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Intentional Communication Breakdowns in Virtual Communities of Interest: A Hindrance to End-User Knowledge Management

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ABSTRACT

Virtual communities of interest offer their participants the opportunity to exchange knowledge and information as well as to engage in social exchange. Yet not all these exchanges are helpful to the community. In fact, some are intentionally manipulated by their originators to result in a communication breakdown. This study explores the existence of such communication breakdowns, their underlying pattern, and their effect on knowledge and information sharing, using transactional analysis.

1. INTRODUCTION

Shortly after the September 11 terrorist attack, communication on the ISWorld e-mail list went out-of-control. Some participants had used the forum for statements in sympathy of the victims, which resulted in a political debate, personal accusations, and the actual shutdown of the discussion forum on September 14, 2001. While there had been previous, albeit less severe, events of a similar nature, this was the first time a complete, mandated shutdown occurred on ISWorld. And yet, ISWorld is by no means the only community where such events occur. In fact, communication breakdowns of this nature seem to be a normal occurrence in communication groups, even though their outcome is counterproductive to the information exchange, and to the enhancement of community within the discussion groups.

The very negative nature of the dialogue in the ISWorld following 9/11 even led to a change in ISWorld policies (i.e., moderation) to avoid future reoccurrences. Clearly, there is recognition that communication breakdowns are highly counterproductive. But despite the policies, there seems to be no stop to such occurrences, leading us to ask the question of how these communication breakdowns occur, and how they can be avoided. It is a conjecture of this article, that communication breakdowns of this sort are in fact intentional and follow a "script", which allows their identification and avoidance (by enlightened discussion members or community managers). Purpose of this article is the study of this phenomenon.

We investigate four questions related to communication breakdowns. First, are these breakdowns accidental, or are they intentional manipulations of discussions? Second, what would be the pattern of such manipulations? Third, what would be the impact of such manipulations on knowledge creation and knowledge sharing, and fourth, what countermeasures could be applied to avoid communication breakdowns?

As part of the argument, we present ***Transactional Analysis*** (Berne, 1972) and show its applicability to communication in virtual communities. The community we will choose for this analysis is the Leica Users Group (LUG), although some of our examples are motivated by comments made in the ISWorld community.

2. VIRTUAL COMMUNITY

2.1. Overview

Virtual communities have emerged as sources of knowledge and information in recent years. For example, as illustrated in the Cluetrain Manifesto (Locke, et al., 2001), communities frequently know more about a company's product than the company itself, and half of the Fortune 500 companies are expected to develop virtual communities as a source of knowledge and information by 2005.

Formally, virtual communities are best described as communities that exist in a computer mediated space, which have built up relationships between community members, and whose activities are supported by information and communication technology, see for instance (Rheingold, 1993), (Hagel and Armstrong, 1997), (Carver, 1999), (Jones and Rafaeli, 2000), (Romm and Clarke, 1995), (Craig and Zimring, 2000), (Hesse, 1995), (Erickson, 1997), and (Ho, et al., 2000). Howard (1993) calls virtual communities "***social aggregations*** that emerge from the Net when enough people carry on public discussions long enough, with sufficient human feeling, to form webs of ***personal relationships*** in cyberspace" ((Rheingold, 1993). Hagel and Armstrong (1997) highlight the issue of ***member-generated content***. Another definition by Carver (1999) states that virtual communities are "about aggregating people. People are drawn to virtual communities because they provide an engaging environment in which to connect with other people – sometimes only once, but more often in an ongoing series of interactions that create an atmosphere of trust and real insight".

With some research focusing on the development of communities, seemingly no attention has been given to the opposite, namely ***communication breakdowns*** which occur in such communities from time to time. These breakdowns result in a partial or complete stop of information exchange, and possibly lead to the destruction of "social capital" that would otherwise foster future discussions and knowledge sharing. Because of this potential significant impact, and the lack of current research, we chose to target communication breakdowns in this study. Following our interest in knowledge management, we chose to target communities designed to exchange knowledge and information, in other words, communities of interest. Hence from now on, when we refer to virtual communities, we will imply a reference to communities of interest, not necessarily virtual communities in general.

2.2. Structuring Mechanisms of Virtual Communities

The structural mechanisms by which virtual communities are set up are usually quite simple and directed towards the exchange of information and knowledge. A community is formed around a special need,

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interest, or practice, such as a shared interest in travel, photography, or a shared professional interest such as research and teaching in information systems. Community members communicate through message exchange, via e-mail to a central site (e-mail broadcasting), or posting on a shared bulleting board, or similar message sharing/proliferation mechanism.

