

# Addressing Virtual Team Dynamics

---

**Stanković, Antonia**

**Undergraduate thesis / Završni rad**

**2021**

*Degree Grantor / Ustanova koja je dodijelila akademski / stručni stupanj:* **RIT Croatia / RIT Croatia**

*Permanent link / Trajna poveznica:* <https://um.nsk.hr/um:nbn:hr:229:400416>

*Rights / Prava:* [In copyright](#) / [Zaštićeno autorskim pravom.](#)

*Download date / Datum preuzimanja:* **2024-04-17**



*Repository / Repozitorij:*

[RIT Croatia Digital repository - Rochester Institute of Technology](#)



*image not found or type unknown*

## **Addressing Virtual Team Dynamics**

Antonia Stanković

Senior Capstone Project (HSPT 490)

Prof. Rebecca Charry-Roje

Mentor: prof. Milena Kužnin

Rochester Institute of Technology

**Abstract:**

Application of virtual teams among corporations has been on the rise for the past few years. The focus of this study is on virtual team dynamics due to its cost-effectiveness, and highly competent workforce. Virtual teams face various challenges that limit their performance, and because of that, this study deals with qualitative analysis that virtual teams can't perform effectively without six factors known as trust, team cohesion, communication effectiveness, satisfaction, conflict, and leadership. Moreover, maintaining a virtual team's dynamic is more challenging compared to the traditional face-to-face one. Outstanding results confirmed all the hypotheses, promising a stable future for the virtual team application. This study aims to help corporations understand how to effectively conduct and maintain virtual teams, but also serves as a stimulant for anyone else involved or about to be involved in such a line of work.

*Keywords:* virtual teams, virtual team dynamic, virtual team performance, organisational use of virtual teams, future of virtual teams

## **Introduction**

The world in 2021 has brought great changes. A world, that strongly depends on technology. Although the thought of that is frightening, it did save many businesses from bankruptcy during this COVID19 pandemic. It has been our tool to effectively communicate, manage transactions, make decisions, and stay engaged.

Because of that, the topic of virtual teams didn't randomly pop up this year, it has been a rising department since the 1960s.

According to Minton-Eversole (2012), 66% of multinational organizations have been using virtual teams in their workplace, and as of recently, financesonline's scorecard claims that in the year 2020 that percentage grew over 80%.

The rise in virtual teams has evoked the author's interest because she wanted to explore the dynamics in those virtual, as supposed to the already well-known and practiced co-located ones, across corporate organizations, IT sector, consulting agency, and hospitality field. The current global market situation is founded upon the authenticity of the experience economy. Therefore, the author claims that virtual teams can't perform effectively without six factors also known as trust, team cohesion, communication effectiveness, satisfaction, conflict, and leadership influencing virtual team dynamics. Moreover, maintaining a virtual team's dynamic is more challenging compared to the traditional face-to-face teams. This hypothesis is followed by two research questions: How does virtual team dynamics affect a team's overall performance? and Are corporations going to invest and apply virtual teams more than face-to-face ones in the future?

The paper introduces the terminology behind virtual teams, explains different important factors that affect the overall virtual group dynamics, tests the findings through three different forced groups and reflects the results, and suggests virtual teams' future.

## **Understanding Virtual Teams - Defining Virtual Teams**

A virtual team is a workforce composed of an educated and knowledgeable workforce who are scattered around the globe, and because of that face challenges related to different time zones, overcoming them by organizing their work tasks with suitable communication tools. More and more organizations are implementing virtual teams into their business model due to their access to the international market where a profusion of talent can be found at a lower cost as well as the provision of flexible staff.

Various communication tools are an essential element of virtual teams as they immensely rely on the information flow between team members in order to work out the task specifics and other obligatory information. Existing literature on virtual team communication tools involves video conferencing, social media platforms, e-mail, smartphones, and fax. Those tools are core elements that form a foundation in the communication flow. These days, corporations are engaging more and more on these SM platforms to communicate, collaborate and share their expertise with their virtual team members throughout the day. Also, SM platforms allow team members to constantly exchange information with the rest of the group, broadcast, and network.

Virtual team dynamics such as satisfaction, trust, conflicts, communication effectiveness, team cohesion, and leadership are the most crucial elements of virtual teams' performance.

### **Transition from co-located to virtual teams**

Co-located teams are often referred to as the face-to-face teams that have been well known to corporations for years. Like every team, co-located teams also have challenges to deal with like, productivity and cost. The result of the challenges that were rising within co-located teams caused corporations to think outside the box and find an alternative solution. The interest in virtual teams has begun in the 1960s where companies were exploring different communication tools that were uprising. With the rise of new technology, the organizational structure of teams has begun to change. Virtual teams have been established as a team of expertise dispersed internationally, but still working on the same project. The organizational structure is founded upon the members who will report directly to the project manager, keeping the rest of the team informed together with their group manager. (Daim et al., 2012; Nunamaker, J.F., Romano, N.C., Briggs, R.O. 2003). Project managers of such teams have additional challenges as they are the key factor for information sharing among the group. The pressure to maintain the virtual group's success has an impactful influence on the virtual team's project manager. Some project managers are practicing maximum flexibility because the team members choose when they work, as a leadership style in order to get to know their team dynamic from which they can forecast how the team will perform in terms of success. (Daim et al., 2012; Nunamaker, J.F., Romano, N.C., Briggs, R.O.2003). Some team managers often transfer team-building activities done by co-located teams to ones that could be applied to virtual teams in order to maintain that human social factor that is extremely necessary for the team to succeed.

