Applying Mediation Techniques to Rapid Deployment Projects.

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Abstract

This paper defines rapid deployment projects and describes how mediation and other alternative dispute resolution (ADR) techniques can be used to facilitate their development.

Introduction

The need for Requirement Management Systems (RMS) processes to ensure the successful development of Information Technology (IT) projects is being increasingly accepted throughout the private and governmental sectors. Numerous studies[1] have demonstrated the connection between project failure and the lack of adequate RMS processes. Slowly and grudgingly RMS is being recognized as a best practices procedure. The days when a relatively small group of managers and developers could realistically create complex software and network applications with business, system, and requirements analysis being produced in an off-the-cuff, *ad hoc* basis, are long gone.

Numerous software applications have been developed to assist development teams in the process of discovering and tracking project requirements and their associated risks. Most notable among these are: Rational's suite of tools that comprise its unified process (RUP) and Integrated Chipware's requirements and traceability management (RTM) tools.[2] To be sure, these products are great improvements to the virtual void they have attempted to fill within the IT industry. All add substance and schema to requirements analysis. All, however, fall short in one significant area: the resolution of human conflict within the context of rapid deployment projects.

What is a Rapid Deployment Project?

A rapid deployment project is defined as:

> *Any multi-user application or system whose mandated full-life cycle period creates an institutional imperative to emphasize code and product generation over requirements analysis.*

To any experienced programmer or manager, it is clear that this definition would include practically all the IT projects ever conceived. It flies-in-the-face of the conventional wisdom of defining IT projects as being "large", "mid-range", or "small" by virtue of the time set aside for their development, the complexity and scale of their technology, or the size of their budget. The reader may wonder: "How can such a definition be useful when it includes everything?"

The above definition, however, is quite deliberate. Almost all projects are rapid deployment because almost all operate under the shadow of any number of severe constraints - typically

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time, budgetary, manpower, and market constraints. Rapid deployment, therefore, has less to do with its being "large" - regardless of the criteria being used in the definition - and more to do with the perception of severe resource shortages. These perceptions - whether accurate or inaccurate - increase management pressure to push product out the door to demonstrate results. This mind set creates a crisis mentality whose end result are often ill conceived projects that miss their mandated goals by a wide margin.

The Foxhole Mentality

Academia is replete with books and scholarly articles that attempt to dissect the human condition during periods of crisis decision-making [3]. Much of this seminal work came from early social scientists studying social conflict [4]. These pioneers attempted to understand the sociology and psychology of normative human behavior within the context of institutional and other group settings. These important works were latter used as the basis for those who labored to understand the psychological dimensions of foreign policy [5]. Much of the literature about decision-making under pressure has been visited numerous times over the years. It is best illustrated by the work done by the Harvard Negotiation Project, the subsequent bestseller by Roger Fisher and William Ury [6], of which more will be discussed below. Many of these insights gleaned from this cumulative effort are now routinely passed-on to decision-makers through the curriculum of virtually all of the schools of business, as well as management training seminars offered at-large to the business and governmental sectors.

What makes the decision-making process for IT requirements so different from all others is the extremely complex interaction between a series of interconnected technologies and the individuals who have the responsibility for managing them. The IT industry - once relatively small and homogeneous - has now become vast and divergent. Tools and technologies considered to be on the cutting edge six months ago are now routinely considered woefully out-of-date. Specialization has become the norm. What was once primarily an individual activity has been replaced by a group effort by a team of experts. [7] Often these application "stakeholders" are widely dispersed geographically. Where once an annual or even biannual software application release schedule was considered more than adequate to remain commercially competitive, it is not uncommon now for new software versions to be released on a semi-annual basis. With the current emphasis on World Wide Web applications for mission critical systems, this rate of change has been reported as being Internet development cycles have been reported in "Web years," roughly seven times shorter than that of previous development cycles [8]

This rate of technological change continues to accelerate. It staggers even the best prepared to keep abreast.

Under these conditions a foxhole mentality has developed among the stakeholders of IT projects. Each has their respective functional roles. Each has a set of group-oriented needs, responsibilities and their own spoken and unspoken parochial agendas. In many cases, these groups compete for funding and prestige at the expense of the others. Each, certainly, perceives themselves as the one group most "under the gun" to produce results. Like soldiers caught in an enemy attack, each prays that someone else's foxhole will be hit. Under such conditions, it is not uncommon for strong differences of opinion to erupt and mutually exclusive positions to be taken.

