group with a chamber ensemble or orchestra. Often the jazz musicians had to deal with
structures, harmonies, and melodies that were foreign to their idiom, while the European-oriented musicians had to cope with equally unfamiliar rhythms, phrasings, and articulations. The results sometimes made the listener wish that the jazz group would simply play a jazz tune alone, and then let the chamber group or orchestra play some Bartok. But occasionally efforts to fuse the two traditions have worked. (Owens, 1995, p.234)

Professionalism

We have already seen how education can both foster and inhibit innovation. Thus, the level of professionalism in the work force can be an important determinant of an organization’s innovative potential. Generally, a certain level of professionalism or mastery is necessary before innovation is meaningfully addressed. If organizational participants have only a rudimentary knowledge of their field and are not experts in what they do, they cannot perform at the frontiers of their art, much less push those boundaries outward or in a different direction. Thus, amateur folk singing groups, jazz bands or orchestras are unlikely to advance their respective musical genres or change them in a significant way. If they are challenged simply to play the scores accurately and to maintain ensemble, they are unlikely to introduce changes in the music that alter its character in some important way. This opportunity is essentially reserved for ensembles at the top of their games which can take a score, or part of the existing repertoire, as a point of departure for experimentation. As noted earlier, ensembles can be held back in their progress towards innovation by the limitations of their least competent players.

However, mastery should not be entirely conflated with professional training. It is possible for amateurs or outsiders to achieve outstanding levels of performance and to apply their creative geniuses in ways that might never occur to those highly trained in traditional ways. Thus, an organization composed of eccentric but highly proficient amateurs, who have learned their art in nontraditional ways, may be even more likely to introduce substantial innovation than an organization in which the workforce is professional and traditional. While The Grateful Dead was a professional ensemble it captured this element of amateurism:

For some people, the flaw in the Dead utopia is the music. Along with their commitment to live performance, they’re fine on such rock virtues as democracy, pride in roots and lack of pretense. But they don’t do so well with concision (both songs and sets sprawl) or drive (the music is more likely to lilt) or charisma...[But] they insist that with a wink and a grin and a little ingenuity — and with homespun, spur-of-the-moment, hippie-tonk music — it’s possible to make it through...The Grateful Dead, lapses and all, are the right band to carry that message...The Dead are professional amateurs, happy to stay that way. And even if their music weren’t such a pleasure, they’d be something rock always needs: the exception to every rule. (Pareles, 1987b, p.H-24)

Mixing traditional professional and proficient nontraditional elements within an
organization in a manner that is functional and supportive of innovation is a substantial challenge. The two cultures are likely to be incompatible in many respects. A group of musicians accustomed to improvising and eschewing written scores cannot easily be dropped into the middle of a symphony orchestra, no matter how talented and creative they may be or how liberal and accepting the orchestra members are. Nontraditional players are likely to chaff under the discipline required to adhere precisely to directives, while traditional players are likely to be uncomfortable departing from prescribed ways of doing things. However, each type of player can draw on the other, and each may gain by emulating aspects of the others’ viewpoint. Nontraditional groups can benefit from the structured, systematic thinking and discipline that underlies professional training, as this framework can help put ad hoc experimentation and improvisation into perspective and suggest directions for future invention. So too, highly professional groups that adhere rigorously to the precepts of their disciplines may benefit from questioning their assumptions periodically and being open-minded to the possibilities articulated and explored by nontraditional groups.

Examples of this kind of mixing of genres and personnel are uncommon but certainly not unknown in music. They often yield interesting “cross-over” combinations. For example, Apollo’s Fire has mixed folk and early music classical players in concert, who were able to explore, perhaps for the first time, the musical connections between these two musical traditions. So too, an experiment incorporating folk instruments and players into a classical genre seemed to have worked out well for the Lincoln Center’s Chamber Music Society, successfully producing some new varieties of musical expression:

Edgar Mayer, the regular bassist of Lincoln Center’s Chamber Music Society and a musician with equal experience in classical and bluegrass, has teamed up with the banjoist Bela Fleck and the mandolin player Mike Marshall for a new classical-crossover album, “Uncommon Ritual”...The Chamber Music Society’s opening concert this season came mostly from the recording.... “Uncommon Ritual” is not a classical album. But neither does it belong to bluegrass, traditional Irish music, jazz or any of the other traditions it lightly borrows from....It’s sort of a chamberized health shake of music that’s acceptable to a National Public Radio listenership....If the music wasn’t classical, the presentation was. Mr. Fleck got to parade his considerable improvising skills for only a few lone choruses and otherwise delighted in playing the fish out of water throughout. (Ratliff, 1997, p.B20)

Instability

Within limits, turmoil is the ally of innovation. If environmental conditions are too chaotic, organizations may be destroyed before they can adapt. While this may manifest innovation through Schumpeter’s (1934) process of creative destruction, this situation is certainly dysfunctional for individual organizations, even if managed by progressive leaders who seek change. At the other extreme, organizations that operate in contexts of extreme stability are also unlikely to innovate. As Albert Hirschman (1970) has observed, organizations normally
undertake constructive change only when the environment sends clear signals that support is threatened if no change is forthcoming, but where there is sufficient slack to allow change to take place in time to prevent organizational collapse.

Unfortunately, some orchestras in the United States seem to have neglected to heed the signs of instability and loss of support in their environments and, as a result, have failed. A few, however, have taken advantage of crisis to reconstitute themselves in innovative ways that promise a better future. The Colorado Symphony is an important example (Freeman, 1996a). In this case, rigid procedures of collective bargaining and traditional modes of governance and programming gave way to flexible compensation arrangements for musicians, shared governance between musicians and community leaders, and flexible programming in public squares, shopping malls and other venues. It took a severe crisis, however, to accomplish these changes.

Environmental instability is often reflected in workforce turnover. In an organization that cannot assure stable employment under satisfactory conditions or in an environment where multiple opportunities abound for talented people, organizational members may come and go with substantial frequency. As noted earlier, such turnover can sometimes be healthy for innovation. New people bring fresh ideas and possibilities for new ways of doing things. However, much depends on who leaves and who stays, and whether internal stability and energy can be sustained in the transition. An organization where turnover is due to exciting cross-currents in its field of endeavor, where people come and go as a result of changing opportunities and personal growth, is likely to reap innovation benefits from this instability. But an organization that is losing its best personnel because it is stagnating or deteriorating relative to other organizations in its field, will tend to retain its less imaginative personnel, who have fewer options for alternative employment, and replace its lost talent with less creative individuals.

In summary, the potential for innovation varies with organizational context. The challenges to innovation are more substantial in larger organizations; in these organizations specific strategies for research and development and for emulating the benefits of small size through decentralization are required to foster innovation. Both highly professional organizations and organizations driven by very talented amateurs can nurture innovation, and each of these types of settings can benefit from the perspectives of the other. Finally, environmental and workforce instability can stimulate innovation, but chaotic environments can be destructive and workforce instability derived from organizational deterioration can inhibit the potential for innovation.

Priorities and Trade-Offs

In summary, we have seen that a variety of organizational circumstances affect innovation: size, heterogeneity, professionalism, and instability and task complexity. The matrix in Table 4.1 signals the variety of innovation challenges faced by a number of interesting alternative ensemble stereotypes.
Table 4.1  Ensemble Attributes and Innovation

<table>
<thead>
<tr>
<th></th>
<th>size</th>
<th>heterogeneity</th>
<th>professional level</th>
<th>instability</th>
<th>nonmusical analog</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fusion group</strong></td>
<td>low</td>
<td>high</td>
<td>low</td>
<td>high</td>
<td>multidisciplinary</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>research center</td>
</tr>
<tr>
<td><strong>Military band</strong></td>
<td>high</td>
<td>moderate</td>
<td>moderate</td>
<td>moderate</td>
<td>restaurant</td>
</tr>
<tr>
<td><strong>Early music ensemble</strong></td>
<td>moderate</td>
<td>moderate</td>
<td>high</td>
<td>low</td>
<td>church</td>
</tr>
<tr>
<td><strong>Ethnic folk ensemble</strong></td>
<td>moderate</td>
<td>low</td>
<td>moderate</td>
<td>low</td>
<td>family business</td>
</tr>
<tr>
<td><strong>Small jazz combo</strong></td>
<td>low</td>
<td>moderate</td>
<td>high</td>
<td>moderate</td>
<td>boutique retailer</td>
</tr>
</tbody>
</table>

