

# Conflict Management in Software Development Environments

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## Why This? Why Now?

Conflict management is one of the next frontiers in software development productivity improvement. Given the rate of technological change over the last three to five years and the projections for the continuance of this trend, perhaps you find it strange to highlight *conflict* as the next frontier. Or, perhaps you have recently experienced a project or corporate failure that was due to conflict between *people*, as opposed to software components, and you are not at all surprised.

Usually it takes something like a catastrophic failure or a continuing underperformance in the market to get us to pay attention to the obvious. Poor conflict skills at all levels of the technology development environment are the basis for tremendous loss of revenue every year. We executed this survey of the literature on conflict as it relates to technology development environments, particularly software, as part of the preparation for the workshop entitled “The Link Between Creative Product Development and Conflict Management: Problem Solving for Project Teams” to be offered at the Pacific Northwest Software Quality Conference 2000. This paper provides a context for that workshop. Based on our observations of the industry, focusing on conflict management skill building is an idea whose time has come.

Poorly managed conflict is related to impaired productivity. Employees spend more time in meetings trying, usually unsuccessfully, to make decisions – any decision, let alone a good one. The meetings end, the employees go back to their offices or cubes and shortly reform in virtual or actual knots of combusting humanity, rehashing the meeting, reviewing the problem, placing blame – and wasting precious time and bandwidth.

They rehash and blame because they either don't know how, or don't feel that they can, do anything else. And while they are paralyzed with indecision, frustration, rage, and fear, they're not focusing on getting the product to market with any degree of efficiency. They're wasting time and money and, quite possibly, polishing their resumes. Maybe they'll make a quick call to the shop down the road with five positions open for folks just like them, and tell their buddies on the team about the prospective financial packages available if they bail out on this lousy project that isn't going anywhere anyway. Or, just as likely, they're sitting and churning, developing chronic colds and flu, not to mention ulcers, heart disease, hypertension, and migraine headaches – all of which translate into recurring paid time off, again impeding the project.

We all know this. If you've been around the block for even a couple of years, you've probably spotted the pattern. But what's the cause? Skillful conflict management is not part of the dominant high tech culture. Technology development is still largely a U.S. phenomenon, and the dominant culture is known to be short on good conflict skills.

From good old Daniel Boone, who felt compelled to move on whenever he saw the smoke from the neighboring cabins, to weapons packing, gang leaders at the local middle school the hard, cold, isolate individualists that Thoreau wrote about have made this country great through their highly competitive brand of capitalism. They have carved out and legitimized a way of working that has little to do with collaborative problem solving and very much to do with conquering the guy next door, even if he's ostensibly on your team. Because, in today's technology development environment, today he's on *your* team, next month he's on your *competitor's* team.

Improving conflict management skills across the workforce holds great potential for increased productivity. When people know how to operate effectively in the face of the conflicts that will inevitably come their way, they can more easily make decisions quickly. Those decisions will more often be good decisions, stripped of the baggage that accompanies dysfunctional conflict. *Engaging in conflict effectively, or functionally is the key.* Eradicating conflict from the environment is not only impossible, it is undesirable. It is no better than leaving it unaddressed to run rampant through the team. Technology development is all about creative problem solving; a certain level of conflict is essential to any creative endeavor.

### Overview of the Paper

This paper reviews the current literature on:

- Conflict response styles and their subsequent relationship to successfully managing conflict.
- The financial cost of conflict in technology development organizations, particularly as that relates to retention and project failure.
- The current thinking on ADR (Alternative Dispute Resolution) system design in organizations.
- How systemic and targeted ADR solutions can most effectively address conflict management issues in the current market and drastically cut the costs of conflict in your organization.

This paper includes an annotated bibliography of sources as well as an interpretation of the research. In addition, it presents the data upon which the workshop, "The Link Between Creative Product Development and Conflict Management: Problem Solving for Project Teams" is based.

We hope it in the remainder of this paper to raise your awareness of the connection between conflict management strategies and high tech project success and stimulate discussion around conflict management in technology development environments.

### Responding to Conflict

They say it takes two to tangle. Conflict can exist in any given situation without it being necessarily dangerous to relationships, communication, or productivity. However, we often equate conflict with damage and negativity. In a classic work on mediation, Folberg and Taylor give us two reasons why conflict can be damaging.

“Although conflict is not necessarily bad, wrong, or intolerable, our society often views conflict negatively because it is equated with win/lose situations. . . .and conflict is commonly viewed by the participants as a crisis. A crisis mentality lends itself to destructive processes because people will often rush to use anything (usually not the best process) they believe will relieve the conflict.”<sup>1</sup>

But to prevent damage, it's essential that at least some of the participants in the conflict respond in a productive manner. The more team members there are who are skilled in responding to conflict, the more likely the conflict will be productive and short-lived.

Conflict is also very complex even though it may appear very simple on the surface. Underneath every conflict is a host of possible competing and compatible reasons for the conflict. Fisher and Ury, outline some possible underlying reasons why people may be in conflict.

- Form vs. Substance
- Economic Considerations vs. Political Considerations
- Internal Considerations vs. External Considerations
- Immediate Future vs. More Distant Future
- Ad hoc Results vs. The Relationship
- Hardware vs. Ideology
- Progress vs. Respect for Tradition
- Prestige and Reputation vs. Results<sup>2</sup>

The list above illustrates why we often begin believing we are in conflict about the same thing, but we end up fighting over apples and oranges.

We've researched the literature on conflict response styles and their subsequent relationship to successfully managing conflict, paying particular attention to software development

environments. For a complete listing of sources consulted, see the attached annotated bibliography.

As we did this research, we considered the following:

- A certain level or volume of conflict is needed in an organization to motivate change and encourage creative thinking. Conflict is inevitable, and it can also be beneficial.
- There are particular styles of responding to conflict that are successful in any given situation. The skill in managing conflict is to assess the effective response given the situation.
- The degree to which technology development personnel as a population can be characterized as both highly competitive and conflict avoidant.
- How people can gain conflict management skills.
- That team members perceive a relationship between skillfully dealing with conflict, job satisfaction, and high performance.

### **Conflict and Creativity**

A certain amount of conflict is needed in an organization to motivate change and encourage creative thinking. Several sources speak to the issue of the importance of allowing conflict to flourish to stimulate creativity.

In *Managing Technical People* Watts Humphrey notes that “Nothing can destroy the effectiveness of a team more quickly or more completely than unresolved conflicts between the members. Inevitable differences and disagreements will crop up in any fast-paced organization, but the members themselves can generally work them out. Occasionally, however, the problems are too complex or pervasive, and a highly destructive process ensues. Rather than face the continuing unpleasantness, the disagreeing parties start to avoid each other. The reduced contact that results causes a total break in communication. This temporarily reduces the unpleasantness, but it also makes it almost impossible for the parties themselves to resolve the problem.”<sup>3</sup>

Though communication is often fostered by standard organizational practices such as team meetings, status reports, and the like, human communication is a very subtle thing, and robust communication cannot be coerced. The most important subtleties of communicating and relating to others typically attended to by proactive team members drop away when unacknowledged conflict is present. For example, the very thought of approaching Bob regarding a design change in the new calculator interface becomes abhorrent to Jane as she remembers how she felt the last time she talked to him. She may not put the word “conflict” to her reluctance, but unacknowledged conflict is present. And, Bob doesn’t find out about the design change until the application goes to field test, far too late for him to respond productively. He now has more fuel for the fire he intends to build under Jane.

The first rule of resolving conflict at any level, interpersonal to intergovernmental, is to keep the lines of communication open, even if shuttle diplomacy using a third party is required.

Humphrey goes on to say, “Under these circumstances outside intervention is generally required.”<sup>4</sup> This indicates the need for trained mediators to be engaged as a means of reestablishing communication between disputing team members. Humphrey further states that third party conflict resolution can be helpful because the mediator can help move parties off their polarized positions, can help the participants see what they both have to gain from reaching an agreement and can help reduce the stakes so that neither party feels pressed to give up too much. Mediators can also help people in conflict surface the underlying reasons for their conflict (see the Fisher and Ury list above) which can broaden the number of settlement options.

Additionally, Humphrey contends “no conflict between team members can be resolved by dealing with them separately. They both must be equally involved and must openly accept the conclusions. Since silence is not a reliable indicator of consent, both parties should air their opinions and restate the final agreement.”<sup>5</sup> A skilled facilitator is required when either party is in any way conflict avoidant or hesitant to engage in direct communication.

Regarding conflict and performance, Humphrey states “No group of active and intelligent professionals can function for very long without generating friction of some kind. Disagreement is natural, and...it often stimulates performance. When a group of professionals are personally compatible but intellectually competitive, friendly rivalry generates the highest overall group performance. When the disputes become personal, however, performance invariably suffers.”<sup>6</sup>

Humphrey’s theory of “contention management” indicates that managing conflict is an ongoing process that “...leads to the most effective group performance.”<sup>7</sup> Contention management makes sure all decisions to be made are “out on the table.” People who disagree with a decision are responsible for escalating their opinion in the team, and if there is no opposition to a decision, the issue is deferred until sufficient opposition and contention is voiced.

According to Humphrey “The reason contention is so effective is that it both exposes the organization’s latent conflicts and helps keep the discussions on a rational plane. When decisions are made in secret, the debates become political, and a feeling of distrust invariably develops among the top managers (and team members).”<sup>8</sup> This approach works well in an environment where most or all team members respond well to conflict. However, without good conflict skills, dialog can quickly devolve to argument and debate.

This seems to be the ideal form of conflict resolution to Humphrey, but we question how management by contention works for team members and managers who are conflict avoidant or who see expressing disagreement as disrespectful or unpleasant, as this author articulates in an earlier chapter. As we will show in a later section (see Effective and Ineffective Responses to Conflict on page 14) Gobel and Koenig indicate that confrontation (which we map to collaboration) and give and take (which we map to compromise) will

likely increase team member satisfaction, thereby proving a more effective response to conflict.

In “Corporate Culture in Internet Time” Art Kleiner discusses the case of an e-commerce consulting firm that he feels typifies the difficulty of managing conflict in small technology development firms. In the case he cites, conflict has permeated the organization and has even leaked outside to the customer. He recounts the woes of one of his former students as she tries to manage the disputes in this small start-up.<sup>9</sup>

Kleiner postulates that there are two cultures present in every e-commerce organization; he identifies these as the cultures of “hype” and “craft”. In this analysis, he draws a division similar to that found in William E. Souder’s “Managing Relations between R & D and Marketing in New Product Development Projects.”<sup>10</sup> Both authors point to what common sense indicates, that the personality and culture of the engineering department is markedly different from the marketing department.

The participants in the culture of hype are those who raise the capital, articulate new ventures, and sell the product. Kleiner finds this group in direct and necessary conflict with the participants in the culture of “craft”. The culture of craft includes

Programmers, designers and practitioners of the new profession of information architect . . . all artisans at their core. Like members of a craft guild, they like to delve deeply into a project, come to an understanding, and deliver an elegant solution. Even when individual artisans are sympathetic to the hype ethic (or when they stand to make millions from it), the culture of craft is innately persnickety, recalcitrant and suspicious. (It has to be, because craft work requires moving into a hype-free, reflective mental space where there is nothing but the hum of the work, where effort takes place on a semiconscious level, where the writing and design flow through the mind in a way that will not suddenly shift gears just because a new, more insistent client has arrived.)<sup>11</sup>

Kleiner then points out that software development is not exceptional in that these cultures have existed within new organizations for hundreds of years. It is exceptional in that these cultures are currently dominant.

These cultures of hype and craft, of course, aren’t limited to Internet and e-commerce businesses . . . Only in a few industries have hype and craft remained prominent as corporate cultures. Whether by coincidence or from some fundamental reason, these have included the most critical industries of the Internet Age: personal computers, Internet technology (but not mainstream telecommunications), software and media content.<sup>12</sup>

Some would argue that this is because the business of software development, though it has had a huge cultural impact so far, is still in its infancy.

The author holds out hope for reconciling these two conflicting cultures and points out why this reconciliation is relatively uncommon.

The hype people, if they're smart, learn to protect the craft people, instead of draining them. They know that sophisticated craft people need clear boundaries within which to make choices time for reflection, and a chance to express their ideas. Similarly, smart craft people gradually learn, sometime during their career, to value the strategic primacy, and the groundbreaking audacity, of the culture of hype. They even learn to speak effectively to the strategists. But HTML and Java wizards in their early 20's typically haven't learned how to do that yet, and they won't learn it while under the gun of a Christmas Web site deadline.

The result is debilitating and thoroughly unnecessary culture clashes. The management style that brings hype people success in their world makes it difficult for them to manage craft people effectively.<sup>13</sup>

Elsewhere in this same article Kleiner describes why and how a vicious cycle of intensifying conflict can build between these two cultures over the life of the organization.

