VIRTUAL TEAMS: INFORMATION TYPES FOR EFFECTIVE FUNCTIONING

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Abstract

Virtual Teams (VT), enabled by Information and Communication Technology (ICT), are more common in organizations. VT members frequently exchange information because of their interdependent tasks but little is known on how this information influences on the VT functioning. This paper groups that information into several types and describes their significance in VT. Work outputs, work processes, work experiences and ICT captured information are subsequently used as indicators to analyse the VT effective functioning. These indicators are mapped to the different information types and a framework about their interconnections is proposed. Some suggestions on how to manage different information types for effective functioning in different VT types are offered.

Keywords: Virtual Teams, Effective Functioning, Information Types.
INTRODUCTION

This paper proposes a framework for understanding the association between information types and Virtual Teams’ effective functioning, and uses the framework to compare the association in different types of Virtual Teams (VT). Geographically dispersed VT members interact through interdependent tasks, and rely on Information and Communication Technology (ICT) more than face-to-face to perform their tasks (Schiller and Mandviwalla 2007). This paper denotes information as processed data, recommendations and opinion that enable or is intended to enable the effective functioning of Virtual Teams (VT) – (Alavi and Leidner 2001). Effective functioning refers to the VT ability to produce the intended result.

Information in VT is the focus because it acts as a surrogate for the lack of face-to-face interactions. For example, insufficient information may lead to misunderstanding in the VT (Cramton 2001), while too much of it, without immediacy of feedback, can create conflicts (Kankanhalli et al., 2007). Also, the level of information received by the dispersed VT members varies when events occur (Hinds and Bailey 2003) – which resulted in uneven distribution of information in which the members have to work with. Recent research suggests some VT focused on information related to the tasks (e.g. procedures) to produce high quality output (e.g. Malhotra et al., 2001), while some VT focused on contextual information (e.g. know-how) – (Maznevski and Chudoba 2000). Different information types seem to be associated with VT effective functioning. However, little is known about this association because information in VT is seldom studied (Watson-Manheim 2002, p 199).

Despite information being significant to VT, there are very few frameworks that take into account the different information types for VT’s effective functioning. While there are studies that look into task completion in VT (e.g. Malhotra et al., 2001; Baba et al., 2004; Jarvenpaa et al., 2004; Cummings 2004; Maznevski and Chudoba 2000) there is no explanation on the experiences which the VT members need to go through to reach that completion. For example, high quality work output might not be fulfilling when all the information has to be meticulously kept updated without knowing which of the information can be discarded (Majchrzak et al., 2000). Furthermore, VT sources of information for any given task are dispersed, ranging from customers to experts to working environment and to those external to the teams (Cummings 2004). Thus, identifying the source for the needed information may be time consuming which may affect the VT’s effective functioning. Consequently, it is unclear how different information types and effective functioning are associated in VT.

Therefore, this paper proposes a framework for understanding the association between the information types and the VT’s effective functioning. The research question is “How are the different information types which VT need associated with their effective functioning?” The paper’s objectives are:

1. To explore how different information types are likely to be needed in VT.
2. To study VT’s effective functioning using work outputs, work processes, work experiences and ICT captured information (Furst et al., 1999).
3. To examine how different information types are associated with VT effective functioning.

Past research also indicate that different VT types are more successful when focusing on different outcomes (Gassmann and Zedtwitz 2003; Jackson 1999) and their information needed are context sensitive (Hinsz et al., 1997). Thus, it is also our intention to use the framework to compare and highlight the different information types needed in different VT types for their effective functioning.

INFORMATION TYPES IN VT

We use Hinsz et al., (1997) concept of Groups as Information Processors (GIP) to gather details about the different information types needed for the VT’s effective functioning. We use this concept because it specifies the type of information that is needed to be shared before a team can be highly effective. The information types specified include information about the tasks, team members and context within
which the task, team and its members exist (p 45). The concept of GIP is parallel with the notion of shared cognition of high performance collocated teams – which assert that in order for team members to attain common understanding and coordinate their behavior without the need to communicate; task specific information, team specific information and information about the team members’ idiosyncrasies need to be shared first (Cannon-Bowers and Salas 2001, p 196-197). Using GIP, evidence obtained about the different information types needed in VT are grouped.