The five illustrative stereotype ensembles present a wide variety of innovation challenges. For example, a fusion group, which combines two very different musical genres such as Cajun and rock music, can undertake fresh experimentation with largely unexplored combinations of musical expression from very different traditions, while the jazz combo can pursue established avenues of musical experimentation within a musical venue with a strong internal tradition of innovation. While both of these types of ensembles are small and flexible, they are best suited to pursuing innovation in very different ways. They also face somewhat different logistical challenges in doing so. The players in the jazz combo are likely to be transient but also highly educated in a common tradition. The transience can help stimulate innovation through the introduction of new ideas as players come and go, while their high level of training allows those players to experiment relatively easily during the time that they can play together. Hence the jazz combo is like a small boutique retailer, generating unique products from time to time, as its current, highly talented personnel permit. The fusion group, on the other hand, is more like a multi-disciplinary research center, bringing together experimenters with very different methods and ideas to work in teams on a new problem or product. The challenges in doing this are manifold. The players must learn to use common terminology in order to understand each others’ perspectives. Moreover, they may come to the organization with very different levels of professional development, some perhaps even without formal musical training. And the group is likely to be highly unstable because players will be constantly drawn back to the different musical genres from which they emerged, just as researchers are commonly drawn back to their home disciplines rather than remaining as part of interdisciplinary teams. Still, because the combinations of musical background brought to the fusion ensemble are so different, the potential for interesting experimentation and occasionally successful innovation remain high.

The early music group and the ethnic folk ensemble offer a different window on innovation. Both are likely to be moderately sized, fairly stable groups which innovate by preserving, rediscovering and enriching old musical traditions. In early music, ensembles have not only rediscovered old music, such as pieces from
the Renaissance or early Baroque compositions, but they have reconstituted this music by resurrecting and refurbishing the original instruments on which this music was played. Similarly, ethnic folk ensembles try to preserve the ethnic music and dance of communities that may no longer be sufficiently viable to maintain those traditions. In some cases, ethnic folk ensembles have achieved high levels of popularity, such as has been the case with Irish music, klezmer ensembles, and groups like the Chieftains, though these are more the exceptions than the norm. These two types of ensembles also face different challenges in their pursuit of innovation, and use different strategies as well. Early music ensembles pursue a highly professional approach, trying to unearth the true nature of past music and recreating it through research and intensive examination and experimentation. In some sense they are in search of a truth, not unlike that which might characterize members of a church. Ethnic folk ensembles, in some contrast, have a more celebratory approach, wishing to have fun with the music and preserving it by playing it for themselves and exhibiting it others, without excessive attention to its veracity. While such ensembles may suffer from some transience associated with amateur participation, they operate as a kind of family business, each player hoping to have a part in keeping the tradition going. In the process, members may seek to occasionally refresh the repertoire with varying interpretations or new songs, that can appeal to new members and audiences.

The military band enjoys modest levels of professionalism and stability in its player composition but must cope with relatively large size and also a hierarchical organizational structure in its approach to innovation. While it features moderate internal diversity of instrumentation, and hence has the capacity for experimenting with a fairly rich array of combinations, the rigidity that stems from size and structure, and the norms of the environment in which it operates, limit the degree to which unusual combinations are likely to be explored. Like a Chinese takeout restaurant, the military band can offer a fairly wide number of combination plates but most are likely to be recognizable variants of the standard fare. Hence, innovation will require either strong direction from the top, or a fundamental loosening of the structure.