A Model of Conflict

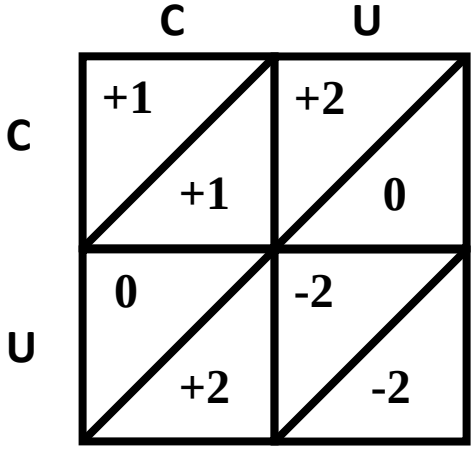
The perception of scarce resources or time often leads to competitive human behavior. Competition, in turn, may lead to conflict behavior. As Lewis Coser has pointed out, conflict need not always be viewed as being dysfunctional. Indeed, conflict can have positive results. Business conflicts over scarce resources or tight timelines for deliverables may act as a catalyst for new ideas that result in more efficient, more cost-effective, and less time consuming methods. Conflict often forces members of a group to think "outside the circle" for new solutions. Therefore, the object of applying mediation and other dispute resolution techniques to rapid development projects is to discover and resolve conflict issues, not to avoid them.

Conflict may be classified as being either rational or irrational. Rational conflict recognizes the legitimate needs and concerns of the other party. Irrational conflict fails to recognize that certain conflict outcomes should not be pursued, because to do so is so completely unacceptable to their opponent that it will escalate the conflict to an entirely new level. Irrational conflict pursues outcomes based on belief, needs, or wants of one party at the expense of the other. Pursuit of irrational conflict goals forces the other party to preemptively retaliate in self-defense.

For example, if during a budget debate between two department heads, it would be irrational for either party to propose the total dismemberment of the other's department as a viable means of resolving the scarcity of budgetary resources. What was before a budgetary disbursement and allocation issue has suddenly been escalated to a much more serious conflict over whose department is less important and more deserving of being dismantled. Rational conflict actively seeks to cooperate with one's opponent and to explore option where all sides can win – called "Win-Win" solutions. Irrational conflict seeks to actively to compete at the other's expense – called a "zero-sum" game.

The most famous zero-sum game in conflict literature is the Prisoner's Dilemma:

Two men are arrested for committing a crime. Each is placed in an interview room alone, prevented from communicating with the other prisoner in any way. Each is separately given the opportunity to confess their crime and go free, in exchange for their testimony against the other. What should the prisoners do? If both cooperate with the other and refuse to confess they each will be set free. If one refuses to confess and the other agrees to confess, then the refusing prisoner will go to jail. If both prisoners confess, both go to jail. The possible outcomes of the Prisoner's Dilemma can be represented as payoffs in a simple 2 X 2 matrix:



So long as each prisoner trusts the other to maintain their silence in cooperation with the other, both will "win" and go free. If either distrust the other, he must confess before the other one does the same to him. But if both distrust the other, and confess, both prisoners will "loose" and go to jail. Cooperative behavior, therefore, is "rational" because it allows both prisoners to win. Conversely, uncooperative behavior is "irrational" because it results in one or both prisoners "loosing".

Mapping Conflict Behavior and Its Resolution

From this very simple model of conflict can be generated some important propositions. For example, we can extrapolate that there are only three general conflict resolution strategies, assuming that neither side is willing to completely abandon pursuit of its own interests (i.e., "conflict avoidance"):

- The parties may choose to negotiate cooperatively.
- The parties may choose to negotiate uncooperatively.
- The parties may choose to not negotiate at all and pursue their own goals until one of them "wins", or until some outside "authority" intervenes.

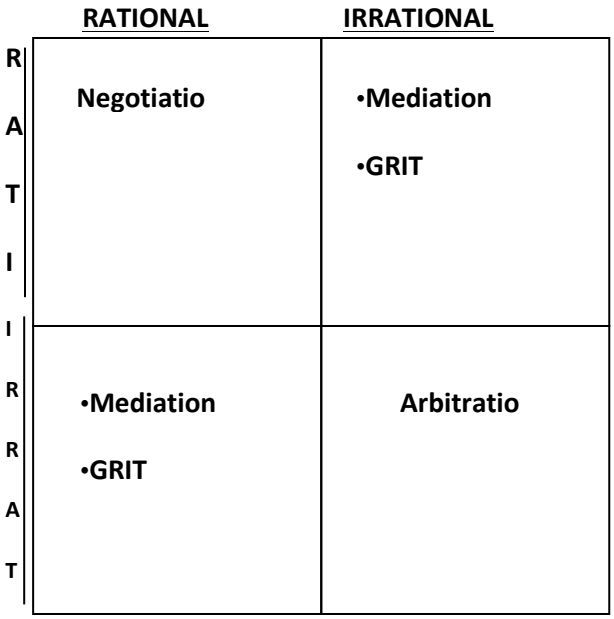
None of these strategies are mutually exclusive of the other. Using one strategy at any given moment does not imply movement to one of the others is not possible. Indeed, in the "real world" of human interactions it is quite likely that a complex strategy that uses all three of these conflict resolution modes is taking place simultaneously on various aspects and sub-issues of the conflict.