2.1 Information about the Tasks – Information (Tasks)

This information is about the VT tasks (e.g. the task schedules). It is used for coordination purposes to get the tasks done and may have been agreed before the tasks start (e.g. Majchrzak et al., 2000). It can be in the form of formal documents (e.g. project timeline) or informal agreement (e.g. word of mouth). This information type is needed because it helps to minimize communication, both face-to-face and ICT mediated, as it enables the members to act on the tasks without having to discuss these tasks each time. This information facilitates comparable expectations amongst VT members about the tasks at hand. Often, this information is derived from similar tasks that were successfully completed. This information type is static and can be acquired through common repository (e.g. project folders). It is likely that when information of this type is missing, other members are able to provide it readily. However, in VT, locating other members is not as straightforward as knocking at the person’s door after sending emails.

2.2 Information about the Team Members – Information (Team Members)

This information is about the VT members’ strengths, weaknesses and working preferences. It is used to anticipate members’ needs and provide the necessary information before being asked. Having information about others’ abilities (e.g. special skills), constraints (e.g. language barriers) and working preferences may assist VT members to have comparable expectations among themselves. It encourages mutual understanding and acknowledges others’ limitations. This information exists within the team and is not structured but informally gathered through frequent face-to-face interactions (Maznevski and Chudoba 2000). It implies that VT with members who have worked for a long time or who have worked together in a collocated environment might have higher chances of having this information type. Apparently, only few VT have the luxury of frequent face-to-face interactions, while others resort to ICT to establish their members’ identities (Balthazard et al., 2004).

2.3 Information about the ICT – Information (ICT)

Information about the ICT that supports the VT includes information about the ICT infrastructure at national level (e.g. supported bandwidth), at the organizational level (e.g. ICT policy) and at personal level (e.g. preferred ICT tools). This information type is needed because some tasks require the VT members to use the same ICT tool which needs to be synchronized (e.g. lotus notes). The synchronization requires the VT to have information about their members’ broadband infrastructure, pre-existing ICT configurations and preferred ICT applications (Majchrzak et al., 2000). While at national level this information is generally stable because it is unlikely that the national infrastructure will change drastically, at organizational level this information is subjected to local office policy. For example, the local office might decide to install incompatible software. At personal level, this information is dynamic because the members’ preferences are subjected to the level of training received and how they perceive the use of ICT (Rutkowski et al., 2007). Hence, it is important for VT to be informed when the information at the different level changes.
2.4 **Information about the Operating Environment – Information (Environment)**

This information is about VT external operating environment that ranges from the economic climate (e.g. information rich places) to political systems (e.g. business-friendly policies) to physical environment (e.g. VT member working in isolation). It is needed because VT members may be operating in environments that raise different concerns. For instance, whereas dealing with colleagues who have limited internet connection may require one to know when and how long they will remain online, dealing with colleagues who have 24-h internet access may require one to know the internet speed and bandwidth. While policy can be implemented to maintain standard if the VT are from the same organization, the members need to interact, both online and face-to-face, with wider range of vendors, customers and outsource partners from different locations who have incompatible standards (Karimi et al., 2004). Therefore, this information type is useful to understand the VT external operating environment and may be used by the organizations to refine their VT policy. This information may be found in the public domain (e.g. databases) because of its macro in nature.

2.5 **Information about the Social Norms – Information (Social Norms)**

This information is about the social norms in VT. For example, an agreement on when to reply emails may reduce anxieties when emails are not replied (Cramton 2001). It assists to set the boundaries of appropriate behaviors in the VT because there are high chances that VT members are made of individuals from different cultural backgrounds (Shapiro et al., 2005). For instance, conflicts may arise because of different concepts of time (Saunders et al., 2004). While some cultures view time as a linear construct (e.g. deadlines), others view it as an event driven (e.g. marked by ceremonies). Furthermore, different cultures emphasize communication differently. While some cultures emphasize on externalization of feeling, others expect it to be understood (Hall and Hall 1990). This information type guides the VT members to have compatible perception among them. It may be in a guideline format or an unwritten code of conduct among the members. In VT, the latter is likely to require more effort to gather because of limited face-to-face interactions to observe the team in action.