Again, none of these stereotypes is completely characteristic of their counterparts in the musical world, nor are the suggested nonmusical analogs exact. Still, they are useful for prioritizing innovation strategies best suited to organizations that resemble each stereotype. The matrix in Table 4.2 describes relative emphases for innovation strategies for each ensemble stereotype.
Table 4.2 Innovation Strategies

<table>
<thead>
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<th></th>
<th>improvisation</th>
<th>internal dialogue</th>
<th>personnel turnover</th>
<th>role rotation</th>
<th>technical mastery</th>
<th>visionary leadership</th>
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<tbody>
<tr>
<td>Fusion group</td>
<td>2</td>
<td>1</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Military band</td>
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<td>5</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Early music Ensemble</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Ethnic folk ensemble</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Small jazz combo</td>
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<td>3</td>
<td>5</td>
<td>4</td>
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Internal dialogue is an important element of innovation strategy for all but the larger military band ensemble. That is because most of these ensembles are reasonably small in size and depend on the diverse experiences of their players to devise new ideas and new ways of doing things. Beyond that, the innovation strategies of these various ensembles diverge considerably. On the one hand, the fusion and jazz groups are virtually mandated to emphasize improvisation—indeed, their music is identified with either systematic or ad hoc experimentation with different combinations of notes, instrumental pairings, or rhythmic and melodic styles. Innovation at this level is a part of the product around which they define themselves. On the other hand, the early music and ethnic ensembles must keep improvisation within bounds so that they can focus on combinations that are likely to have been characteristic of the past. Within those parameters, however, these groups can employ improvisation to explore combinations that players from earlier times might have embraced.

The military band is limited in its ability to use internal dialogue and improvisation as strategies for innovation. It depends more heavily on inspiration and direction from the top, and in honing technical skills so that innovation may flow simply from doing things better than they have been done before, both at the level of individual playing and in putting individual contributions together into a more exquisite collective product. To a certain extent this top down innovation strategy can be supported by policies to recruit and retain the finest players, and possibly even trying new combinations of instruments within standard repertoires—such as reversing the roles of flutes and trombones in Sousa marches.

For different reasons, visionary leadership is likely to be an important element in innovation strategy for the fusion, ethnic and early music ensembles as well. Each of these groups needs a concept to work with, and leadership that can point the group in a particular direction as far as the nature and quality of its prospective product is concerned. While such groups can employ a democratic style of interplay to grope towards new and successful combinations they each need to
work within a defined envelope of practice, driven by an informed, inspired vision that is likely to come from one or a few individuals. Some one (leader) has to have a concept of how two different musical genres can fit together, or what early music is supposed to sound like, or how ethnic music can be preserved and enriched, before these ensembles can begin their experimentation. On the other hand, while jazz combos often benefit from inspired leadership as well, they are better suited to a more collegial approach to improvisation. With the jazz idiom fairly widely understood, small groups of masterful players can experiment among themselves without a single visionary leader to set direction or keep them inbounds. Hence, this type of ensemble is likely to be less dependent on visionary leadership for its inspiration and guidance to innovate, and more dependent on the interplay of technical mastery and ideas distributed throughout the group.

Again, as in the analyses in previous movements, the priorities identified for these various stereotype ensembles should not be taken as strict protocols for pursuing innovation in those contexts. Rather, this discussion is meant to emphasize three main points: (a) that different types of organizations are likely to pursue different combinations of innovation strategy, (b) that there will be substantial variation of these strategy combinations within any categorical stereotype, and (c) that thinking of a given organization in terms of a musical ensemble analog can be helpful for determining what kinds of innovation strategies are likely to be productive.

A Case Study

The Jewish Board of Family and Children’s Services (JBFCS) is a merger of two social service organizations with very different traditions and repertoire (Young, 1985). The old Jewish Board of Guardians (JBG) was a highly sophisticated professional organization that specialized in providing mental health and custodial care for delinquent, neglected and dependent children, mostly in institutional settings. The Jewish Family Service (JFS) was a neighborhood based organization that specialized in counseling of troubled families so as to prevent more acute socially problematic behaviors. Both organizations were good at what they did, but times were changing in the 1970s and these organizations felt both economic and social pressures to respond in new ways. An opportunity came in 1978 when the CEO of JFS decided to retire and saw this as an opportunity to break new ground. Together with his counterpart at JBG, they conceived the notion of merging the two organizations so that a new comprehensive approach to social and mental health services could be developed – one which would combine, and find the appropriate balance of, preventive and treatment services to help troubled youth and families.