Contributions are clearly identified by sender, date, topic, and such, thus enabling simple forms of categorization, search, threading, and sorting. A major purpose of the sites is information sharing and broadcasting, such as the announcement of upcoming events.

Virtual communities are however not just knowledge exchange mechanisms, they are also communities, and thus can have a social agenda. Members exchange personal information, recognize each other, and may even transcend from virtual into real communities. Nevertheless, focus on the mission of the community (i.e., the shared interest) is important, and therefore such communities frequently have a code of conduct, formalized moderation, or a person who can grant and revoke access rights. Nevertheless, they are highly self-managed and frequently organized and managed by "end-users" rather than IT professionals. As a consequence, they can neither rely on technical skills of their organizers, nor on information management skills. Essentially, the technology used determines the organization of the knowledge body, while contributions, together with self-management and some forms of monitoring and moderation determine the content.

2.3. Information, Knowledge and "Off-Topic" Contributions

Virtual communities have a topical focus. Nevertheless, their members have the choice to either communicate "on-topic" or "off-topic". On-topic issues are clearly desirable to enhance the community's knowledge and information base. Off-topic comments do not directly relate to the discussion issue, but can nevertheless be useful. It can be information and knowledge rich, but not entirely topical. The other, less informational, form of off-topic comments can help to build up relationships in the virtual community, by allowing members to share feelings and satisfy some of their emotional needs in addition to their informational needs. In fact, the social capital created through personal, off-topic interactions can help the community to grow closer and become more effective in generating and disseminating knowledge and information. Unfortunately, off-topic discussions are frequently less rational than the on-topic discussions, so it is easier to drift off into highly emotional and irrational debates. As a result, off-topic comments are a likely source of communication breakdowns.

Whether on- or off-topic, comments can contain information and knowledge. While these two categories are sometimes difficult to differentiate from each other, we refer to information as factual data about the topic. Examples of information would include a list of different printer models for a particular brand, or the maximum pixel resolution of a digital camera model. Knowledge, by comparison, encompasses principles, rules, heuristics, plans and other generally applicable relationships. For example, if a discussant explains the relationship (formula) between digital resolution and digital photo print size, or a discussant explains how to choose a printer, then we will consider this knowledge. Compare for instance Wagner (2000) on differences between information and knowledge.

3. COMMUNICATION BREAKDOWN

3.1. Overview

A communication breakdown is a sudden stop in information flow on a thread, a topic, or the entire virtual community information exchange. It is usually identified by participants explicitly stating that they are discontinuing their participation, a successful appeal by others to discontinue a thread, or the explicit call for stoppage of a dialog by the community manager. Typically participants make comments such as "let's not argue about this anymore", "let's take this argument offline", "please refrain from commenting on this subject," or such. The community manager may make stronger statements such as "you are asked to immediately cease to comment or you will be removed from this site," or "no more comments are allowed on this thread", or "the board will be closed for discussion until further notice".

With groups of highly accomplished individuals and a history of communication it is difficult to understand why such problems should occur at all. Transactional analysis (Berne, 1972) sheds some light on the phenomenon in regular (non-virtual) communication.

3.2. Analysis of Transactions in Inter-Person Communication

Transactional analysis is a theory of personality and social action based on the analysis of transactions between two or more people, on the basis of specific defined ego states, demonstrated during communication (Berne, 1972). Transaction analysis seeks to interpret the transactions carried out during inter-person communication and to discover which role each person assumes in each stimulus-response exchange. Its underlying assumption is that communicators can assume three roles: parent, adult, or child. Information and knowledge exchange typically takes place at the adult-adult level, while other communications, such as parent-parent, or child-child, are designed to promote *well-being* among communicators (Berne, 1964).

Adult-adult communication is the driver of information and knowledge exchange in virtual communities. Communication at other levels leads to emotional satisfaction, if it is complementary, that is at a level desired by all communicators. For example, if one communicator wants to assume the child role, and another the parent role, then the resulting communication is complementary, thus providing emotional benefit to the communicators. Problems occur when communicator roles are mismatched, or communications are "crossed". For example, A wants to communicate at the adult level (information exchange), but B responds at the parent level (parent-to-child). A asks "where can I find the author guidelines for the *XYZ Journal*?" B replies "you aren't ready yet to publish in the XYZ journal". At such a point in time, a mismatch occurs which leads to frustration in at least one of the communication partners, so that the communication likely terminates (Harris, 1969).