2.6 **Meta-Information**

This information is about the structure, format and content of the information (Mohammed and Dumville 2001). Structure is concerned with the context in which the information is representing (e.g. is the information part of other information). Format is concerned with the form of representation (e.g. text, images). Content is concerned with the messages it intends to transmit. In VT, this information type might be tagged with some levels of urgency to indicate its salience (Cramton 2001). These details are important because they may determine the pattern and usage of ICT (Watson-Manheim and Balanger 2007). For example, if the information is important, short and not urgent, sending it through e-mail is sufficient because it does not require immediate attention and email leaves a paper trail as evidence. However, if the information is important and urgent, an email followed by a phone call is necessary.

2.7 **Summary of the Types of Information in VT**

The information types described are by no means an exhaustive list and there might be others. However, the evidence synthesized from VT literature seems to indicate the taxonomy of information types for VT where their degree of significance varies depending on the context. Unfortunately, there is no empirical evidence which can assist VT practitioners to understand when their VT require each of this information type or the likely situations that trigger the need for each of them. There is also no empirical evidence of their interconnections even when it appears that some information types are needed to support the others. For example, Information (Social Norms) might be able to supplement Information (Team Members). This interconnection may change the dynamic of some information
types. There is also no indication of alternatives when any of the information types is unavailable. It could be that, many of the researchers assumed that the information is always available or the focus was on one specific information type. Therefore, further research is necessary to explore in details the different information types that can be found in VT. Only then, taxonomy of information types in VT can be developed.

3  VT EFFECTIVE FUNCTIONING

Furst et al., (1999) effective indicators are used in this study as they were derived from general work teams’ effectiveness (McGrath 1991) – and have been used in earlier VT researches (e.g. Malhotra et al., 2001; Jarvenpaa et al., 2004; Cummings 2004; Kankanhalli et al., 2007). Their indicators take into account the management’s views, the VT members’ views and the ICT supporting the VT. The indicators are: Work Outputs, Work Processes, Work Experiences and ICT Captured Information. For analyse purposes, each indicator will be discussed separately even though they are not mutually exclusive.

3.1  Work Outputs as VT Effective Functioning Indicator

VT work outputs attributes include product quality, quantity and timeliness. For example, a design of a new jet engine is perceived as a high quality product because it surpasses the management’s expectation of its economic benefits and was completed on time (Malhotra et al., 2001). When work outputs are used as the effective functioning indicator, the standard of quality is determined by the management and it may be assessed using perception (e.g. grading of a project) – (Kankanhalli et al., 2007), objective (e.g. absolute figure) or both. It was argued that standard of quality is best measured objectively rather than through perception because the latter are liable to bias (Ahuja and Carley 1999, p 747). Among the three attributes of work outputs, product quantity seems the least used in VT. This may be due to VT work outputs’ nature which are often knowledge based (e.g. product design) where quality rather than quantity is always the issue (van Fenema 2002).

3.2  Work Processes as VT Effective Functioning Indicator

VT work processes attributes include the methods used and the efforts required to execute the methods in order to attain higher productivity. In Straus and McGrath’s (1994) experiment research, groups that used ICT need more effort than those that met face-to-face in order to complete high level interdependence tasks (e.g. making decisions) because of difficulties in getting agreement when the members have limited opportunity of meeting face-to-face. In Majchrzak et al., (2000) VT research on specialist engineers from different organizations, the agreements involve changing some of the pre-existing work processes which is not in the best interest to some members. For example, those who used to work independently felt uncomfortable when they were required to update all their actions into the new repository in order for their lead engineer evaluation. Therefore, in VT, these work processes need constant refinement because some members may need to work differently and are unable to anticipate the outcomes of their actions. The expected benefits from the work processes may not materialize because they can add burden to the members rather than assist them. Whereas these work processes always have interest in the VT work outcomes, they did not reflect on the VT members’ experiences (e.g. level of satisfaction). Hence, an indicator to measure the VT members’ experiences is necessary.