As Gruber points out, we “often view conflict as the problem child... something to eliminate” yet “students of creativity often view conflict as it’s necessary companion.” We know that “conflict resolution requires collaboration, if not as the goal than at least as the means. Creative work has been treated, by and large, as an individual effort, sometimes painfully isolated.”<sup>14</sup> This link is important to software development teams, as software team members must work with other team members from different professional backgrounds, and they all must creatively and collaboratively solve project problems on a daily basis.

Johnson, Johnson, and Tjstvold advocate constructive controversy as a necessary source of creativity. “Constructive controversy occurs when one person’s ideas, information, conclusions, theories, and opinions are incompatible with those of another, and the two seek to reach an agreement.”<sup>15</sup> “Constructive controversy tends to promote creative insight influencing individuals to (1) view problems from new perspectives and (2) reformulate problems in ways that allow new orientations to a solution to emerge.” They have hit upon exactly the kind of problem solving required in software development. Further, the authors say “...constructive controversy increases the number of ideas; quality of ideas; creation of original ideas; use of a wider range of ideas; originality; use of more varied strategies; and the number of creative, imaginative, and novel solutions.”<sup>16</sup>

Coleman and Deutsch also speak to the necessity of conflict in creative endeavors. “One of the creative functions of conflict resides in its ability to arouse motivation to solve a problem that might otherwise go unattended.”<sup>17</sup> Supporting the findings of Gobeli and Koenig, the authors state that “...a competitive, as opposed to cooperative approach to conflict leads to



restricted judgement, reduced complexity, inability to consider alternative perspectives, and less creative problem solving.”<sup>18</sup>

During the course of a project, team members tend to experience what might be characterized as “creative highs”, those endorphin-laden periods that keep us working productively into the wee hours of the morning oblivious of the time, and “conflict lows”, those points at which we “hate computers” and wonder what motivated us to join this house of horrors. Coleman and Deutsch help make sense of this experience. “Tension is the primary link between conflict and creativity. Conflict signals dissatisfaction with something or someone. This dissatisfaction brings tension into the system. If standard approaches to reducing tension are ineffective, it increases. This increase can eventually motivate people to seek new (creative) means of reducing the tension.”<sup>19</sup>

Coleman and Deutsch point to using someone skilled in managing conflict to nudge participants stuck in an unproductive conflict into a more creative space. “A third party, such as a mediator, can bring new thinking (creativity) into a stuck conflict. Also, by making the parties aware of their potentially “creative” differences in what they value, their expectations, their attitude toward risk, their time preferences, and the like, we help them see that their differences can facilitate mutually satisfactory agreement.”<sup>20</sup>

William Bridges also addresses the connection between creativity and conflict in *Managing Transitions: Making the Most of Change*. He distinguishes between change and transition (transition being the human process, or response to change), and calls attention to “the neutral zone”, the place in between the ending of the old and the beginning of the new. “Transition is like a low pressure area on the organizational weather map. It attracts all the storms and conflicts in the area, past and present.”<sup>21</sup>

He argues that change happens, and the related transitions must be well-managed in order for the change to “take”. He draws our attention to “the neutral zone” as a critical aspect of change, one that is often ignored. He contends that individuals, organizations, and even whole nations deal with the discomfort of the neutral zone during times of change. In an organization, the neutral zone can be described by rising anxiety, falling motivation, and the re-emergence of old weaknesses and disputes. However, Bridges also points out the more positive opportunities inherent in the neutral zone, most significantly, that it is a time that is “ripe with creative opportunity.” Properly managed, it can be mined for creative solutions and new innovations. He goes on to offer a laundry list of management suggestions, as well as commentary on managing in a world of non-stop change.

So, given that conflict is necessary to the creative process and software development is heavily laden with demands for creative problem solving, why do we need to manage conflict? Can’t we just bulldoze our way through a conflict and figure that those who can’t take the heat should get out of the proverbial kitchen?

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Well, suppose that there is a way to minimize the potential damage of that approach. Some ways of dealing with conflict are very effective, increasing productivity, while others are actually destructive and can send a project into a tailspin.

## Responses to Conflict

There are particular styles of responding to conflict that are successful in any given situation. The skill in managing conflict is to assess the appropriate response to conflict given the situation.

Some of the many styles of responding to conflict include avoiding, accommodating, competing, compromise, and win/win, as shown in the table below.<sup>22</sup>

<b>Style</b>	<b>Purpose</b>	<b>Effect</b>
Avoidance	I don't want to deal with the conflict.	"You win."
Accommodation	I'll let you have your way and it's O.K.	"You win."
Competition	I'm going to get what I want and you're not.	"I win, you lose."
Compromise	I'll give a little and you give a little.	"We both win a little and lose a little."
Win/Win, or Collaboration	We both get what we need when we listen to each other and work together.	"We both win the most."

Each of these styles is described in more detail below. The details help you identify when a team member might use this response and what that might look like behaviorally.

### Avoiding

When a team member avoids a problem, he knows there is a problem but he acts like there is no problem at all. He would rather ignore the problem or walk away from it than confront it. The result is that the problem is still there, and he may feel guilty for not dealing with it.

However, avoidance has its uses. It can be useful when:

- The issue is trivial. Some things aren't worth fighting about.
- The avoider has little power or feels that he does in this dispute. He may work the overtime rather than speaking to upper management about unrealistic deadlines.

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- The perceived potential damage of confronting outweighs the benefits. If he confronts upper management unskillfully, he could lose his job.
- People need to "cool down". There has been a yelling match, and he perceives that the conflict has become personal rather than about the issues.
- Time is needed to gather more information. He can make a better case later if he can do more research before addressing the conflict.
- Another person can resolve conflict more effectively. He does not feel that his skills, position in the organization, or perceived role is seen as appropriate credentials for addressing the conflict.

### Accommodating

When a team member uses accommodation to respond to conflict, she lets the other person “win” just to end the confrontation. She lets the other person have or do what they want in order to preserve and enhance her relationship with a co-worker. The other person may not have heard or understood what she was trying to say or what her interests were.

Accommodation can be useful if she wants to:

- Learn from others. She may need to change her lunch date in order to go to a noontime brown bag session on a new technology.
- Show she is reasonable, as in making a goodwill gesture. For instance, to invite participation in a negotiation, the team member may accommodate another team member’s request for information or other resources.
- Acknowledge that an issue is more important to the other person. If she is in conflict over the deadline that a user documentation review will be returned to the writer, she may reprioritize her task list and arrange to do the review sooner than she had planned.
- Build up "social credits". This can be like trading favors. I accommodate you on this issue this time; implicitly, you will accommodate me on another issue in the future.
- Allow others to learn from mistakes. She may let her team member “win” even though she knows the solution will fail in order to give her team member an opportunity to learn a needed lesson.

### Competing

The team member will likely compete when she is out to “win” and make the other person “lose.” Sometimes a team member feels she must get her point, her interest, across to the other person **no matter what!** The result is that she may get what she wants but she may also damage the relationship with the other person in the process.

Competition works as a response to conflict when:

- A quick response is necessary. The product is two months from shipping; she believes there is no time for negotiation.

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- An unpopular course of action is needed. There are staff cutbacks coming; those who perform stay employed.
- Protection against aggressive behavior is desired. Someone has his eye on her role as a team lead.
- The rules demand competition and the rules of the competition are clear. Individual bonuses are paid out based on ranking system that gives the highest performers the biggest bonuses.

### Compromising

A team member is compromising when he gives up something and the other person gives up something. They don't necessarily discuss what the reasons are or what the impact is of what they are each giving up. Each person does not know the full perspective of the other's point of view. Each person gives a little and gets a little. The result is that the situation may be resolved quickly but it may not be the best resolution, and it may not last. It also can be a lose/lose situation where people "give in" and neither achieve their goals.

Compromising can be useful when:

- Goals are moderately important but not worth the time and effort of a more assertive style. If preserving the relationship with his supervisor is more important than the goal of not working overtime, he will compromise and work at least some overtime.
- The participants in the conflict have equal power and are committed to a mutually exclusive goal. His goal is to debug the component he is working on and rebuild by 5:00p. Jane's goal is to get bug 3285 fixed before the beta test of the software. They agree that he will update the problem report today, but he will not do the work until tomorrow.
- Temporary agreements and quick solutions are needed. Team members don't have time to go into elaborate detail about a solution so they agree to do a "quick fix" now and develop a more detailed solution later.
- Collaboration/competition fails and a back up plan is needed. Compromising can be a "Plan B" or part of an interim plan, as described in the example in the bullet above.

### Collaborating

When a team member collaborates, she listens to each disputant's point of view. All team members state their interests, give each other explanations and reasons why they feel the way they do (interests), and advocate for their version of the solution to the problem. Then all disputants research and communicate to figure out what the best solution is for all concerned. The result is that all disputants understand the reasons behind what each wants. The resulting solution is based on those reasons (interests), and will probably be the best for both the team and the organization as a whole. Collaboration gets the most for all involved in the problem-solving process.

Collaboration works well when:

- The issues are too important to be compromised. She is participating in a feature set definition process. The features they include in the release being planned directly impact the organization's bottom line.
- People want to preserve/improve relationship. She found the poor relationship with marketing in the past resulted in marketing not sharing information about the customers that directly impacted the success of the last release.
- There is a desire to get insights from others who have a different perspective on a problem. She needs the customer information that marketing routinely gathers and stores only in the heads of its specialists.
- It is important to gain commitment from all involved. She doesn't want the feature set changed after implementation has begun.
- An increase in follow-through is desired. When team members invest their time in a collaborative solution they are more likely to invest time in the implementation of the solution.

All of these modes of response to conflict are valid in some situations. However, two modes, avoidance and competition, are more harmful in work teams. One mode, collaboration, facilitates better decisions faster. Collaboration also improves team member relationships, performance, and follow through.<sup>23</sup>

### **Effective and Ineffective Responses to Conflict**

As show above, competition and avoidance tend to be effective under some circumstances, but they are antithetical to collaboration, which is what is needed on cross-functional teams, the norm in technology development environments. According to Gobeli and Koenig<sup>24</sup> in their 1998 study of conflict in software companies in the Pacific Northwest,

- Unresolved conflict has a strong, negative impact on overall software product success and customer satisfaction.
- Managing conflict well will increase the chances of success; not managing conflict well will worsen the conflict, decreasing the chances of success.
- Confrontation (collaboration) and give and take (compromise) will likely increase team member satisfaction.
- Withdrawal (avoidance) and smoothing (accommodation) will have marginal effects, and forcing (competition) will decrease member satisfaction. Forcing appears to have an even greater negative impact at the project team level as opposed to the organizational level.
- To the extent that management style affects success via conflict intensity, project level management should emphasize confrontation over give and take when conflict surfaces.
- In general, a sign of trouble for management to monitor is frequent use of the dysfunctional conflict management styles including withdrawal, smoothing, and forcing rather than the more functional approaches of give and take and confrontation.

The link between conflict and project success and team member retention is of particular interest to us. After reviewing Gobeli and Koenig's research, we felt it was important to attempt to uncover another layer of the team member experience strata where conflict is concerned. To do this, we surveyed 261 students who have attended the Project Management series at the Portland State University Professional Development Center series on project management, where Lisa Burk is an adjunct faculty member. In informal surveys of classes in this program it appeared that one third to one half of the students work in high tech and one third of the reasons cited for project failures is the unsuccessful management of conflict and poor or lack of communication.

Of the 261 students who received the survey, 180 were estimated to be working in technology development. We received 56 responses from qualifying recipients. The data gathered (discussed in Appendix A) was interesting in that it seems to validate two of the expectations that caused us to initiate this review of the literature:

- Conflict is not recognized as a cause for project failure, but rather “part of the job to be endured” that it “comes with the territory”.
- Conflict skills training is “not on the radar” in this industry as a possible solution to communication problems, though human communication experts have long acknowledged conflict skills as trainable and a key component in effective communication.

As will be shown later (see Conflict is Related to Increased Costs on page 34), job satisfaction criteria far outrank financial rewards with regard to retention, and we believe that low staff retention is an indicator of a high rate of unmanaged conflict in an organization. The details of our research and the questionnaire we used appear in Appendix A of this paper.

Our conclusions include the following:

- As Gobeli and Koenig found, effective conflict management is related to team member satisfaction.
- There is a high correlation between ineffective conflict management and project failure.

As will be shown later, job satisfaction relates more closely to an employee's choice to stay with the organization than does financial reward. When conflict is managed poorly, the risk that the team member will seek work elsewhere dramatically increases. But does this mean that there needs to be a conflict manager on every team?