Conflict Resolution Techniques

As the incomparable Yogi Berra once said, "If you don't know where you are going, you will wind up somewhere else." [9] It is much the same way with conflict resolution, but more so. Not only will you wind up somewhere else, but also (to remain in the same vein of Yogisms) you'll end up wondering just how you managed to get there when you didn't want to get there at all.

How you attempt to resolve conflicts depends on where both parties are in relation to the other.

If both parties are realistically negotiating with the other,



The Role of the Requirements Analyst

Into this fray enters the requirements analyst.

Summary

We have covered quite a bit of ground in this paper. First, we discussed why business rule modeling may be a useful addition to your professional skill set. Second, we described what business rules are and referred you to two major contributors to the field. Then, we presented a simplified framework for organizing business rules and gave instructions on how to store them in Designer/2000. Each of the sample rule patterns in that framework was listed along with a brief description. We were careful to describe the limitations of our "poor man's methodology". Finally, we touched on how the recognition of these business rule patterns allows us to programmatically find business rules in our data models.

About the Author

Mark Lefcowitz is a partner with Sage Management Systems (SMS), Inc., a company that specializes in requirements management and business analysis. He has over 25 years experience in Information Systems, consulting, and management for both government and

private clients. In the past, Mr. Lefcowitz was also deeply involved in the dispute resolution field, having served as a non-attorney member of the Pennsylvania Bar Association's, Committee on Dispute Resolution. He was also one of the founding members of the Pittsburgh chapter of the Society for Professionals in Dispute Resolution (SPIDR). He served as its first President.

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[1] For example, see: *CHAOS*, The Standish Group International, Inc., Dennis, MA, 1994, 1997; *Computer Industry Daily*, December 12, 1997; FDA, *Medical Devices; Current Good Manufacturing Practice (CGMP) Final Rule; Quality System Regulation*. p 52602; Jones, Caspers, "Revitalizing Software Project Management." *American Programmer* 6, 7 (June 1994), pp. 3-12; and Davis, Alan M. *Software Requirements: Objects, Functions, and States*. Englewood Cliffs, NJ: Pentice-Hall, 1993.

[2] For others, see: LaBudde, Edward V., " *Finding the Right Off-the-Shelf Requirements Management Tool*" at http://www.devicelink.com/mddi/archive/97/10/013.html and Radding, Alan, "*Rapid Development For Complex Apps*" at http://www.informationweek.com/714/14iurap.htm. While these articles are slightly dated, they offer a good starting point.

[3] One of the best known, and now just recently re-releases in an updated second edition version, is:

Allison, Graham T. Essence of Decision: Explaining the Cuban Missile Crisis. Boston: Little,

Brown & Co., 1971. Allison, Graham T., and Philip Zelikow. Essence of Decision: Explaining the

Cuban Missile Crisis. 2d ed. New York: Longman, 1999.

[4] One of the most important attempts to codify a theory of social conflict and to revisit the writings of the great German Sociologist, George Simmel (1858 - 1918), is Lewis Coser's, *The Functions of Social Conflict* (The Free Press, 1956).

[5] For example Joseph H. de Rivera's book of the same name: de Rivera, Joseph H. The Psychological Dimension of Foreign Policy. Charles E. Merrill Publishing Company, 1968.

[6] Fisher, Roger, and Ury, William. Getting to Yes: Negotiating Agreement Without Giving In. Penguin Books, 1983.

[7] See, Humprey, Watts S. *Managing the Software Process*. Reading, MA: Addison-Wesley, 1989.

[8] "BEA Jolt Whitepaper", BEA Systems, Inc. at http://www.bea.com/products/jolt/paper_part3.html#today.

[9] See, *Things People Said: Yogi Berra Quotes* at http://rinkworks.com/said/yogiberra.shtml .