Some companies have practices that require team members that will be set to work within the virtual group, to telephone each other before. That phone call cannot be work-related, but rather a personalized attempt to bring these people together. Since people are social human beings this phone call breaks that social barrier virtual teams have been struggling with, and not only that but has been proven to enhance trust and performance within teams that apply this practice compared to ones that do not. A great example of this practice can be seen in many multinational organizations such as Intel who have been providing a plethora of products and services with multiple teams working on their design and other related activities. These teams are mostly globally dispersed, performing within virtual teams.

According to Katzenback, J.R. and Smith, D.K. (2004), corporation teams face four life phases: forming, norming, reforming, and performing. Virtual team's success is considered and described through major pillars of trust, leadership, and interpersonal relationships. And because of that leadership is considered the most crucial pillar of a virtual team's performance. It is extremely important that these teammates feel connected, motivated, and engaged with the rest of the team forming an effective team cohesion that will have a positive influence over other factors that will bring an uprise virtual teams' overall performance.

### **Team processes and the virtual team environment**

Daim (2012) present demands for establishing an environment that can without any problems, successfully support virtual teams; presenting them with opportunities for various interactions which serve as a great substitute for those team members who have experience in a traditional team setting by allowing access and visibility on each other's work progress, availability, and activities. Daim (2012) also suggests that virtual teams should be provided with support to different modes of work but also be provided with a positive working environment that operates as an integrated service because it supports team members who are involved in critical activities.

Due to these different priorities, Daim (2012) suggests the incorporation of face-to-face interactions, as much as possible, within the lifetime of a virtual team and to be more specific, during its initiation, where the vision, mission, and goals should be clearly presented, shared and well communicated.

Zaleznik, (2004) stresses the importance of dispersed face-to-face communication within virtual meetings in order to assist them in building relationships and increasing commitment levels as "face-to-face" meetings, which in our case is letting your microphone and camera be on, have proven to enhance the overall team's performance.

Maznevski and Chudoba (2000) on the other hand stress that these virtual teams should stick to ‘temporal rhythm’ during their meetings by implying intense face-to-face meetings, which are followed by a shorter, relaxed interaction that includes the usage of social media, e-mail, and similar communication tools.

Cultural diversity is also an important factor to take into account once working with virtual teams, while Information and Communication Technologies (ICTs) have been proven to alleviate those negative impacts of intercultural miscommunications while language differences, verbal and nonverbal styles have an effect on team performance effectiveness. (Shachaf, 2008).

Griffith et al. (2003) suggests few resolutions for a successful virtual team: equal availability of information like project progression and status, clear collaboration and communication protocols together with the code of conduct, availability and acknowledgment standards, and established team cohesion and trust between leaders and teammates. Griffith et al. (2003) highlights the demand for clarification and verbalization of team rules, the utility of different terminologies, and other miscellaneous descriptions, together with the strategy development and technologies that allow the shift of know-how in the virtual team environment starting from individual team members to organizational-level ones.

Team empowerment and team-based incentive systems are other crucial factors that should be taken into account within virtual teams. (Kirkman and Rosen, 2000). Kirkman and Mathieu (2005) assert the team empowerment is usually described as an accelerated task motivation that is increasing team members’ collective, as a positive judgment of their given organizational tasks (Kirkman and Rosen, 2000) as a crucial part of virtual team performance Kirkman and Rosen, 2000 point out that virtual teams should be granted the opportunity of independent decision-making because it positively affects team functionality which results in the reduction of challenges related to geographic dispersion and project outcome.

## **Rise of organizational use of virtual teams**

### **Virtual team usage by corporate organizations**

Virtual teams are of significant importance to corporations all over the world (Horwitz et al., 2006) and not only that, but virtual teams have confirmed positive outcomes where they were established. The benefits of virtual teams are fitting to organizations. They permit large corporations and SMEs (small and medium business enterprises) to hire skilled human labour

at a lower cost, while still maintaining quality products/services. Scattering virtual teams internationally brings corporations a great competitive advantage as their team of experts operate on project demand, which could result in team dissolution once the project has been completed. The increase in virtual teams across organizations shows how profitable this opportunity is as the quality workforce, higher throughput, and lower cost (Accountingweb, 2010).

### **Virtual teams in IT sector:**

Virtual teams within the IT sector boosted as a result of the software and similar services' ability to easily relocate to a foreign country and take advantage of their lower costs, often known as business' ability, to offshore. Several articles display statistical data about numerous N. American and European IT sectors that have permanent and secured offices scattered around international markets. These corporations use virtual teams for software development among other tasks while working collaboratively across geographic borders. Shirani (2000) researched virtual teams, to be more specific global software development virtual teams, and most of his research proposes that virtual teams collaborate effectively in order to achieve their goal. Within the IT sector's virtual teams, the project manager plays an immense role as the is communication receiver and sender, who has to ensure the teams' output meets given requirements. (Shirani, 2000). This type of team dynamic is called a 'collaborative activity between the team members of internationally scattered teams.