3.3  Work Experiences as VT Effective Functioning Indicator

VT members’ experiences attributes constitute elements that contribute to the well being of the VT members (e.g. level of satisfaction, behavioural outcomes, trust) – (Hardin et al., 2007; Baba et al., 2004; Jarvenpaa et al., 2004). This indicator is mainly assessed through the VT members themselves
as opposed to the management or the team leaders (e.g. Baba et al., 2004). The measurements are done mostly through perceptions (e.g. interviews) but assisted by data like, number of sick leave taken. Some of the attributes, like trust, requires sensitive data from the VT members who may not be forthcoming. For example, some VT members may not want to disclose important data if they feel it can jeopardize their work or working relationship (Jarvenpaa 2000). This could be one reason why many VT studies on trust involve students team rather than work team (e.g. Piccoli and Ives 2003; Jarvenpaa et al., 2004) – because students team has no sense of permanence and lacks the long term commitment of work team. It is easier for students in VT to be completely open and hence the issues of obtaining sensitive data can be minimized. These studies provide some evidence on the significance of work experiences in VT. For instance, Chidambaram (1996) laboratory experiments suggested that relationship between the VT members can develop after repeated usage of an ICT tool. While Piccoli and Ives (2003) research found that behaviour control, like monitoring which is typical in collocated teams, caused trust to decline in VT.

3.4 ICT Captured Information as VT Effective Functioning Indicator

This indicator focuses on the use of ICT in VT that concerns with the degree to which the VT work processes and outputs can be captured electronically and reused (Furst et al., 1999). Its attributes involve two phase actions: Capturing and Reusing. The capturing phase requires the VT, in particular, the leaders, to predict the information required for future work processes and outputs. This may be translated to formal work agreement between the VT members (Majchrzak et al., 2000). This agreement constitutes the input methods and the form of content (Griffith and Sawyer 2006). Input method can be done through automatic updating by the ICT or actively inputted by the VT members. The content may be in the form of naming experts (who know particular content) or the content itself. The reusing phase of the ICT captured information may involve integration of this information into their other work processes. For example, information on different work processes can be combined if the resulted work processes have the potential of producing better outputs (Griffith and Sawyer 2006). It may also be used as “best practices” (Lurey and Raisinghani 2001). However, the ICT captured information is only useful if sufficient details are available, such as, if the work process is only applicable in country specific business practices (Baba et al., 2004).

3.5 Summary on the VT Effective Functioning Indicators

There are several points to note about the VT effective functioning indicators. First, each effective indicator focuses on different aspect of the VT. Therefore, as a whole, these indicators give a clearer picture of the VT effectiveness as opposed to using only one. For example, work outputs alone are insufficient to determine VT effective functioning because it lacks considerations on the VT members’ point of views.

Second, while many of these indicators have been used to determine collocated teams’ effectiveness, cautious is needed when using them in VT. This is because collocated teams’ underlying assumptions (e.g. members belong to an organization) may be less applicable to VT because the members may come from different organizations (e.g. Malhotra et al., 2001). It is necessary to determine which set of values the members subscribed to as it influences their attitudes and effective functioning because of their dual obligations, one to their VT and another to their collocated others.

Third, each indicator has different attributes which is likely to require different types of information. The attributes, in the aggregate, determine the degree of effectiveness for that indicator. At present, there is no empirical evidence on how the attributes consume different information types in the VT.
4 VT EFFECTIVE FUNCTIONING AND INFORMATION TYPES

There are indications that the VT effective functioning indicators can be mapped back to the different information types present in the VT. Table 1 illustrates the framework for understanding the different information types that are associated with (AW) VT effective functioning.