Crossed communications often happen accidentally, as one of the discussion partners accidentally adopts a role that forces the other communicator into a role he or she does not want to adopt. However, communication breakdowns might also be deliberately created, when at least one of the communicators purposely manipulates the communication. The motive for this activity is the individual's goal to prove to the other person(s) in the argument, and possibly the entire community "I'm OK and you are not", which might translate into forms of "mine is better than yours", such as "my research is better than your research", "my beliefs are better than your beliefs", or simply "I'm a better person than you are." The manipulator would do this by engaging other participants into an agitated discussion leading to the adoption of increasingly extreme positions, followed by a sudden "switch" that would leave the other participants exposed in their extreme positions. The operational aspects of this behavior will be discussed in more detail in the following section.

Transaction analysis identifies several types of such behavior, most of them leading the instigator in a "winning" position, while other participants are made to look evil, incompetent, or helpless. Transaction analysis uses the term "game" which originates from game theory, and identifies a multi-party situation where each party has objectives, a set of "moves" it can make, where moves result in outcomes, and outcomes have pay-offs. The intentional discussion manipulator creates a zero-sum game, with him or her intended to "win the argument", and other participants losing. Games are defined as sets of ulterior transactions, repetitive in nature, with a well-defined psychological pay-off (Berne, 1972). An ulterior transaction means that the agent pretends to be doing one thing while really doing something else. Specifically, the game player (instigator of the breakdown) will pretend to carry on an adult communication, while at the same time sending out covert signals leading to crossed communication.

3.3. Operational Aspects of Game Playing

Operationally, a game player (instigator) sets up a situation that leads to communication breakdown by using phrases that can be inter-

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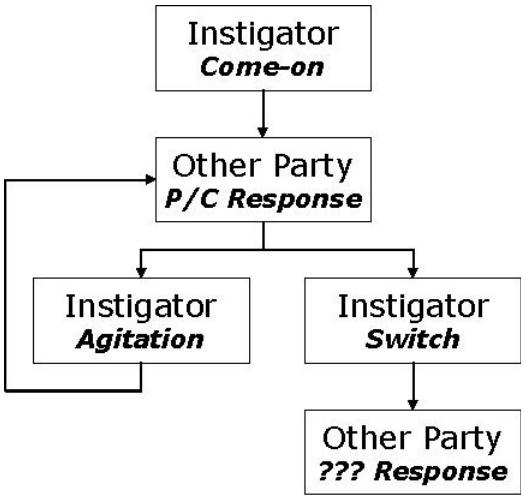
Figure 1: Gaming Behavior Flowchart



preted at more than one level. The game starts with a "come-on" (a usually thinly disguised message that says "I'm ok and you are not"), followed by the other party's angered, non-adult response, possibly several rounds of further discussion agitation, and then the "switch" in which the gaming communicator frustrates the other side. The prototypical pattern of gaming behavior is shown in the flowchart in Figure 1.

A communication following this pattern might unfold as follows.

Come-on "Our journals have to be more rigorous than those elsewhere, because otherwise they don't count for tenure decisions."
Response "You are so arrogant."
Agitation "Maybe your response is the result of an underlying inferiority complex? I am just reporting the facts."
alternatively
Switch "I am sorry you feel like this, I was just trying to explain our publish-or-perish challenge."

The instigator explains that he is facing more rigor (implying he is better), and consequently drawing an angry response. The instigator may then either continue to anger the other party, or pretend he wanted to neutrally report the situation, thus suggesting the other side overreacted.

4. STUDY AND FINDINGS

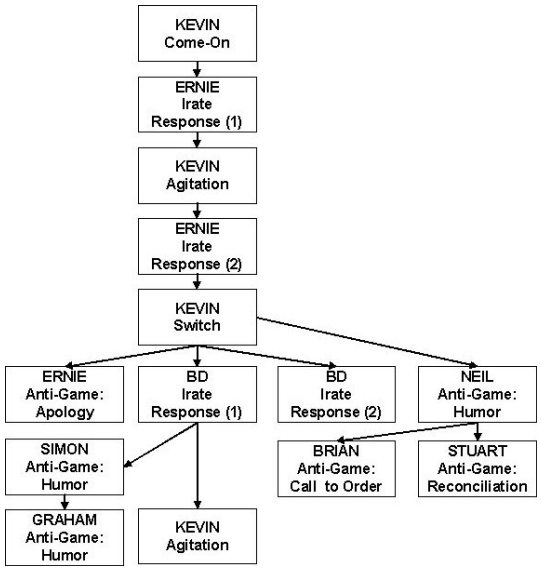
4.1. Research Questions

In this study we are interested in examining the four questions. First, do intentional communication breakdowns occur in virtual communities? Second, how would intentional communication breakdowns occur? Third, what would be the impact of such communication breakdowns? Fourth, what avoidance or recovery techniques could be used to counteract intentional communication breakdowns?