No, we don't think that's the answer. Rather, increasing the conflict response skill level of the entire team is more effective. Conflicts are ubiquitous. They arise quickly and usually between two individuals. Take for example, the “flare up” between two individuals at the fictitious Megatroid project. (The underlying reasons, or interests, are provided in italics.)

**Usability Engineer**

“Here is my proposal for a series of customer site visits to help us gather data to feed into the requirements definition phase in the development of the new Megatroid project.”

**Product Manager**

“Why do you need to do this?”

**Usability Engineer**

*[Thinking] Isn't it obvious? Haven't we talked about this before? This is my job!*

“This process will gather the data we need to understand our customer's environments and work styles as well as how they use our current products, our competitors products, and any homegrown solutions they've created. Knowing this kind of information will help us create a set of requirements that are more reflective of the marketplace and therefore, result in a more saleable feature set.”

**Product Manager**

*What is she talking about? If we didn't know that the customer needed this new product, we would never have funded a development team to build it. It's my job to know this kind of stuff!*

“Like I said, why do **you** need to do this?”

**Usability Engineer**

*This guy is nuts? What's wrong with him? Doesn't he think I know what I'm doing?*

“In the past we have only done usability testing. That's reactive, and at best, can only find problems in the design after they are already present. That's far more expensive than developing a sound set of requirements based on user and task analysis which results in a feature set and implementation criteria that prevents the problems we might identify in usability testing on the back end.”

**Product Manager**

*That's it, she's operating in my area. I'm sick of this.*

“Listen, we're about out of time for this topic in this meeting. What I want to see is a list of the top five questions you are going to ask the users – by next week.”

**Usability Engineer**

*What the hell does he think he's doing?! He's not my boss.*



“Why do you need this?”

### **Product Manager**

*Now I've got her.*

“Because my budget is funding this, and I need to understand what the benefit is here. I need to have more information before I can decide whether it makes sense to do this.”

### **Usability Engineer**

*Damn. It is his budget.*

“Okay, fine. I'll send you something by next Wednesday.”

[Departs in a subdued huff.]

Often those individuals are interacting without an audience or immediate supervision, as exemplified in our characters above. The point of the flare-up is where the flame must be tempered. All team members need proper conflict response skills. In our example above, this conflict could have been easily managed if both people had used effective conflict management skills, in this case, communicating the real reasons beneath their conflict.

## **Conflict Skills Development**

How do people who do not currently have good conflict response skills gain those skills? As with most adult learning, they internalize theory through practice. Raider, Coleman, and Gerson address this issue most concisely. They describe six insights gained from teaching negotiation and mediation to adult learners:

- The first pedagogical insight is that each learner has a unique and implicit “theory of practice” for resolving conflicts.
- Second, learners need both support and challenge to examine their own theory of practice. Intellectual and experiential comparison of competitive and collaborative processes can create challenging internal conflict for learners.
- The third insight is that experiential exercises shift the responsibility for learning from the trainer to the participant.
- Fourth, self-reflection based on video or audio feedback gives many learners motivation to modify problematic behavior.
- Fifth, user-friendly models and a common vocabulary enable a group of learners to talk about their shared in-program experience.
- The final insight is that learners need follow-up and support after workshop training to internalize new concepts and skills.”<sup>25</sup>

The authors also give seven workshop modules for conflict resolution training, which we support. These modules are:

- Overview of Conflict
- The Elements of Negotiation
- Communication Behaviors
- Stages of Negotiation
- Culture and Conflict
- Dealing with Anger and Other Emotions in Conflict Situations
- Introduction to Mediation<sup>26</sup>

Slaikeu and Hasson see conflict resolution skills training for all employees as a method to reduce stress and save time, and as critical component to a successful conflict management system.<sup>27</sup> They suggest two types of training.

- An orientation to the approach the organization or team is taking regarding managing conflict.
- Skills training for all employees, managers and specialists in communication and conflict resolution similar to the outline listed above.

They also suggest that managers with supervisory authority need additional training in “coaching” and “informal mediation.”<sup>28</sup>

Slaikeu and Hasson provide several suggestions for best practices in conflict skills training:

- First, distinguish between orientation and skills training, neglecting neither.
- Second, review existing skills courses.
- Third, target skills-based training to individual job functions.
- Fourth, consider several training formats geared towards the needs of participants.
- Fifth, Coordinate with other training programs in the organization.

### **Conflict Skills and Professional Mastery**

Given how difficult dealing with conflict is for almost everyone, why would a team member be interested in gaining conflict resolution skills? And, why would an organization be interested in encouraging the team member to take time away from designing and implementing a new product to spend it on learning how to respond to conflict?

The answer from the organization’s point of view is fairly straightforward: Conflict-skill-competent team members are more likely to be contented team members. Contented team members are less likely to leave the organization. Hiring and training cost **a great deal of money** (see Conflict is Related to Increased Costs on page 34).

“...If your organization is more like the norm, there will be line managers who are clueless about what people really want and what makes them vulnerable to talent theft. According to the *Harvard Management Update* (June 1988) 9 out of 10 managers think people stay or go because of money. We know that’s not the case. Money and perks matter, but employees tell us again and again that what they want most are challenging, meaningful work, good bosses, and opportunities for learning and development.

A 1999 Hay Group study of more than 500,000 employees in 300 companies found that of 50 retention factors, pay was the least important. Our research of more than 2,000 respondents from diverse industries and functions shows similar results....The top three reasons people stay are: 1) career growth, learning and development; 2) exciting work and challenge; and 3) meaningful work, making a difference and a contribution....

Once people attain a certain level of material comfort, they care most about what they do every day and who they do it with. They care about the content of their work and whether there are opportunities to stretch and grow in the job and in the organization. They want feedback, recognition, and respect from their bosses.<sup>29</sup>

The above studies were not specific to software development environments. And, to be sure there are individuals who do migrate after dollars. However, according to the multiple studies cited in “Retention: Tag, You’re It!”<sup>30</sup> money is not the primary motivator for the vast majority of people.

The answer from the team member’s point of view relates to employability and professional mastery. People in pain, as people in conflict frequently are, do not typically care to perpetuate that pain. Given the choice, they’ll take an aspirin, submit to surgery, even make far reaching lifestyle changes – including, perhaps, building a new set of conflict resolution skills to help them be safe, happy, and more successful in their careers.

### Employability

Technical skills are the stock in trade of technical professionals. However, skills such as conflict management make those technical skills accessible to the organizations employing these team members, much as the transmission in your car requires hydraulic fluid in order to transmit the power from the engine to the wheels.

According to a recent survey, more than one-third of the skills identified by managers as important are non-technical skills such as good communication, problem-solving, and analytical skills, along with flexibility, and the ability to learn quickly. Training after the employee is hired is rated as significantly more effective than pre-hire methods of training; 84 percent of the managers rated on-the-job training as effective or very effective compared to 41 percent rating pre-hire training as high. Managers strongly prefer on-the-job training

when it has a structured format and a defined curriculum.<sup>31</sup> This will be true of conflict skills training as well as technical training inasmuch as organizations have identifiable personalities and typical conflict styles just as individual people do.<sup>32</sup> It is best to train team members in the environment in which the conflicts will occur.

About 35 percent of the companies taking part in another survey said they are actively looking for people with the right mix of technical abilities and business savvy. Included in this chief information officers' wish-list of skills requirements is an understanding of business modeling, project management, **leadership**, the **ability to work as part of a team**, and **communication abilities**.<sup>33</sup>

The most valuable technical professionals are those who get results, the people who work well in groups to quickly execute complex product designs. These people are either good conflict managers or they are team-eaters who burn out their people, cycling through a new team every project or so, bad risks in terms of cost to the organization (see Conflict is Related to Increased Costs on page 34).

### Health and Safety

Perhaps you've witnessed extreme examples of unhealthy responses to conflict on the job: heart attacks, fist fights, shouting matches, and chronic stress-related illnesses resulting from a depressed immune system. Modern medicine has established beyond contention that emotional stress directly relates to physical stress and disease. When people are in conflict and they see no way to resolve the conflict and maintain their sense of personal and professional safety, they are under tremendous stress. Over time, this stress can, and often does, culminate in physical illness, which impairs the productivity of the team member, in extreme cases, even ending his or her career.

Two physicians, Drs. Brinkman and Kirschner, have become so convinced of the link between job stress and poor physical health that they have developed a training program and written a book to help people develop skills to minimize job stress. They say, "Time and again, we found that when people clarify their values, update their concepts, learn effective communication and relaxation skills, set and then work to fulfill their goals, they feel better. And as their mental and emotional health improves, many of their specific physical symptoms disappear."<sup>34</sup>

### Professional Mastery

Skill in responding to conflict situations is one that crosses all occupations. However, in high pressure positions such as most technical professionals in software development hold, this skill is vital. It can easily mean the difference between personal and professional success or failure. People in positions of leadership are under even more intense pressure to quickly master and apply conflict skills.

One of the most common responses of project managers to team conflict is panic. ... Consequently, any evidence they interpret as damaging to the prospects of project success, such as team conflict, represents a very real source of anxiety. In reality, however, these interpersonal tensions are a natural result of putting individuals from diverse backgrounds together and requiring them to coordinate their activities. Conflict, as evidenced by the stages of group development, is more often a sign of healthy maturation in the group.<sup>35</sup>

Clearly, developing a strong set of conflict skills is of benefit to both the team member and the organization she works within. The team member stands to safeguard her health, increase her job satisfaction, and attain greater perceived value in her field. The organization is more likely to retain the team member, to have a much more productive team member, and to more efficiently execute projects – all of which translate in to tremendous cost savings.

### An ADR System Design Perspective

In this section, we will introduce you to the concept of integrating conflict management into a system within an organization. This concept is a fairly recent one, being introduced into organizations within the last seven to ten years. We will discuss three books written on this subject, and will highlight a local example of a conflict resolution system that is currently being utilized by federal and local agencies in Oregon and SW Washington. As stated earlier, managing conflict effectively can increase your bottom line, therefore it might be useful for software development organizations to examine and adapt some of these strategies to fit your particular environment.

Dispute system design (DSD) grew out of the ADR movement in the late 1980's. At about the same time, the first book on DSD was published: *Getting Disputes Resolved* (Ury, Brett and Goldberg, 1988). This book provided the first framework and core principles for designing conflict management systems in organizations. Two subsequent books followed. First, Costantino and Merchant in their book *Designing Conflict Management Systems* (1996) advance the field of system design by integrating organizational development principles into management of conflict in organizations. Next, Slaikeu and Hasson write the most recent book on system design: *Controlling the Costs of Conflict* (1998). This book further advances the field by providing readers with a cost effective blueprint on how to design systems that control and manage conflict in your organization. Costantino and Merchant describe why DSD is such a recent phenomenon.

Typically, organizational leaders do not view the management of conflict as systematically as they do information, human resource and financial management systems. Rather, conflict in organizations is viewed and managed in a piecemeal, ad hoc fashion, as isolated events, which are sometimes grouped by category if the risk exposure is great enough but that are rarely examined in the aggregate to reveal patterns and systemic issues. In a sense, most organizations regard disputes

as “local” events. Viewing the management of conflict systematically provides unparalleled opportunities for an organization to learn critical information about its operations, its population, and its environment – that is, to achieve a more global perspective.<sup>36</sup>

All three books are based on the premise that there is something wrong with the way most businesses manage conflict. The failure lies in a systemic reliance on higher authority, power play, conflict avoidance, and weak or only partial use of collaborative options. They also examine the relationship between interests, rights, and power. They advocate interest-based, collaborative negotiation, and detail the practical realities and costs when power or rights dominate a conflict management process.

Ury, Brett and Golberg<sup>37</sup> describe interests, rights and power as:

- **Reconciling interests** - negotiation and mediation; also called interest-based problem solving.
- **Determining who is right** –adjudication; courts, administrative agencies, arbitrators.
- **Determining who is more powerful** – coercive; imposing costs or threat thereof; acts of aggression (sabotage/attack) or withholding the benefit of a relationship (strike, divorce).

They then go on to say that a “distressed” system allows power to dominate rights and rights to dominate interests. An “effective” system is the reverse; most disputes are resolved by interests, some by rights, and the fewest by power.

Slaikau and Hasson state “most conflicts start small and present many opportunities for resolution before growing into full-blown disputes.” They continue: “Our experience suggests that many organizations focus more on full-blown disputes than on creating procedures geared to reveal conflicts early and resolve them in the most efficient and productive manner.”<sup>38</sup>

Do these symptoms “play out” in software development environments? We found two recent examples.

One author sites how conflict impacted their system at LookandFeel New Media, a dot com start-up in Kansas City.