<table>
<thead>
<tr>
<th>Information Types</th>
<th>Work Outputs</th>
<th>Work Processes</th>
<th>Work Experiences</th>
<th>ICT Captured Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tasks</td>
<td>AW the production of high quality output</td>
<td>AW the increase of productivity</td>
<td>AW the improvement of VT members’ satisfaction</td>
<td>AW the planning of future tasks that are similar</td>
</tr>
<tr>
<td>Team Members</td>
<td>AW the structuring of VT to increase the chances of achieving desired output</td>
<td>AW the anticipation of members’ needs</td>
<td>AW the bonding of VT members</td>
<td>AW the identification of expert that is linked to the information</td>
</tr>
<tr>
<td>ICT</td>
<td>AW the reduction of product development life cycle</td>
<td>AW the synchronization of information received</td>
<td>AW the identification of appropriate ICT to convey the messages</td>
<td>AW the execution of similar tasks</td>
</tr>
<tr>
<td>Operating Environment</td>
<td>AW the customization of work output</td>
<td>AW the setting up of acceptable work procedures</td>
<td>AW the understanding of others’ idiosyncrasies</td>
<td>AW the understanding of patent issues and local copyright laws</td>
</tr>
<tr>
<td>Social Norms</td>
<td>AW the avoidance of work output’s disruption</td>
<td>AW the avoidance of having to work with incomplete information</td>
<td>AW the encouragement of positive social behaviors</td>
<td>AW the controlling of access to the information</td>
</tr>
<tr>
<td>Meta-Information</td>
<td>AW the understanding of work output’s constraints</td>
<td>AW the assurance of receiving information that is intact</td>
<td>AW the highlighting of information parts that contain higher degree of importance</td>
<td>AW the understanding of the best format to store in the ICT</td>
</tr>
</tbody>
</table>

Table 1. The association between Information Type and VT effective functioning

4.1 Work Outputs and Information Types

Information (Tasks) was accounted for in some VT studies which investigated task completion (e.g. Malhotra et al., 2001; Maznevski and Chudoba 2000). They concurred that Information (Tasks) is important and requires frequent updating in order to produce high quality outputs. This is because VT members need to be informed on the tasks’ status for coordination purposes and timeliness (Van Fenema 2002). On the other hand, Information (Team Members) helps to be “fit” VT members’ skills with the tasks and informed the management of the best possible structure for their VT works (Gassman et al., 2003). For example, a member with an acute sense of global business policy, that is Information (Environment), can be assigned role to integrate the locally produced information with the VT work outputs (p. 248). Hence, with the necessary information type, the VT work outputs can be customised more quickly to the needs of the local market. One advantage of having VT is their capability to shorten product development time through 24-h “team shift” because their members are working in different time zones (Jackson 1999, p 319). In such cases, it is likely that Information (ICT) is necessary to support the synchronisation of the continuous data generated for the purpose of the VT work outputs. For example, Cramton (2001) VT found that using online chat to hold discussions may result data to be out of sync because some ICT tools induce time lags and cause sequencing problems to other members.
4.2 Work Processes and Information Types

VT work processes may benefit from the existence of Information (Social Norms) because VT members lack opportunity of clarifying their interdependent tasks face-to-face. For instance, Cramton (2001) VT research highlights the need to have information about the appropriate response time to reply emails. This is to avoid working with incomplete information as a result of failing to wait for delayed emails replies. Equally important to VT work processes is Information (Environment) because VT members operate from diverse working environment. They work under different set of working procedures since they have local norms and rules to observe (Baba et al., 2004). Information (Environment) may improve the VT work processes because the work methods adopted will take into consideration local business constraints. For example, it is inappropriate to call for teleconferencing on Friday afternoon (Middle Eastern Time) with colleagues located in the Middle East. Having this sort of information may look trivial but it can reduce interruptions to the flow of information in VT and hence improve on their work processes. This is because VT members are more willing to share information when they perceive others are sensitive towards their local culture and working environment (Bhagat et al., 2002).

4.3 Work Experiences and Information Types

Information (Tasks) when appropriate, may lead to more positive work experiences in VT. For example, Malhotra et al., (2001) VT members’ level of satisfaction improved when they were told precisely the set of information about the tasks that need to be updated and the purpose for the updating. Work experiences can also benefit from having Information (Team Members) because it promotes cohesiveness in the VT through appreciation of others’ idiosyncrasies (Mohammed and Dumville 2001). Appreciating other’s idiosyncrasy will be easier if one has Information (Environment) of that VT member. For example, Information (Environment) enables VT members to understand their colleagues’ working environment and to empathize with them (Karimi et al., 2004). Additionally, Information (ICT) may equip the VT members with the knowledge on which ICT can best highlight the more important part of the information (Cramton 2001). This is to encourage positive social behaviors and reduce the chances of missing critical information which can frustrate other members. Thus, it seems that VT can achieve positive work experiences with the presence of information types, such as, Information (Tasks), Information (Team Members) Information (Environment) and Information (ICT).