4.2. Methodology

We chose protocol analysis to analyze the phenomenon in an exploratory fashion. Two main coders evaluated two message digests against an *a priori* created coding scheme. One digest contained communications from August 8, 2002, with a number of hostile arguments, while the other digest, dated January 7, 2002, contained few hostilities. After completion of their coding process, the coders compared results. In case of any discrepancies, they consulted an auxiliary coder, discussed their different interpretations, and then settled for a mutually agreeable interpretation.

Figure 2: Communication Breakdown



4.3. Mis-Communication Pattern

Figure 2 depicts part of the communications of the communication where the breakdown occurred (August 8). For brevity, we show only the 14 messages directly related to the breakdown, rather than all 35 messages in the message digest. No communication breakdown occurred on January 7, and there was only one potential attempt (one message) that day to instigate a breakdown.

Figure 2 shows a communication pattern similar to the template depicted in Figure 1. In this situation, Kevin, the instigator uses a come-on and one further agitation against Ernie, who becomes the angry (parental) responder. An interesting variation in this communication is the fact that another participant joins in ("BD") who also responds to the come-on. In the end, Kevin tries once more to agitate BD (since Ernie has stopped "playing"), but Kevin does not succeed.

4.4. Effect on Knowledge and Information Sharing

An analysis of the communications by type of contribution offers further insights, as exhibited in Table 1.

On the "game day" when the communication breakdown occurred, less than half of the 35 messages were on-topic, thus less than half of the comments contributed to the growth of knowledge or information within the community. Furthermore, 31.4% of all messages were on-topic information, with 8.6% each being questions and knowledge answers. By comparison, on the random day, 57.4% of the messages were on-topic, and the overall information, knowledge or question contributions accounted for 96.3% of all messages. Overall, the contributions for the game and random day were significantly different from each other ($C^2 = 16.06$, $dF = 4$, $p < 0.001$).

Table 1: Messages by Contribution Type

	Game Day					Random Day				
	On Topic		Off Topic		Total	On Topic		Off Topic		Total
	No.	%	No.	%	%	No.	%	No.	%	%
Knowledge	3	8.6	0	0.0	8.6	5	9.3	0	0.0	9.3
Information	11	31.4	6	17.1	48.6	21	38.9	19	35.2	74.1
Question	3	8.6	0	0.0	8.6	5	9.3	2	3.7	13.0
Game	0	0	6	17.1	17.1	0	0.0	2	3.7	3.7
Anti-Game	0	0	6	17.1	17.1	0	0.0	0	0.0	0.0
Cumulative	17	48.6	18	51.3	100.0	31	57.4	23	42.6	100.0

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4.5. Recovery Techniques

The communication breakdown pattern in Figure 2 also identifies several communication recovery techniques. Ernie used an adult apology to return to adult communication. Neil, Stuart, Graham, and Simon used lighthearted replies (humor) to welcome Kevin into the community. Brian commented in a role we might characterize as "meta-parent", calling discussants to order. Brian is the list owner and thus has the authority to enforce rules. His comment in fact also contained an element of humor. Hence, even in this short communication exchange, we can observe humor, adult apology, and call-to-order as three recovery techniques, with humor being the most popular.

5. INTERPRETATION AND CONCLUSIONS

Game playing and the resulting destructive communication is a widespread behavior in many virtual communities, especially if they are end-user managed and therefore without internal power relationships.

Game playing is a behavior independent from the mission of the community, but is driven by individuals' desire to receive emotional satisfaction from "winning" the argument. Game playing appears to result in a reduction of knowledge and information exchange, as much effort is spent on the argument and recovery from it, instead of on valuable exchanges.

Given that the communication is highly patterned, it can be recognized and can be avoided by the participants who are the end-users of the information and communication system. If left alone, game playing can quickly deteriorate the communication to the point of breakdown, can turn active into passive participants, and can lead to defections among former participants.

Much work needs to be done to study this phenomenon in detail. We will need to analyze larger numbers of communications to develop a more comprehensive set of game playing behaviors. We also need to determine the impact of game playing on communication more formally, for example with respect to the loss of knowledge content, or the bandwidth wasted for nonproductive communication. This will allow us to offer more formal conclusions concerning the phenomenon.

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