The vision for this innovation came from the top, with the leaders of JBG and JFS setting the boundaries and direction for actually working out and implementing this new idea. Finding the specific adaptations and changes that would appropriately combine preventive and treatment oriented approaches into a
new genre of mental health service, however, relied on several other basic strategies. Viewing JBFCS as a “fusion ensemble,” internal dialogue and improvisation were critical as work groups were set up at the staff and governing board levels to devise plans for changing and combining their former repertoires. Role rotation played a part as individuals from the partner organizations tried on each others’ tasks and responsibilities for size, and in some cases even decided that rotation of individual appointments would be appropriate (including chairmanship of the board). Technical mastery of contributing skills was assumed, but less emphasized until a new genre of care could be developed. Meanwhile, players already accomplished in their own disciplines would be depended upon to continue to do good work while becoming more adaptable to coordinating their work with that of others. And ultimately, achieving innovation would also depend on personnel turnover, as new people would join the organization with fresh perspectives on how a holistic approach to mental health care could be pursued through greater balance and synthesis of prevention and treatment.

The JBFCS case is distinctive both in its ultimate success, in the challenges it faced and the long time it took to really achieve innovation through the synthesis of complementary but substantially different approaches, and probably in its rarity as well. Like fusion groups in music, this mode to innovation through radical new combinations does not often occur and succeeds less often still, but when it does, the outcome can be path-breaking. The success of JBFCS in achieving innovation resulted from a conscious and calculated management strategy to exploit the differences between JBG and JFS so as to allow a new genre of service to emerge, while minimizing the pitfalls that could lead to the disintegration of this ensemble. Internal dialogue, improvisation and visionary leadership were the key elements of that strategy.

Diagnosing An Organization

The experiences of musical ensembles suggest a number of areas that managers can examine as potential sources of innovation within their own settings. In this connection, managers can ask themselves:

- What variations in the standard rules and procedures of the organization might lead to new and interesting ways of getting the work done?
- What styles of products or service delivery used in other fields of activity might be usefully adapted to the context of this organization?
- How can the roles and responsibilities of different work groups within the organization be periodically exchanged to encourage new ways of carrying out the organization’s tasks?
- How can the roles of various workgroups be differentiated and recombined new ways?

Managers can consider doing a number of different things to improve the
environment for innovation within their organizations. Hence, they can ask themselves:

- Where can rules and procedures be eliminated so as to permit organizational participants more room to improvise and use their creativity and judgment? What protocols can be devised to guide such innovation?
- What arrangements can be made to encourage a free flow of communication among organizational participants so that they can exchange and comment on each others’ ideas? What arrangements can be made to allow participants to get to know each other better in order to encourage collaboration and sharing of ideas?
- How can organizational participants be further educated to become aware of both the limitations of, and basis for, existing ways of doing things? How can the narrowing effects of existing modes of worker education be overcome?
- How can the fresh perspectives of amateurs as well as diverse professional disciplines be brought into the thinking of the organization? How can elements of professionalism and amateurism be combined in the organization to encourage new ways of thinking?
- What degree of practice and repetition of particular organizational tasks will achieve levels of mastery capable of inducing innovation, but avoid decline from enervation?
- What mix of personnel in work groups will encourage a high level of creative interaction and group learning?
- What level of transience in work groups encourages the flow of new ideas without disrupting the creative energies of these groups? How can intergroup mobility facilitate the flow of new ideas?
- How can the status of different work groups be modified so that status differences do not inhibit the exchange of ideas?
- In larger organizations, how can think tanks, or research and development groups, be organized to stimulate and encourage innovation throughout the organization?
- How can a large organization be broken down into smaller groups for purposes of experimenting with new ideas?

Finally, the cultivation of leadership within the organization can be critically important to its support of innovation. Managers can ask themselves:

- How can entrepreneurial leaders be recruited or developed within the organization?
- How can leadership expectations be distributed among participants throughout the organization and how can localized leadership be encouraged?