Territorial issues sprang up between departments. These issues began to have an impact on the quality of our work. Deadlines slipped, the quality of our work dropped, clients called to voice their disappointment, and employees began to leave. ...we had always operated on the belief that if we hired good people and gave them a good environment that good work would result. Individually, everyone on the team was a solid professional. Collectively, however, we were dysfunctional. We wondered how we had fallen short of our ideals.<sup>39</sup>

Kleiner, in his article “Corporate Culture in Internet Time,” cites a recent trend in e-commerce businesses to turn to more traditional organizational development systems and techniques.

In the last few months in particular, there’s been a growing sense that something is wrong. Dot-com company executives are beginning to try the same kinds of “employee empowering” measures that their mainstream, Fortune 500 counterparts have tried: Talking about values, building shared vision, even hiring facilitators to run meetings. Six months ago most of these ideas would have been dismissed out of hand as hopelessly old-fashioned.<sup>40</sup>

We certainly could add DSD to Kleiner’s list of suggestions above.

Costantino and Merchant differentiate between *dispute* and *conflict* (which many people use interchangeably).

Conflict is a process; a dispute may be one of several products of conflict. Conflict is the process of expressing dissatisfaction, disagreement, or unmet expectations with any organizational interchange; a dispute is one of the products of conflict. Collections or clusters of disputes are simply one of the many ways that conflict manifests itself in an organization.<sup>41</sup>

They believe that an organization’s response to disputes and its overall strategy for managing conflict is directly related to the overall “culture” of the organization, or the informal and formal “rules” of the organization.

They also provide us with examples of how conflict shows up in many ways in an organization:

- In *individual disputes* such as grievances, disciplinary action, complaints and disagreements with internal or external people.
- As *unhealthy competition* within teams or between internal departments.
- *Sabotage efforts* (an extreme form of unhealthy competition), where individuals engage in covert actions to undermine or “get back” at an individual or an organization.
- *Poor or slow performance and low morale* can also be a symptom of conflict in an organization.

- Individuals or groups can withhold knowledge, particularly in an organization where knowledge is power.<sup>42</sup>

Constantino and Merchant then conclude that "...though conflict is a given (in organizations), weak systems are not. You can strengthen the system and thereby reduce costs associated with unresolved conflict."<sup>43</sup>

Some organizations have moved towards more systemic approaches to conflict management. Others continue to use fight (competition) or flight (avoidance) methods to deal with conflict or avoid it. In the middle are those organizations that have designed an alternative dispute resolution (ADR) approach or program to deal with particular types of disputes.<sup>44</sup>

The authors site the following interests behind the growing movement in ADR:

- Backlash against attorneys, lawsuits, and legal costs,
- Societal movement to more natural and humane methods of dispute resolution,
- Increasing interest in flexible dispute resolution, and
- Interest in confidentiality and avoidance of publicity.<sup>45</sup>

How might this growing interest in ADR and DSD transfer to software development environments? Costantino and Merchant give a pertinent hypothetical example of Montro, a leading manufacturer of word processing software whose consumers are both home users and commercial businesses.

Last year, Montro introduced "Hole in One," a new "umbrella" software package that includes word-processing, graphics, spreadsheets, and presentation applications. It is Montro's first entry into the spreadsheet and presentation software market. Recently, Montro has begun to receive complaints, particularly from home users, that the presentation package does not interface properly with the word processing package, with the result that certain categories of presentation data (particularly bar graphs and pie charts) are deleted in certain modes of operation. Yesterday, an irate home user who runs her own business called the Montro CEO, complaining about a large presentation file (and, she claims, a potential client) she lost because of this problem. The CEO, sounding annoyed, immediately called Ms. Jones, the director of the Consumer Service Department. He instructed her to meet with Mr. Tate, director of research and design, to deal with the customer, to explore the problem, and to come up with some solutions "once and for all." Ms. Jones is not looking forward to today's meeting since she and Mr. Tate have a strained working relationship based on several problems on which they have worked together in the past.<sup>46</sup>



The authors use this example to illustrate that conflict can take the form of either an internal or an external distress signal that comes from either inside or outside the organization. Organizations can choose to ignore the distress signal and hope it “goes away” or develop systems that assess the need to pay attention to the signal and appropriate solutions.

### **Organizational Differences**

Although all the system design sources we evaluated offer a template or blueprint for developing conflict management systems, they acknowledge that every organization is unique and needs its own “game plan.”

Kleiner also notes that each company has a unique culture and that “... anyone who has tried to create a culture, however, knows it can’t be done on Internet time. Cultures aren’t designed. They simmer; they fester; they brew continually, evolving their particular temperament as people learn what kind of behavior works or doesn’t work in the particular company.”<sup>47</sup>

In order to understand organizational differences, including how they respond to conflict, we have found the work of William Bridges to be very helpful. Organizations, like individuals, have inherent characteristics that must be understood and respected if real growth or change is to take place. Based on the work of Carl Jung and the Myers-Briggs Type Indicator (MBTI), Bridges explains why organizations act the way they do and how an understanding of organizational character benefits an organization as well as the individuals in an organization. Bridges looks at growth, change, response to conflict, and organizational development through the myriad perspectives held by different “types.” Costantino and Merchant shed additional light on how the MBTI can characterize an organization’s response to conflict.

The application of MBTI information about individuals in an organizational setting provides immensely valuable and otherwise unavailable insights into why individuals and groups either do or do not work together effectively. “One possibility is that where the organizational response to conflict differs markedly from a particular individual’s preferred response to the same conflict, dissonance results.”<sup>48</sup>

The opportunity to design a dispute resolution system most often arises in one of three situations: there is a crisis, an insider has “a better idea”, or new relationship or organization is being formed. In crisis, designers are usually called in to fix the situation (do a training, make recommendations, or resolve a particular dispute), not to redesign the system. The opportunity to redesign the system comes only after the designer has gained credibility and familiarity with the parties. Insiders can be the sparks for system overhauls. They may even be the designer and lead person implementing the change. For example, grievance mediation has been effectively introduced by both companies and unions, not because of a crisis, but simply because it’s a better way to handle disputes. Both the real time company, LookandFeel New Media, and Costantino and Merchant’s hypothetical company, Montro,

were in crisis and could have used their crises to springboard the development of a conflict management system.

Costantino and Merchant link, for the first time, conflict management principles with the principles of organizational development. In other words, conflict resolution tools (mediation, arbitration, facilitation, etc.) have been used to resolve isolated disputes for over twenty years in workplace environments, it is only in the last five to seven years that some organizations are looking at managing organizational conflict as a system issue – not just housing it with HR or a legal department.

When you look at managing conflict through the lens of organizational development, conflict management is viewed systematically, it is planned and intentional, it is tailored to “fit” the organizational culture, and it is as durable as possible over time. Unfortunately, this takes time –in two ways. First, in all three books reviewed for conflict management system design, they suggest a process that could take up to two years to design. Second, an organizational development “rule of thumb” regarding changing an organizational system is three to seven years. This means that once the system is designed, successful implementation takes another chunk of time for the individuals in the system to successfully use it.

A classic organizational development text states, “The key elements (in organizational development)...are long range, planned and sustained, and strategy. There is a long-range time perspective on the part of both the client system and the consultant in OD programs. Both parties envision an ongoing relationship of one, two, or more years together if things go well in the program. The reasons for OD practitioners and theorists conceptualizing OD programs in long-range are several. First, changing a system’s culture and processes is a difficult, complicated, and long-term matter if lasting change is to be effected. OD programs envision that the system members become better able to manage their culture and processes in problem-solving and self-renewing ways. Such complex new learning takes time. Second, the assumption is made that organizational problems are multifaceted and complex. One-shot interventions probably cannot solve such problems, and they most assuredly cannot teach the client system to solve them in a short time period.”<sup>49</sup>

### **System Design Methodology**

All three of our primary sources on conflict resolution system design outline blueprints that would involve intensive staff involvement in developing a system over a year or more period of time. The organization should be an active participant in all phases of the system design process, involving team members from the outset in both the diagnosis and the design. Establish a design committee: they serve as liaison and representative for the organization, creating more ownership, easier acceptance and higher commitment to joint problem solving. In a good design process, end-use acceptance is built in by involving people in the design process.

Slaikau and Hasson outline four basic principles for designing conflict management systems in organizations:

- Acknowledge that there are different options for dealing with conflict, and choose the option you want to reward more than others.
- Create options that prevent conflict from escalating.
- Develop clear, internal systems that support collaboration – policies, roles and responsibilities, documentation, selection, training, support and evaluation.
- Use mediation techniques (consensus and collaboration) to build the internal conflict resolution system.<sup>50</sup>

Ury, Brett and Goldberg offer the following suggestions for designing systems:

- Gain the support of key stakeholders. This may involve canvassing potential users of the system to understand their motivations.
- Expect to make adjustments as the system is implemented. Adjust to keep parties motivated in using new procedures, and help them develop the skills to do so.
- Make the new procedures attractive to disputants. Demonstrate procedures, use leaders as examples, use peers as proponents, set goals, provide incentives, and publicize early successes.
- Training the parties together is valuable. It gives the parties a common vocabulary, instills common expectations, and offers a safe environment to try out new procedures. Provide continuity by establishing an ongoing program for familiarizing and training new people.
- The designer is a temporary support in the construction of a new system. Balance benefits of managing implementations vs. risks of over-reliance on the designer. At some point, the system has to stand on its own.
- Evaluate the system. Are the costs reduced? Are benefits realized? Are there any unintended consequences? Fine tune changes. Learn from initial experiments. Does the new system work? What are the limits of the effectiveness of the changes? Why do the changes work?

### Essentials of System Design

When designing a conflict management system, the designer embarks on a system diagnosis. A system designer looks at:

- What kinds of disputes are likely to arise, how often, and between whom?
- How are disputes being handled currently, and where might lower cost procedures be used? (Establishing current costs also sets a base line against which to measure costs of new system.)
- Why are current procedures being used? New system must match or beat motivations and benefits met by current system.
- Identify who needs to be trained, coached and/or replaced.
- What resources are available to assist disputants (people, information, institutions)? Are more resources needed?
- What type of organization are you looking at? An organization can avoid its weaknesses, compensate for its weaknesses, develop new strengths, and/or capitalize on its existing strengths.

Throughout the design process, the system designer plays many roles:

- Coach
- Evaluator
- Expert
- Mediator
- Negotiator
- Evangelist<sup>51</sup>

### **System Design Options**

Slaikeu and Hasson advocate for the use of system options that range from site-based resolutions between employees with a higher authority back-up, to internal support people (HR, Peer Review Panels, internal mediators), to external ADR resources, to external higher authorities (Courts, unions, administrative hearings). Good systems should start with encouraging the least intrusive option and the option that keeps the most control of the outcome in the parties' hands, and feature "loopbacks" to lower interventions at any time.

Another author stresses that organizations need to pay attention "to characteristics of the conflicts (content, relational and situational dimensions), desired outcome of the participants, and awareness of available conflict management strategies when choosing conflict management strategies."<sup>52</sup> This author also identifies three internal options for resolving conflict: face-to-face discussions with no third party intervening, an intervening

manager or intervening other in the organization (HR, internal mediator), as well as turning towards external third parties for intervention.

Ury, Brett and Goldberg list the six basic principles dispute system design...

- Put the focus on interests. Use negotiation and mediation.
- Provide rights and power procedures that loop back to negotiation.
- Provide low-cost rights and power backups (low cost means for resolution if interest-based procedures fail).
- Build in consultation before disputes arise, and feedback after they are resolved.
- Arrange procedures in low to high cost sequence.
- Provide motivation, skills and resources needed to make all these procedures work.

There are many types of ADR techniques that could be part of an organizational conflict management system. As shown in the table below, they range from preventative (partnering, conflict resolution training) to negotiation (parties involved in conflict directly negotiating a settlement) to facilitation (mediation, ombudsperson) to fact-finding (settlement conferences evaluation, non-binding arbitration) to imposed ADR (binding arbitration). We have defined these ADR techniques in more detail for you in a chart below. As one can see, the techniques are listed in order from the least invasive (parties have more control of the process and the outcome) to the most invasive (parties have less control of the process and the outcome).

## Conflict Management in Software Development Environments

### *Alternative Dispute Resolution Ladder*<sup>53</sup>

Communication	Verbal and non-verbal behaviors, or events that are perceived by one or all parties to have meaning assigned to it. The parties may be experiencing conflict or no conflict.
Partnering	A preventative approach to deal with potential conflict that features a negotiated “partnering agreement” that states how people will resolve future problems. It often includes joint training in conflict resolution and communication.
Negotiation	A process whereby, disputants communicate with each other, either directly or indirectly, about issues in disagreement.
Facilitation	The use of a third party (insider/partial or outsider/impartial) to help multi-party groups accomplish their work by providing process leadership and expertise. The group may be experiencing conflict or no conflict.
Mediation	The use of a third party (insider/partial or outsider/impartial) to facilitate communication between negotiating parties which may enable the parties to reach settlement.
Settlement Conference	A neutral and impartial third party conducts an informal assessment and negotiation session, with the goal of settling the dispute. The third part may advise the parties and suggest a settlement of the dispute.
Med-Arb	A neutral and impartial third party facilitates communication between negotiating parties, and failing settlement, receives evidence and issues a binding decision.
Arbitration	One or more impartial third parties hear and consider the evidence and testimony of the disputants and issue a binding or non-binding decision.
Litigation	An impartial judge or jury consider the evidence and testimony presented by the disputants and issues a binding, enforceable court order.