4.4 ICT Captured Information and Information Types

ICT captured information mostly contain codified information (e.g. work procedures) rather than contextualized information (e.g. know-how information) (Nonaka et al., 2000) – which renders some information to be useless even when the VT members can access them (Dennis 1993). In order to circumvent this issue, Majchrzak et al., (2005) proposed a strategy which involves capturing “background” information of that contextualized information instead. This background information may include but not restricted to: the owner of the information, history of the information (e.g. versioning), alternative information (e.g. the next expert person) and best practices for the tasks. This information supplements the ICT captured information to make it more reusable. While Majchrzak et al., (2005) strategy might need more empirical support, it does indicate that different information types can assist VT in putting meaning on the information they have.

5 DISCUSSION

We grouped the VTs using Saunders and Ahuja (2006) concept of Short Term VT (SVT) and Long Term VT (LVT). For example, SVT consists of staffs assembled temporarily for a specific task (e.g. writing a journal paper) and disbanded when the task is completed, while LVT consists of permanent
staffs working on ongoing tasks (e.g. maintaining the organization ICT). Grouping the VTs as such is important because research on traditional teams have found that time spend being in the teams influence the amount of information and the type of information needed by the members in order to execute the team’s tasks (Kelly and Young 2004). In particular, researches on traditional teams have treated information needed as important part of team performance and found that team effectiveness varies as a function of two dimensions: what information has been shared and the degree that information is shared (Heinz et al., 1998). Therefore, it is important to know which information type is more significant to both VTs, to explore the underlying differences of their information needs and to systematically tailor particular set of information types to both VTs. Meanwhile, we offer some suggestions for both VTs to consider on how they can manage the different information types for their effective functioning.

5.1 Creating Awareness on the Existence of Different Information Types

The first step in managing the information types for the VT effective functioning is to make both VT aware the existence of the different information types. For example, if some VT members only focus on the Information (Tasks) and not aware that others might not view it in the same high regard, there is likely to be conflict if tasks related data is not updated (Hinds and Bailey 2003). This may lead some VT members to have the impressions that their colleagues are not fully committed to the task, which might not be so because that VT members could have sense that Information (Team Members) is more important in getting the task done. Therefore, awareness on the existence of different information types enables the VT members to be more sensitive towards others. It also allows VT leaders to organise its team. For example, VT members delegated to be in charge of an information type can ensure and be accountable for critical information about that information type to be understood by other members. This is as opposed to having accessible repository where the information is not necessarily understood (Dennis 1993).

In SVT, more information types are likely to be found because diverse ideas are brought in at different phase of the tasks by different VT members (e.g. Malhotra et al., 2001) as opposed to LVT. Importantly, the information types are often accompanied with context specific information in order for them to be understood and used (e.g. Baba et al., 2004). Unless the information types are complete and accessible, SVT are likely to ignore most of the information because of time constraint (Saunders and Ahuja 2006), while LVT may have more time to make sense of the information through acquiring further details. Therefore, coupled with dynamism of memberships, we suggest there is more urgency in SVT than LVT to classify the information types in order for them to be integrated with the existing information pool because prior knowledge is part of VT context (Griffith et al., 2003).