We would now like to highlight two of the ADR techniques that have been working in other workplace environments:

### Partnering

The construction industry has been using a technique known as “partnering” for over ten years to prevent problems from escalating before, during, and after construction projects. “Partnering is a structured management approach to facilitate teamworking across contractual boundaries. Its fundamental components are formalized mutual objectives, agreed problem resolution methods, and an active search for continuous measurable improvements. It should not be confused with other good project management practice, or with long-standing relationships, negotiated contracts, or preferred supplier arrangements, all of which lack the structure and objective measures that must support a partnering relationship. The critical success factor for partnering is the commitment of all partners at all levels to make the project a success. The result is that the partnering agreement drives the relationship between parties rather than the contract document.”<sup>54</sup>

### Developing Internal Mediators

Shared Neutrals is a remarkable local example of how an ADR program can work. Shared Neutrals is a cooperative arrangement between several federal and local agencies in Oregon and Southwest Washington. Member agencies share “neutrals” – employees who have been trained and mentored in communication, conflict facilitation, and mediation. Neutrals mediate employee and agency/public conflicts outside of their own department or agency. These neutral individuals are called in to handle interpersonal conflicts (disagreements, harassment, communication problems), discrimination allegations, sexual harassment issues, contract disputes, policy disputes, and agency/client disputes. They have no personal stake in the outcome and remain impartial in resolving the conflict. Their purpose is to help the disputing parties arrive at an outcome acceptable to all parties involved.

In the Shared Neutrals program, participating agencies each “contribute” a staff member or members. By interagency agreement, these staff members are also available for service in another agency or department as a Shared Neutrals mediator. (Time limitations apply – cases are not to exceed 35 hours; a normal case take 4 – 6 hours to resolve.) Staff members undergo thorough training and mentorship to prepare them for their role as mediators.

Costs for implementing an ADR program such as Shared Neutrals are minimal, especially when compared to the savings such programs deliver. “We’ve saved a ton of money,” says Julie Wells, US Forest Service Regional Manager for Employee Relations in Oregon and Washington. Ms. Wells signed her agency onto the Shared Neutral program. She enthusiastically reports, “I have no regrets. The average discrimination complaint costs us \$5,000 just to investigate. We’ve been resolving many of those cases much more cheaply and successfully using mediation.”<sup>55</sup>

“In-house” mediation networks, such as the Shared Neutrals program, are a recent development. Assessment on these programs is favorable, so much so that the Federal Equal Employment Opportunity Commission has mandated implementation of ADR programs in all federal agencies by the year 2000.<sup>56</sup>

### Developing Your Own System

How might a software development company develop an ADR program? Let’s re-visit our friends at LookandFeel New Media, our real time e-commerce company.

First, this company found itself in a crisis state – “Many of the problems we faced seemed to be steeped in emotion and had defied our attempts at rational analysis and solution.”<sup>57</sup> Next, they hired a former psychologist, turned communication consultant (a quasi system designer and mediator/facilitator) who interviewed employees privately to assess the communication and problem-solving issues the company faced (a system diagnosis). They then had a retreat and had a discussion where a sense of confusion prevailed, but were able to identify they needed to do something in the organization to better deal with conflict - “And almost universally, people felt that when problems were identified, they took too long to be solved.”<sup>58</sup>

At the one day retreat mentioned in Logan’s article, **employees, managers and partners** (it is important to have all involved) developed some basic guidelines (a minimal, but effective conflict management system) for resolving problems more effectively:

- Understand that problems arise every day: Nothing is more natural. The way we respond to problems is what differentiates us.
- If you see a problem, address it. Nobody has permission to stay silent. Everybody is obligated to address issues as soon as possible.
- If you have a problem with someone else, address it with that person directly, privately and as constructively as you can.
- If that doesn’t work, bring in a third party, a manager, or the partners to arbitrate.
- And most importantly, except in the framework of this process, talking about problems with anyone other than the person involved is strictly forbidden.<sup>59</sup>

They then established a “leadership council,” comprised of all levels of employees and representative of all departments to monitor the above system evaluation.

The author then goes on to state his positive assessment of the process:

Because building this kind of culture (the above problem-solving process) requires an ongoing commitment, Cone (the consultant) continues to serve as a company counselor (facilitator/mediator), helping us identify problems and brainstorm solutions. Having an objective counselor has been one of the biggest benefits of the



entire process. When this began, we were all really excited about creating a culture of open communication, but none of us had really seen it in any workplace. Being able to talk honestly to an objective, outside source made it easier to do the same thing with my peers. The result of this investment (in an objective, outside consultant) in effort and time has been a remarkable turnaround in almost all facets of our work. The quality of our culture is reflected in not only our employees' morale, but in our client satisfaction as well. And these improvements have had a definite impact on our bottom line – revenues have more than doubled from last year.<sup>60</sup>

### The Costs of Conflict

This section discusses the how conflict impacts your bottom line. We have come to take high turnover rate for granted in technology development. We may suspect other organizations of “pilfering” our human resources. Often we see companies throw money at the problem of retention: stock options, signing bonuses, performance bonuses, and salary increases. However, the literature indicates that tangible rewards do far less to retain employees – including the star performer – than overall job satisfaction. Skillful conflict management drastically increases job satisfaction.

### The Big Picture

There are costs associated with conflict. People pay, teams and projects pay, and companies pay.

Costs can be computed quantitatively and qualitatively. In the examination of conflict resolution skills and conflict management in the software development arena, qualitative criteria – how people feel about and experience workplace conflict – translate into quantitative factors, i.e. dollars. Specifically, job satisfaction rates, project success, and team member retention rates all impact the bottom line.

Organizations pay the price for poorly managed conflict: when projects and products “fail”, and when good people walk. Both scenarios are commonplace, and expensive. If you consider that turnover costs are generally estimated at 150 – 200% of salary<sup>61</sup>, you can see the problem when workers are lured away. Turnover rates continue to be high, in the 15 – 20% range (see below for details). Combine these turnover costs with the big hits companies take when projects and products don't meet expectations or requirements, and the costs really add up.

Individuals also fare much better when conflict is skillfully addressed. People (managers, staff, and individual contributors alike) bear the costs of conflict in a much more personal manner – they pay with loss of quality of life, and, too often, their health. The relation between stress and health is well documented: as stress increases, quality of life decreases, and potential impacts on health increase. When you add it up, it pays to deal with conflict

constructively, creatively, and proactively. Ideally, you want to move beyond managing flare-ups; you want to set up conflict resolution systems in advance. Setting up systems to resolve conflict creates a safety net. You can catch and constructively deal with conflict. You can minimize costs, and even derive some benefit from conflict if you set up effective systems for dealing with it. (See Conflict and Creativity on page 5 and An ADR System Design Perspective on page 21.)

### **Conflict is Related to Increased Costs**

The benefits of collaborative conflict resolution stand in stark contrast to the costs of poorly managed conflict. Consider the following:

The economic impact of the software industry is significant; employment numbers as a percentage of the workforce keep growing:

- Software development is a component of “high technology” – which accounted for 14% of all employment in the U.S. as of June, 1999.<sup>62</sup>
- In 1999, “high technology manufacturing” accounted for 44,800 jobs in the Portland-Vancouver area (including Clackamas, Columbia, Multnomah, Washington, and Yamhill counties in Oregon and Clark County, Washington), up 48% from 1990.<sup>63</sup>
- In Oregon, there were 1,675 companies associated with the software industry employing 16,987 people in 1998. The average wage was \$51,875.<sup>64</sup>
- Software development is a piece of the larger IT pie. (IT occupations include database administrators, computer support specialists, and all other computer scientists; computer engineers; and system analysts.<sup>65</sup>) The IT worker shortage, well documented and lamented, is expected to escalate in the U.S. and worldwide. Projections vary, but all reports predict increasing shortages of IT workers, for the next few years at least.<sup>66</sup> This is bad news for companies. It’s also bad news for the managers and workers who get caught in the crunch and have to take up the slack.

Salaries and bonuses keep increasing:

- Compensation programs within IT companies increased from about 30 percent of the entire IT budget in 1998 to 40 percent or more in 1999. In addition, 15 percent "skills bonuses" are not uncommon as companies struggle to retain employees.<sup>67</sup>
- In April, 1999, Information Week reported, "The median annual [IT] salary increase across the board was a hefty 8.9% compared to all industry average of 5.9% reported by the Labor Department. Internet managers report the second-highest median annual percentage increase--12.9% over last year--among all managers surveyed. They also enjoy a healthy median annual salary of \$70,000. This study was based on 21,398 responses."<sup>68</sup>
- IT professionals with the hottest skills are often receiving base pay increases in the 10-20% range per year, compared to national average annual increases of 4-5% for non-IT salaried exempt U.S. employees.<sup>69</sup>
- IT salaries are a factor in staffing problems, with an average 20 percent annual increase. That contrasts with 4 percent annual increases for non-IT salaries (as of a February, 1999 report).<sup>70</sup>

Attrition costs more than retention.

Retention is a big problem for U.S. corporations in all sectors, software development included. People walk, frequently. A sampling of turnover statistics:

- A survey of 1,400 Chief Information Officers, released in December, 1998, reported turnover in IT departments averaging 19%, with one-fifth of respondents citing attrition rates more than 25%.<sup>71</sup>
- A February, 1999 survey reported IT turnover averaging 11 – 20%, and hitting as high as 50% in some corporations.<sup>72</sup>
- Turnover among technical workers is high: 15% as of 6/99, according to a Meta Group study.<sup>73</sup>
- Turnover of IT employees averages just below 16%, but some companies in the study reported turnover rates as high as 35%. The average time reported for filling an IT position was three months. Twenty-eight percent of companies reported at least 10% of their high tech positions were vacant, and while the vacancies are down from 1998 reports, 75% reported using contract IT employees in some capacity.<sup>74</sup>

While it is not the only factor related to low job satisfaction, we do know that poorly managed conflict is, indeed, strongly associated with low job satisfaction levels. Common sense indicates that low job satisfaction levels are associated with retention problems, and the literature supports this:

“Money and perks matter, but employees tell us again and again that what they want most are challenging, meaningful work, good bosses, and opportunities for learning and development.”

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People who are not satisfied with their jobs are easy targets for recruitment, and turnover is expensive. Estimates vary. One source put turnover costs at 70 – 200 percent of that employee’s annual salary.<sup>75</sup> Another source cited turnover costs as much as one and one-half to two times salary.<sup>76</sup> Consider the impact of a 150 - 200% turnover cost, multiplied by some average salaries in Oregon:

<u>Position</u>	<u>Avg Oregon salary '98<sup>77</sup></u>	<u>Multiplier</u>	<u>Cost of Turnover</u>
Computer programmer	\$51,600	150 – 200%	\$77,400 – \$103,200
Computer systems analyst	\$54,000	150 – 200%	\$81,000 – \$108,000
Computer engineer	\$65,000	150 – 200%	\$97,500 – \$130,000
Technical writer	\$48,000	150 – 200%	\$72,000 – \$96,000
Computer support specialist	\$35,490	150 - 200%	\$53,235 – \$70,980
Database Administrator	\$49,810	150 - 200%	\$74,715 – \$99,620

In an IT labor market report released September, 1999 the International Data Corp stated, “IT firms that lower their attrition rates can cut their recruiting needs by as much as half. The cost of attrition to a company is often “far greater” than recruiting costs.”<sup>78</sup>

“The Costs of Loss” include: newspaper ads; search firm; interview expenses (air fare, hotel, meals, etc.); manager’s and team members’ time spent interviewing; work put on hold until replacement is on board; overload on team, including overtime to get work done during selection and training of replacement; orientation and training time for replacement; lost customers; lost contracts or business; lowered morale and productivity, time spent talking about it around the water cooler [or online]; sign-on bonus and other perks; moving allowance; and loss of other employees.<sup>79</sup>

These figures would seem to lead anyone concerned with bottom-line to ask a few questions:

- Considering the current job market, who is responsible for attrition and turnover expenses?
- When you know that people are routinely solicited by competitors, who is responsible for keeping good people on board? And how is that demonstrated?
- Is keeping people on-board a priority?
- If retention is valued, who is responsible for creating a “retention culture”<sup>80</sup>?