5.2 Avoiding Single Profile VT Trap

The failure to acknowledge the significance of different information types often result from the over emphasis on the specialization profile of the VT members (e.g. Jackson 1999). Their rationale is to compartmentalize the members’ specialized skills to negate others’ weaknesses and complement each other’s strengths. Inadvertently, the VT members are very focussed on specific information type and often this will be closely related to Information (Tasks), like the job functional specification. On the whole, it resulted in the VT focusing on a specific information type and failed to acknowledge the significance of others. Acknowledging that other information type can be equally important is a major step in avoiding single profile VT trap. It can avoid the VT from the need to reinvent the wheel by being more receptive towards other’s work processes and ideas even if they have no relation to the tasks at hand. Hence, it discourages ignorance. Of course, this will encourage information overload if it is not managed and that is where the suggestion about the VT member to be in charge of the information type is useful. It is useful because the VT member can selectively filter the vital information for that information type and help to avoid good ideas from being wasted.
In LVT, the members are likely to emphasize more on information types that create context to promote relationship building because anticipation of future interactions (Kelly and Loving 2004) – as opposed to SVT. While SVT mostly concern in completing the tasks, LVT are also concerned with positive work experiences (Saunders and Ahuja 2006). However, positive work experiences such as putting oneself vulnerable to others, relationship building and exchanging information that is social orientation in nature can only be developed over time (e.g. Jarvenpaa et al. 2004; Chidambaran 1996; Ahuja and Galvin 2003) – which SVT may not have. Thus, less time bounded LVT likely able to promote information types in order to prolong their relationship, while SVT may need to be given more time if such purposes are desired in their effective functioning.

5.3 Appropriate Information Types for Different Effective Functioning Indicators

VT managers should avoid having the misconception that too much information leads to information overload because VT by nature rely heavily upon information. Importantly, all information types need to be appreciated. For instance, if the team is low in morale but producing high quality output, perhaps, more attention is to be given on the Information (Team Members). This awareness will help VT managers to plan and acquire the information type which is lacking. The planning can help in understanding the likely effective functioning indicators that will be affected. Also, VT managers should not let ICT supporting their VT to obscure the significant difference among the information types. For example, while most ICT tools provide excellent help to VT, it has always been focusing on systematic codified information, as explained by proponents of knowledge management systems (e.g. Alavi and Leidner 2001). If not supplemented with other information types, this codified information might lose its significance (Majchrzak et al., 2005).

SVT focus on elements that are more central to task completion, as such, Information (Tasks) type is an obvious element that is likely to be perceived as important. Also, other information types may be associated with completing the task rather than to serve their intended purposes (e.g. VT bonding, satisfaction) – (Saunders and Ahuja 2006). For instance, Information (Team Members) will likely to be explored in depth for understanding the individuals’ roles pertaining to the work outputs rather than to create bonding within the SVT (e.g. Malhotra et al., 2001).

In LVT, using information type to deviate from its intended purposes may be detrimental due to the consequences of “priming”. Priming occurs when the presentation of a particular information type facilitates its use in later, potentially unrelated tasks (Hinsz et al., 1997, p 47). Priming implies that if an information type is processed for a particular purpose, it will always be seen to have the potential only for that purpose in the future. For example, if Information (Environment) is implored for task completion rather than to empathize with the LVT members, it will always be associated with the purpose of task completion. This may not be LVT best interest because that particular information type may lose its unrealized full potential and create biasness towards an information source during future interactions (e.g. LVT individuals). Therefore, we suggest care to biasness towards the value attached to the information types because failing to differentiate them may lead some information types to be overlooked which otherwise can be an opportunity for the VT.

6 CONCLUSION

The framework proposed may have the potential value as an explanatory mechanism, that is, it may help us understand VT performance by explaining how members of effective VTs interact with one another through the available information types or when the information types needed are not available.

But first, the framework needs to be validated, preferably through multiple case design because there are 4 effective functioning indicators that need to be investigated with the different information types. Only then, it should be possible to assist practitioners make predictions about a VT’s likely effectiveness based on the available information types in that VT. As such, the framework could also
serve as indicators for the VT “readiness” and “preparedness” to take on a particular task – which is essential considering some SVTs may be formed in a short notice on short term basis in order to perform a specific task (e.g. Malhotra et al., 2001).

It is also envisaged that the framework may be used to inform VT which information types are lacking but yet critical, or which excessive information types may be filtered out if there is need to transform a SVT to LVT or vice versa. Hence, minimizing disruption due to change in information needs because both VTs emphasize on different effective functioning indicators (Saunders and Ahuja 2006).

References