One company instituted an eye-catching bottom-line approach; they assigned accountability squarely with the manager who let the valued team member get away. “We know of a CEO

who charged \$30,000 to a manager's operating budget because he needlessly allowed a talented person to leave.”<sup>81</sup>

Conflict impacts more than job satisfaction and retention. Conflict impacts product and project performance. Sometimes the problems boil down to two people who can't communicate. Sometimes whole teams or departments don't work well together. Many companies deal with the duality of “hype and craft”.<sup>82</sup>

Lack of communication, poor teamwork, faulty team coordination, rivalries, turf battles and the like – all are symptoms of poorly managed conflict. All impact product or project success. All cost money.

### Computing Costs

There are several ways you can compute the costs of conflict.

You can measure the cost in dollars. Add staff turnover expenses to the costs of project or product failures. You may also want to add in the opportunity costs of what could have been, had things been handled a bit differently.

Another method, advocated by conflict resolution system designers, takes a broader approach. Ury et al suggest determining the “costs of disputing” based on four factors:<sup>2</sup>

- Transaction costs (time, money, emotional energy expended in disputing, resources consumed and destroyed, opportunities lost)
- Satisfaction with outcomes (Is the outcome mutually satisfactory? Does it fulfill the interests that led to dispute? Is the outcome fair? Were the procedures fair?)

Note: fairness has several components, including:

1. disputants had an opportunity to express themselves
  2. disputants had control over accepting or rejecting the outcome
  3. disputants participating in shaping the settlement
  4. the third party, if there is one, acted fairly
- Effect on relationship (What is the long-term effect of disputing? What approach will best support relationship maintenance/improvement?)
  - Recurrence of disputes (How durable is the solution? Does the conflict end or merely transfer to other members in the system?)

In *Designing Conflict Management Systems*, Costantino and Merchant note that most organizational representatives consider the costs of conflict “...not only in terms of dollars and time spent in resolution efforts and litigation, but also in terms of the negative impact on important, ongoing relationships – both within and outside the organization - with employees and customers.”<sup>83</sup> In this statement, they point to yet another factor to consider in

calculating the cost of conflict: What is the impact on your customers? How will this impact your business relationships, present and future?

When viewed from a conflict resolution system designer's perspective, there is an obvious relationship between effective conflict management and increased retention rates, increased project success rates, and a better bottom-line. The system designer's goal is to create solutions that consider all of the costs of conflict, and to educate and train people so they can manage conflict with the lowest total cost.

### Conclusions

This review of the literature has taken us into exciting territory. When we started it, we suspected certain things may be true, and our research has validated suspicion about the nature of conflict in software development environments. This review is necessarily abbreviated. But it will be ongoing; the annotated bibliography will continue to grow. Certain topics we were not able to take the time to broach. For instance, we suspect that conflict has a regional face, that the reasons and ways in which software developers enter into conflict is different in Portland, Oregon than it is in Portland, Maine, or Austin, Texas, or Atlanta, Georgia. This will likely be one of our next areas of inquiry around the topic of conflict resolution in software development.

What is indisputable regardless of the locale is that conflict is inevitable, in software development environments, as well as in any business or organization. It is a human process, common at some level to all human beings. Successful response and resolution to conflict is highly correlated to employee satisfaction, retention, and productivity. Both the literature review and the results of our local survey point us in this direction. It is clear that the costs of not resolving conflict are high for any organization – costs in employee retention, performance and project failure. And finally, we know that it is a good, and cost effective idea for organizations to spend time and money developing a basic conflict management system, and that this may mean reliance on external resources depending on the conflict and the environment it occurs in.

What then are our conclusions for improving conflict resolution and problem-solving in software development? We have the following four recommendations:

- **Implement skills training for all team members who have to work together.** Skills training in communication and conflict resolution are well worth the cost. The benefits are improved job performance and employee satisfaction, increased retention rates, health and safety, and professional mastery.
- **Hire external mediators or develop internal mediators to resolve conflict in a timely manner.** Mediation helps resolve conflicts efficiently and swiftly, preserves and enhances working relationships, gives people the opportunity to practice conflict resolution skills and improves follow through with the implementation of an agreement.

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- **Use partnering techniques at project start-up.** Although partnering would take some time at project start-up, it may well save time during the life cycle of the project.
- **Implement conflict management systems where feasible,** specifically in mid-sized to large software companies which are planning for the long-term. It could be a minimal system like our LookandFeel New Media example developed, or it could be a more elaborate system as described by Slaikeu and Hasson, Ury, Brett and Goldberg or Costantino and Merchant. We suspect that your organizations are used to moving at a fast pace, and therefore believe you could speed the development time when you design a conflict management system.

As Kleiner concludes regarding the clash of cultures between the craft and hype people in dot-com environments,

Instead of self-consciously trying to build a corporate culture, or aping the worst bureaucratic tendencies of the dinosaur companies they are replacing, there are things that Internet and e-commerce startups... can consider to sustain themselves past, say, this summer. These ideas are tough to implement at breakneck speeds, unless you are willing to think through your work design right at the beginning. And they're counterintuitive, to some extent, to both the culture of hype and the culture of craft, because they start with an explicit appreciation of the differences between the two cultures – differences that are generally unobserved.<sup>84</sup>

Conflict is not to be feared; rather, it can be welcomed, advisedly and with skill, as an opportunity for growth, increased creativity, and a spur to productivity. As Constantino and Merchant have so concisely stated:

Conflict is like water: too much causes damage to people and property; too little creates a dry, barren landscape devoid of life and color. We need water to survive; we need an appropriate level of conflict to thrive and grow as well. How we manage our natural resources of water through dams, reservoirs, and sluices determines whether we achieve the balance necessary for life. So, too, with conflict management: a balance must be struck between opposing forces and competing interests.<sup>85</sup>

## Appendix A: Results of Survey

In attempt to gather data about conflict in technology development environments, we, in cooperation with the Project Management program at Portland State University's Professional Development Center (PDC) surveyed 261 students who have attended the Project Management series at PDC. Of the 261 students who received the survey, 180 were estimated to be working in technology development. We received 56 responses (31.1 %) from qualifying recipients.

Our major goal was to determine how frequently respondents attributed unresolved conflict and lack of communication to unsuccessful high technology development projects.

The 56 qualified respondents accomplished their work in the following structures:

- 65.45% accomplished their work within cross-functional teams .
- 5.45% within uni-functional teams .
- 27.27% through a group of individuals coordinated by a manager.
- 1,82% through other work systems.

### Questions Asked

We asked respondents to estimate the percentage of technology development projects that have a less than successful final outcome. The average rate of projects falling short of expectations among respondents was 33.1 %.

We then asked respondents to attribute reasons for unsuccessful projects by ranking reasons for overall project failure. To gather more data about why they ranked the causes as they did, we asked them to rate the most frequently occurring factors that:

- Impact project success.
- Most adversely impact team member satisfaction.
- Most adversely impact team member performance.

Choices offered included:

- Conflict that is not addressed effectively and/or resolved (Conflict)
- Incompetent team members (Incompetence)
- Impossible deadlines - not enough time (Time)
- Instability/changes in company structure and/or focus (Instability)
- Insufficient resources - not enough money, people, and/or tools (Resources)
- Lack of communication - among team members and/or between teams (Communication)



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- Lack of planning before implementation (Planning)
- Unclear goals (Goals)

51 out of 56 respondents, or 98%, responded to these rating questions. The tables below illustrate our findings.

*Table 1. Ranking Reasons for Overall Project Failure*

The scale for this ranking set 1 as the most important/impactful reason projects are less than successful, and 8 as the least important/impactful reason projects are less than successful.

<b>Reason</b>	<b>Average Ranking Score</b>	<b>Response Rate (n=56)</b>
Planning	3.5	82%
Goals	3.9	88%
Resources	4.0	86%
Communication	4.1	88%
Time	4.2	84%
Instability	4.7	84%
Conflict	5.2	79%
Incompetence	6.3	82%

Note that, explicitly, conflict is ranked quite low. This is consistent with our expectation that conflict is not recognized as a cause for project failure, but rather “part of the job to be endured” that it “comes with the territory”.

Note also that Communication is ranked midway in this distribution. Now note that Planning and Goals are ranked highest. Planning is a communication process and commonality of goals across a project requires good communication skills. We suspect that poor planning and lack of common goals operate in the project to generate conflict. Unresolved conflict can masquerade as a communication problem, which ultimately it is. However, simply communicating without effectively applying conflict management skills will not resolve conflict, facilitate truly effective communication, or improve the planning or goals development processes.

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*Table 2. Most Frequently Occurring Reasons That Projects Are Less Than Successful*

<b>Reason</b>	<b>Rating</b>	<b>Percentage (n=56)</b>
Resources	1	18.07%
Planning	2	16.87%
Communication	3	15.06%
Time	4	13.86%
Goals	5	12.65%
Instability	6	11.45%
Conflict	7	8.43%
Incompetence	8	3.61%

The placement of Planning, Communication, and Conflict remains fairly consistent for this question. Since this question is about frequency rather than intensity, this indicates to us that, overall, these three contributors remain constant across the projects these respondents have experienced.

*Table 3. Most Frequently Occurring Reasons that Most Adversely Impact Team Member Satisfaction*

<b>Reason</b>	<b>Rating</b>	<b>Percentage</b>
Communication	1	20.13%
Conflict	2	15.72%
Goals	3	15.09%
Time	4	13.21%
Resources	5	12.58%
Instability	6	10.06%
Planning	7	7.55%
Incompetence	8	5.66%

This response is interesting in light of the discussion of how team member satisfaction impacts retention (see Conflict Skills and Professional Mastery on page 18). Communication and Conflict rank highest on this rating. While the respondents focused on Planning and Goals as contributors to overall project failure, they focused on Communication and Conflict when asked the question most directly related to retention.

*Table 4. Most Frequently Occurring Reasons that Most Adversely Impact Team Member Performance*

<b>Reason</b>	<b>Rating</b>	<b>Percentage</b>
Communication	1	20.73%
Goals	2	15.85%
Planning	3	12.20%
Conflict	4	10.98%
Incompetence	5	10.98%
Instability	6	10.37%
Resources	7	9.76%
Time	8	9.15%

It is again interesting to see the disconnect between Communication and Conflict occur again in this rating. This again supports our expectation that conflict skills training is “not on the radar” in this industry as a possible solution to communication problems, though human communication experts have long acknowledged conflict skills as trainable and a key component in effective communication.

### **Summary and Conclusions**

Though poor communication is more frequently identified as being related to unsuccessful projects, poor communication is one of the reasons conflict occurs.

Although conflict is ranked and rated low in the first two tables (overall reasons for less than successful project outcome), it is much more highly correlated as a reason for team member’s dissatisfaction (a #2 rating) and adversely affecting team member performance (a # 4 rating). This indicates that improving communication and conflict resolution methods in technology development environments would increase team member satisfaction and performance, as well as retention, according to research cited elsewhere in this paper.

## Conflict Management in Software Development Environments

It appears that if technology development companies are concerned with building and retaining high-performing project teams, successfully resolving conflict should be high on their priority list. Further, these results indicate that further ethnographic research or contextual inquiry should be applied to the topics covered by this survey to gather more specific data about the disconnect in the minds of the respondents between communication and conflict and between poorly managed conflict and project success.

## Acknowledgement

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Bridges distinguishes between change and transition (transition being the human process and response to change), and draws our attention to “the neutral zone” as a critical mid-point of transition: simultaneously very challenging, and ripe with creative opportunity. In an organization, the neutral zone can be described by rising anxiety, falling motivation, and the re-emergence of old weaknesses and disputes. Transitions can be thoughtfully and successfully managed; the author offers numerous suggestions, as well as commentary on managing in a world of non-stop change.

Bridges, William. The Character of Organizations: Using Jungian Type in Organizational Development. Palo Alto (CA): Davies-Black Publishing, 1992.

Organizations, like individuals, have inherent characteristics that must be understood and respected if real growth is to take place. Based on the work of Carl Jung and the Myers-Briggs Type Indicator, Bridges explains why organizations act the way they do, and how an understanding of organizational character benefits an organization as well as the individuals in an organization. Bridges looks at growth, change, conflict and organizational development

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through the myriad perspectives held by different “types”. Filled with theory, examples, and practical suggestions. Useful reading for navigating in a diverse world. Includes the Organizational Character Index for self-assessment.

Brinkman, Rick and Kirschner, Rick. Dealing With People You Can't Stand.

Two naturopathic physicians discuss practical strategies for responding to conflict based on differences in interpersonal style. The authors come from the perspective that unmanaged conflict is dangerous to the physical health of the disputants, based on their experience as physicians.

Buie, Elizabeth A. "Personality and System Development: What's the Connection?" System Development January 1988.

<[http://www.aesthetic-images.com/ebuie/article\\_type\\_and\\_sd.html](http://www.aesthetic-images.com/ebuie/article_type_and_sd.html)>

System developers (referred to as "SDers") represent a disproportionate share of certain personality types. Discusses the Myers-Briggs Type Inventory (MBTI) as it relates to personalities typical in the software development environment. Also discusses the benefits of applying MBTI understandings in your environment. "The Myers-Briggs approach to personality is non-judgmental: no preference or type is inherently better than any other. Each type contributes to teamwork. Different types do tend to choose different occupations and work environments, but this doesn't guarantee that an individual will be suitable (or nsuitable) for work that is generally chosen (or avoided) by his or her type. . . . "What's more, over half of all SDers are ISTJs, INTJs, or INTPs (highlighted areas), while only about 8.2% of Americans belong to one of those three groups."

Burk, Lisa. Volunteer Manual Basic Mediation Training 2000.

A joint work between the City of Portland Neighborhood Mediation Center and CommunicationWorks.

Christian & Timbers. "What Opens the Barn Door, or Why Employees Leave." Training & Development April 2000: 21.

Top ten reasons employees leave.

Coleman, Peter T. and Deutsch, Morton. "Some Guidelines for Developing a Creative Approach to Conflict." The Handbook of Conflict Resolution. San Francisco: Jossey-Bass Publishers, 2000.

The authors analyze how conflict facilitates creativity and specifies seven guidelines for dealing with creativity and conflict. They also address the issue of fostering “optimal” tension and suggest some ways of generating novel ideas.

“Construction Industry Board - Partnering in the team: Introduction and executive summary.”

Thomas Telford Publishing. 7 November 1999

<<[http://www.t-telford.co.uk/pu/cib\\_part1b.html](http://www.t-telford.co.uk/pu/cib_part1b.html)>>

Background, introduction to, and purpose of industry report for construction professionals, clients and advisors. Report includes five Partnering case studies.

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Costantino, Cathy A and Merchant, Christina Sickles. Designing Conflict Management Systems. San Francisco: Jossey-Bass, 1996.

This book gives a comprehensive blueprint for designing conflict management systems for organizations. They provide a brief history of both ADR and Dispute System Design (DSD), as well as a step by step process for DSD.

Dobrzynski, Judith H. "Online Pioneers: The Buzz Never Stops." New York Times 21 Nov. 1999, late ed. (east coast), sec. 3: 1.

Interview with four dot.com chief executives. A wide ranging conversation touching on the need for speed and sleep, employee retention, managing growth, travel, building a company, values and the unique characteristics of managing dot.coms.

Edleman, Joel and Crain, Mary Beth. The Tao of Negotiation. HarperBusiness, 1993.

The nature of conflict is discussed with a focus on resolving conflict through negotiation. A strategy for preparing to negotiate or resolve conflicts in the face of anticipated resistance is discussed in depth. The uniqueness of conflict in the workplace is discussed.

Eisenhardt, Kathleen M. "Speed and Strategic Choice: How Managers Accelerate Decision Making." California Management Review 32, no. 3 (1990). Reprinted in Ralph Katz, ed., The Human Side of Managing Technological Innovations. Oxford: Oxford University Press, 1997. 424-343.

How do you make fast, high-quality strategic decisions? A study of twelve microcomputer firms reveals that fast decision making is essential when technical and competitive changes are rapid. Successful leaders constantly gather and use real time information, meet with key people frequently, have seasoned counsel, and make decisions by "consensus with qualification". Being fast involves accelerated information processing, building confidence, and maintaining the cohesiveness of the group.

Equal Employment Opportunity Commission - Federal Management Directive 110, Chapter 3. November 1999.

Overview of statutes enforced by EEOC and executive orders encouraging the use of ADR in resolving employment disputes in all federal agencies. This directive outlines ADR program design, information to be provided to disputants, ADR core principles, training qualifications for "neutrals," format of resolutions and ADR definitions.

Executive Summary - Bridging the Gap: Information Technology Skills for a New Millennium. 11 May 2000. Information Technology Association of America. [www.ita.org/workforce/studies/hw00execsumm.htm](http://www.ita.org/workforce/studies/hw00execsumm.htm)

Summary of "one of the largest and most comprehensive studies of the IT workforce ever conducted." Includes current figures on growth, demand & worker shortages; details on where the jobs are; and how to acquire skills.

Fisher, Roger and Ury, William. Getting to Yes. (second edition) New York: Penguin Books, 1991.

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This was the premiere book on negotiation that “coined” the term “interest-based” negotiation. They take the reader through a 4 step win/win methodology that is easy to read and straightforward. It was first published in the United States in 1981 and is used as a basic text in most conflict management and negotiation training. The second edition doubled the size of the book and answers four questions about principled negotiation, dealing with irrational people, tactics and power. This book is also full of great real life examples.

Fitzgerald, Beth. “No Hard Feelings: Strive to Resolve Conflicts in the Workplace Before They Damage Your Company.” San Jose Mercury News 25 April 2000, morning final: 18C.

Corporate executives and managers are turning to conflict training and conflict management consultants to help guide them through internal strife and resulting casualties brought on by increasing demands and ever-faster timelines. Corporate America is recognizing the need to acknowledge conflict and deal with it productively and proactively.

Folberg, Jay and Taylor, Allison. Mediation: A Comprehensive Guide to Resolving Conflicts Without Litigation. San Francisco: Jossey-Bass Publishers, 1984.

This is a classic first text on mediation written by two Northwest authors. The book briefly explores conflict, but goes into depth outlining the mediation process and applying the process in many different contexts – labor, community, crisis, family, divorce, workplace, etc. Finally, the authors delve into the ethical, educational and practical issues of the profession.

Ford, John. Workplace Conflict: Facts and Figures. 16-4-00. Jossey Bass Publishers.  
<<http://www.josseybass.com/index-con.html>>

Abstracts and links to workplace conflict facts and figures.

French, Wendell L., Bell, Cecil H. Jr. and Zawacki, Robert A. Organizational Development and Transformation – Managing Effective Change. Boston: Irwin McGraw-Hill, 2000.

A classic, comprehensive text on organizational development. Various articles and essays take the reader through the history, applications, interventions, strategies and challenges in the field of organizational development.

Gibbs, Mark. “Managing By Messaging.” Network World 14 Sept. 1998.

Overreliance on email as a communication channel is extremely common. Many managers dive behind their computers and issue edicts that manage the process rather than the people. Includes strategies for managing by email.

Gobeli, David H., and Koenig, Harold F., and Bechinger, Iris. “Managing Conflict in Software Development Teams: A Multilevel Analysis.” Journal of Product Innovation Management 15 (1998): 423-435.

For New Product Development (NPD) organizations, a little conflict can be a good thing; the tension can engender innovation. The authors note that conflict must be managed not only for the satisfaction of team members, but also to achieve strategic project success. In a study of 117 respondents, unresolved conflict had a strong, negative effect on overall software

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product success and customer satisfaction. Impact of various conflict styles is considered, with a recommendation to resolve conflict with true problem solving (i.e., collaboration).

Gordon, Corbett, Attorney at Law. Personal interview. 28 June 2000.

Conversation regarding employment law and dispute resolution vis-à-vis technology development environments.

Gruber, Howard E. "Creativity and Conflict Resolution." The Handbook of Conflict Resolution. San Francisco: Jossey-Bass, 2000.

The relationship between creativity and conflict is explored from the perspective of the importance of point of view. Using two experiments with human subjects, Gruber illustrates his hypothesis that free and open communication facilitates problem solving. This article indicates that developing the skill of assuming multiple points of view is a creative exercise critical to conflict resolution.

Hecker, Daniel. "High-technology employment: a broader view." Monthly Labor Review (June 1999): 18 – 28.

High technology employment, 14% of total employment, is projected to grow much faster than in the past due to employment gains in high-tech services and among suppliers to computer and electronic components manufacturers.

"Hewitt study finds that demand for 'hot skills' continues." Hewitt Associates Press Release 29 July 1999. ITAA website: workforce resources/articles/IT workforce studies and statistics. 10 June 2000. <<<http://www.ita.org/workforce/resources/articles.htm>>>

Competition has never been keener for IT employees with "hot" skills. IT professionals with the hottest skills are often receiving base pay increases in the 10-20% range per year, compared to national average annual increases of 4-5% for non-IT salaried exempt U.S. employees. Turnover of IT employees averages just below 16%, but some companies in the study reported turnover rates as high as 35%. The average time reported for filling an IT position was three months. Twenty-eight percent of companies reported at least 10% of their high tech positions were vacant, and while the vacancies are down from 1998 reports, 75% reported using contract IT employees in some capacity.

Humphrey, Watts S. Managing Technical People. Reading (MA):Addison Wesley Longman, 1997.

Includes practical highlights and tools for leading technical professionals. He focuses on the critical role of innovative people, and gives concrete advice on how to identify, motivate and organize people into highly productive teams.

"IDC study finds current worldwide shortage of 1 million workers; projects shortage of 850,000 IT workers over next 3 years." Newsbytes 21 September 1999. ITAA website: workforce resources/articles/IT workforce studies and statistics. 10 June 2000. <<<http://www.ita.org/workforce/resources/articles.htm>>>



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Worldwide, the shortage of IT workers currently stands at more than 1 million - a problem will only intensify during the next millennium. The US will experience intense recruiting for nearly 850,000 IT openings in 2002. IT firms that lower their attrition rates can cut their recruiting needs by as much as half. The cost of attrition to a company is often "far greater" than recruiting costs. Based on two separate reports: "The Resource Gap in the IT Industry: Too Much Work, Not Enough Skilled People" and "Employing Critical IT Talent in the 21st Century."

IT Workforce Studies and Statistics. 11 May 2000. Information Technology Association of America. <[www.ita.org/workforce/resources/articles.htm](http://www.ita.org/workforce/resources/articles.htm)>

Compilation of abstracts and links addressing workforce studies, employment projections, IT industry compensation trends, retention and turnover, state level workforce studies and international workforce studies.

Jameson, Jessica Katz. "Toward A Comprehensive Model for the Assessment and Management of Intraorganizational Conflict: Developing the Framework." The International Journal of Conflict Management 10:3 (July, 1999): 268-294.

The author proposes framework for a model of intraorganizational conflict assessment and management. A contingency-based model, it would consider conflict characteristics, desired outcomes, and awareness of available conflict management strategies, with an aim to assist in identifying the most appropriate conflict management strategy for a given conflict.

Johnson, David W., Johnson, Roger T. and Tjosvold, Dean. "Constructive Controversy." The Handbook of Conflict Resolution. San Francisco: Jossey-Bass Publishers, 2000.

A method of addressing conflict in a manner which generates the highest level of learning, the best and most creative decisions, and the greatest degree of personal growth and psychological health is discussed. Using case studies to describe their theory, the authors describe how to practice this method in a variety of contexts.

Katz, Ralph, ed. The Human Side of Managing Technical Innovation. New York: Oxford University Press, 1997.

A comprehensive collection of readings that give a variety of insights into successfully managing the people in technology environments. The readings cover motivating professional performance, managing creativity, managing project team dynamics, the role of project managers and leaders, cultural differences, decision-making processes and organizational practices and policies. There are also several readings that link successful project teams and managers with resolving conflict; however, there is little in the way of practical skills for managing conflict.

Kaye, Beverly and Jordan-Evans, Sharon. "Retention: Tag, You're It! How to Build a Retention Culture." Training & Development April 2000: 29 – 34.

Retention is corporate America's number 1 challenge. Of 50 identified retention factors, pay is the least important. HR has to lead retention efforts by making managers the owners – responsible and accountable for keeping good employees.

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Kepner-Tregoe Business Issues Research Group. "Avoiding the Brain Drain: What Companies Are Doing to Lock in Their Talent." Training & Development April 2000: 20.

Researchers studying high employee retention identified practices common to organizations dubbed "Retention Leaders", including having a stairstepping process for conflict resolution; offering legitimate alternative avenues that allow employees to circumvent their immediate supervisor, if necessary, to get their problems resolved; and viewing people management as a strategic business issue.

Kleiner, Art. "Corporate Culture in Internet Time." Strategy and Business :18 – 24. First Quarter, 2000.

The author discusses the impact of the tension between two cultures essential to technology development, those of hype and craft. He describes how e-commerce varies from traditional businesses in this cultural aspect. He goes on to discuss how to develop and support effective project teams in the context of e-business.

Kreitzber, Charles B., Ed. "Usability as Therapy." The UPA Voice 2:2.  
<<http://www.upassoc.org/voice/vol2no2/index.htm>>

Postulates a conflict management role for usability professionals as e-commerce evolves. Speaks particularly to the lack of alignment between "developers" and "the business". "As we enter the second act of the e-business transformation, the cost and risk of business' failure to assume full partnership with developers is unacceptable."

Kwahk, K-Y and Kim, Y-G. "A Cognitive model based approach for organizational conflict resolution." International Journal of Information Management 18:6 (1998): 443-456.

The authors analyze organizational conflict, seek to identify cause-effect relationships, and propose a model for capturing and alleviating conflict.

Lebedun, Jean. Managing Workplace Conflict. West Des Moines: America Media Publishing, 1998.

A self-help work book with a series of "tests" the reader can take to reflect on their individual response to conflict, analyze a conflict situation, resolve a real conflict in four easy steps, etc. There are some examples, but mostly, the authors ask the reader to reflect about conflicts in their own life.

Logan, Mark. "Design Shop Counseling." 5 June 2000. Designshops.com.  
<[www.Designshops.com](http://www.Designshops.com)>

This article describes how a dot com company in Kansas City faced internal communication problems. In response, they hired a communication consultant, who walked them through a series of trainings and meetings that improved internal communication and resulted in a remarkable turnaround in all areas of their work.

Maruca, Regina Fazio. "How Do You Manage an Off-Site Team?" Harvard Business Review July-August 1998.

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Case study demonstrating the challenges of managing an off-site team when team members are in conflict with one another. Four experts offer their advice on the complexities of managing off-site employees.

Mateyaschuk, Jennifer. "1999 National IT Salary Survey: Pay Up." Information Week 4 April 1999. Information Week Online. 28 June 2000.  
<<<http://informationweek.com/731/salsurvey.htm>>>

Reports on a survey of more than 21,000 respondents: IT salaries continue to climb. IT managers earn a median base salary of \$71,000, up 9.2% from 1998. IT staff members earn a median annual base salary of \$54,000, up 8% from 1998. Job-hopping is common, with staffers moving on after four years, while managers stay about five years. That's not surprising, considering 70% have been contacted by headhunters this year.

Maydan Nicotera, Anne, ed. Conflict and Organizations-Communicative Processes. Albany: State University of New York Press, 1995.

This edited collection examines conflict management (vs. conflict resolution) through the lens of communication theory. Most works on organizational conflict focus on negotiation processes, usually with a prescriptive bias. This collection focuses on conflict in three broad categories: ways of thinking about organizational conflict, individual processes within the organization, and interaction processes in organizational conflict.

McCarthy, Jim. Dynamics of Software Development. Redmond (WA): Microsoft Press, 1995.

The author discusses the practical aspects of managing software product development teams based on his personal experience. His comments regarding establishing shared vision, "the most difficult feat of all to pull off", bear on the issue of communication across the project team.

"Meta study found demand for IT workers high after Y2K; found current turnover 11 to 20%." PC Week 22 February 1999. ITAA website: workforce resources/articles/IT workforce studies and statistics. 10 June 2000.  
<<<http://www.ita.org/workforce/resources/articles.htm>>>

Summary of IT labor report. Meta Group predicted no relief from the IT labor shortage. Retention is a major issue, with turnover averaging 11 percent to 20 percent and even, in some corporations, hitting the 50 percent mark. Such turnover is painful: The cost of replacing an IT worker is estimated at one and one-half to two times annual salary. IT salaries are a factor in staffing problems, with an average 20 percent annual increase. That contrasts with 4 percent annual increases for non-IT salaries.

Occupational Information Center. 28-6-2000. OLMIS (Oregon Labor Market Information System). <<http://olmis.emp.state.or.us/>>

OLMIS offers a variety of information, including wage and employment statistics for Oregon. Wages cited are as of 1998.

Oregon Software Industry 2000 Directory. Tigard (OR): Software Association of Oregon. 2000.

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Offering an annual snapshot of the software industry in Oregon, the SAO report includes industry overview, funding and resource information, schools, and an industry directory.

Oregon State. Oregon Employment Department Research and Analysis. Portland-Vancouver PMSA Economic Profile. Salem (OR): Oregon Employment Dept. 19 May 2000.

Excel spreadsheet detailing Portland-Vancouver's Economic Profile, 1989 – 1999. Received file 19 May 2000.

Pinto, Jeffrey K. and O.M. Kharbanda. "Lessons for an Accidental Profession." Business Horizons (March – April 1995): 41 – 50. Reprinted in Ralph Katz, ed., The Human Side of Managing Technological Innovations. Oxford: Oxford University Press, 1997. 215 - 226.

Based on interviews with dozens of senior project managers, the authors offer The Vital Dozen: 12 Points for Project Managers to Remember. Among them, "Recognize project team conflict as progress."

Raider, Ellen, Coleman, Susan and Gerson, Janet. "Teaching Conflict Resolution Skills in a Workshop." The Handbook of Conflict Resolution. San Francisco: Jossey-Bass Publishers, 2000.

The authors describe insights gained from teaching negotiation and mediation to adult learners, and suggest workshop models for conflict resolution training.

Rahim, M. Afzalur and Albert Blum. Global Perspectives on Organizational Conflict. Westport (CT): Praeger, 1994.

The authors analyze organizational conflict orientation and management practices in France, Japan, The Netherlands, Norway, South Africa, Spain and Turkey. Each analysis looks at social, cultural and economic factors; managerial styles; styles of handling interpersonal conflict; alternative dispute management; conclusions and implications.

Ruch, Will. "How to Keep Gen X Employees From Becoming X-Employees." Training & Development April 2000: 43.

Studies show that, on average, US companies experience a 50 percent turnover of employees every four years.

Ryals, Frank, Oregon Employment Dept. Telephone interview. 8 June 2000.

Discussion regarding software industry employment in Oregon.

Salopek, Jennifer J. "Listen Up!" Training & Development April 2000: 15.

Managers and executives must increase their ability to listen. Researcher Rex Gatto found that 89% of managers showed a high level of assertiveness and an ability to succinctly present their points of view. They also tend to be challenging or argumentative, don't listen to others, and cut off real communication. Managers tend to be task-oriented, they do not shy away from conflict, they fight harder, and are less disturbed by disagreement. They favor brief,

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focused communication, and tend to respond in such a manner. It all adds up to a glaring need for managers to develop better listening skills.

Scannell, Tim. IT Worker Gap Will Hit 1.2 Million. 29 June 1999. TechWeb: Technology News. 18 May 2000 <<[www.techweb.com/wire/story/TWB19990629S0010](http://www.techweb.com/wire/story/TWB19990629S0010)>>

The IT worker shortage is getting worse. As turnover climbs, companies struggle to find and keep people with technical and business skills. A wish-list of skills needed includes understanding of business modeling, project management, leadership, teamwork, and communication.

“Shared Neutrals.” Oregon Mediation Association Newsletter Spring 1999.

Quarterly newsletter describes and details success of the Shared Neutrals mediation network program, as implemented by various governmental agencies in Oregon.

Singer, Linda R. Settling Disputes: Conflict Resoluton in Business, Families, and the Legal System. Boulder: Westview Press, 1990.

A primer for the beginning conflict resolution specialist. This book gives the reader a history of the dispute settlement movement, defines conflict resolution techniques and gives example of dispute resolution in various contexts – from families, communities, and businesses to the legal system.

Slaikeu, Karl A. and Ralph H. Hasson. Controlling the Costs of Conflict. San Francisco: Jossey-Bass, 1998.

The authors base their work on the premise that there is something wrong with the way most businesses manage conflict. Weak conflict resolution systems (higher authority, power plays and avoidance) equal high costs for businesses. The authors examine how collaboration saves money, and how mediation saves time and money.

Souder, William E. “Managing Relations between R & D and Marketing in New Product Development Projects.” Journal of Product Innovation Management 5 (1988): 6 – 19. Reprinted in Ralph Katz, ed., The Human Side of Managing Technological Innovations. Oxford: Oxford University Press, 1997. 523-534.

Research and development teams (R & D) and marketing teams depend on each other for the creation of new products. Yet, in nearly two-thirds of the 289 projects studied, their work relationship was disharmonious, often very much so. Disharmony between R & D and marketing continues to be prevalent, chronic and disruptive to successful new product development. The author suggests a variety of remedies, all related to communication, an acknowledgement of interdependence, and a need to work together as one team.

Steckler, Niki, Oregon Graduate Institute. Telephone interview. 20 June 2000.

Conversation regarding the state of conflict management skills in the software development industry.

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“Survey of Technical Development Professionals.” Portland State University – Professional Development Center. Email survey. June 2000.

Survey sent to 180 qualified contacts, primarily project managers in technology development arenas. 56 responded (31.1%). Questions concerned development environment (hardware, software, telecommunications, biotechnology, other), customer (business to business, business to consumer, internal use, other), team configuration (cross-functional team, uni-functional team, individuals coordinated by a manager, other), percentage of projects that fall short of expectations, cause of project failures, impact of various causes on project failure, impact on job satisfaction and job performance of various causes of project failure.

“Survey reveals turnover rates in information technology.” RHI Press release 16 December 1998. ITAA website: workforce resources/articles/IT workforce studies and statistics. 10 June 2000. <<<http://www.ita.org/workforce/resources/articles.htm>>>

With today's record-low unemployment levels, the issue of staff retention is top of mind for technology executives. But how much turnover is "normal" in the industry? In a recent survey, chief information officers (CIOs) said the average annual turnover rate within a typical IT department is 19 percent, and about one-fifth of respondents cited attrition rates of more than 25 percent. The survey includes responses from 1,400 CIOs from a stratified random sample of U.S. companies with more than 100 employees.

Tamler, Howard, Usability Consultant. Telephone interview. 15 June 2000.

Conversation regarding the state of conflict management skills in the software development industry.

Ury, William L., and Jeanne M. Brett and Stephen B. Goldberg. Getting Disputes Resolved: Designing Systems to Cut the Costso of Conflict. Cambridge (MA): The Program on Negotiation at Harvard Law School, 1993.

Outlines a framework for understanding the dispute resolution process, with case studies. Examining the relationship between interests, rights and power, the authors advocate interest-based negotiation, detail the practical realities/costs of conflict, and offer guidelines for dispute resolution system diagnosis and design.

Van Slyke, Erik. “Resolving Team Conflict.” PM Network June 2000: 85 – 88.

Misunderstandings, personality clashes, and differences of opinion are standard fare for team interaction. They can be an opportunity for growth and innovation. Listening to and understanding the other party's perspective and interests is critical to constructive conflict management. This article briefly outlines how to prepare for the interaction, initiate the exchange, facilitate relationship, understand interests, examine solution, reach consensus and mediate conflict.

Vander Vliet, Amy, Oregon Employment Dept. Telephone interview. 18 May 2000.

Conversation regarding software industry employment in Oregon.

Whitaker, Ken. Managing Software Maniacs: Finding, Managing, and Rewarding a Winning Development Team. New York: John Wiley & Sons, Inc., 1994.

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While conflict management is not expressly the topic of this book, this software manager's guide book does unwittingly discuss some of the ways that conflict is handled in software development environments as well as some of the ways it is engendered in the culture.

## Author's Biographies

### Lisa Burk

Lisa Burk has over eighteen years of professional mediation experience and ten years of work as a business consultant and trainer. She provides expert assistance to businesses, public and private non-profit agencies in the areas of:

- conflict resolution and mediation
- diversity and communication
- organizational development and assessment
- group facilitation and strategic planning
- management/team leader coaching
- conflict management system design

She is the owner of Communication Works, an Oregon Limited Liability Company. Her contracts with various organizations range from one day to two year commitments. Lisa specializes in resolving complex organizational disputes. She has trained over five thousand individuals in conflict resolution, communication, diversity and mediation.

She is an adjunct faculty member at Portland State University's Professional Development Center where she teaches "Workplace Conflict Management" and "Communication and Conflict Resolution for Project Managers." Through these teaching efforts, she has become committed to bringing mediation and conflict resolution skills to project managers and team members in software development environments.

### Jean Richardson

Though she has been writing in a variety of areas since 1984, Jean Richardson has been working specifically in hardware and software development environments since 1990. During that time she has designed and implemented a number of user information sets, lead a number of process improvement initiatives, mentored individuals entering the field of technical and business communication, and lead professionalization and education efforts for technical communicators.

Her interest in Alternative Dispute Resolution is an outgrowth of her experience as an independent consultant in high tech, an industry firmly wed to processes fraught with conflict. Some years ago she began to weigh the damage done by unresolved conflict in the workplace and to read about its corollary effects on professionals involved in conflict.



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As a businessperson, she is firmly aware of the value – as well as the cost – of excellent customer service. She cautions fellow consultants against too strictly applying the adage “it’s just business,” because business is done by human beings, and at the root of most conflicts and most customer/vendor, employer/employee, or client/consultant disputes are human issues. Jean believes that if we ignore this basic fact we dehumanize ourselves and imperil our society.

Her fondest focus professionally is software development process improvement for the purpose of delivering higher quality products in more humane working environments.