### **Virtual teams in consulting organisations:**

Consulting organizations are expected to deliver global-level expertise and skills to assist global customers. The usage of virtual teams by consulting organizations has already been studied in New Zealand by Paulene (2004). Large consulting organizations as Bain and Company, Ernst and Young, and McKinsey and Company confirmed that they use virtual teams scattered internationally. (Alavi & Tiwana, 2002). The consulting organization, McKinsey and Company, serves a large customer base internationally, including institutions, governments, and large businesses while operating with virtual teams in more than 50 countries. (McKinsey & Company, 2013).

### **Virtual Teams Dynamics**

Virtual team dynamics are characterized as "unconscious, psychological forces that influence the direction of a team's behaviour and performance" (Myers, 2013) Virtual team dynamics



depend on the communication flow among team members and are a crucial factor that affects overall team's effectiveness in regards to the given task. In addition, it may shape your virtual team's overall performance. Related literature studies (Dion, 2000; Maznevski & Chudoba, 2000; Maznevski et al., 2006; Shachaf, 2008; Sivunen & Valo, 2006) propose six factors that are related to a virtual team's success or failure: trust, satisfaction, conflicts, communication effectiveness team cohesion, and leadership. These six factors play a crucial role in terms of virtual teams' success in delivering a task completion. Due to heavy communication dependence, different communication channels and tools are recommended to virtual teams as the information flow is considered mandatory for virtual teams to survive.

### **Trust in Virtual teams**

Trust is defined as "a state involving confident positive expectations about another's motives with respect to one's self in situations entailing risk" (Boon & Holmes, 1991, p.194). It is of significant importance as it affects the overall team's performance from beginning to end. Trust is a complex human emotion that customers, employees, and firms must learn how to balance effectively. Within this research, trust among virtual team members is among high priorities. One of the advantages face-to-face teams have is that trust immediately develops and gradually increases with every next meeting (Jarvenpaa et al., 1998 cited in Henttonen & Blomqvist, 2005; Kirkman et al., 2002). Within a virtual team, face-to-face communication is minimal to non-existent, due to different time zones that don't contribute to team members finding a sufficient schedule, impracticality of understanding each other, and difficulties in building relations.

Every coin has two sides, so there are many challenges to be considered in regard to trust in virtual teams. That trust is developed through information and resource sharing in a timely fashion, and continual communication through communication tools, as building trust takes time. (Henttonen & Blomqvist, 2005; Kirkman et al., 2002). Greenberg et al. (2007) advocates that trust is the most fundamental element of a virtual team. "Trust itself has three vital components: ability, integrity and benevolence" (Cummings & Bromiley, 1996; Greenberg et al., 2007; McAllister, 1995). These three components impact the cycle of the virtual team from the point of formation, initiation, team organization, and task completion.

Trust is considered as an adhesive that stimulates the perception of teamwork among virtual teams so that they can focus on task completion. In the virtual environment, a team member

would trust his/her team once the overall team performance is effective and engaged still adhering to their integrity. (Greenberg et al., 2007; McAllister, 1995).

A larger trade-off in information sharing leads to an increase in trust. (Henttonen & Blomqvist, 2005; Kirkman et al., 2002; Peters & Manz, 2007). Either single or multiple projects virtual teams are assigned to do, trust is an inevitable factor that serves as a strong connection for effective teamwork, and therefore the increase of trust within the team the greater their will for active participation is. (Peters & Manz, 2007). As a result in trust, team members will be able to develop a sense of others, where their judgment skills, in regard to the expectation from their teammates, will increasingly become accurate as the level of your understanding and acknowledgments of the team are increasing with the trust element (Peters & Manz, 2007).

Mutual understanding brings virtual teams to another dynamic as it allows the team to get to know each's skillsets and background better and therefore direct and delegate each other's fields to the team's advantage. (Peters & Manz, 2007). Another benefit of trust-building founds on the relationship building within the team, which is necessary in order to maintain an effective performing virtual team. (Horwitz et al., 2006; Peters & Manz, 2007). Building professional relations are a crucial factor that adds up to the overall team effectiveness, (Horwitz et al., 2006) because if you create a positive working environment in which the team enjoys working and help each other there should be no suspicion that the team will underdeliver.

Paul and McDaniel (2004) introduce different forms of trust: calculative, competence, relational and integrated. Calculative trust is established mainly upon reliability, competence mostly about the capability and expertise. These two factors relate to task performance. Relational trust is founded upon resemblance in society, race, and culture, while integrative trust is a balanced combination of all three. Since the first two factors are transparent using various communication channels can easily be built on that. On the other hand, integrative trust is the highest level of trust that enables you to build stronger relationships and actively participate in teamwork collaboration.

In this document, integrative trust is referred to as 'trust'. Within the virtual team environment, the role of trust becomes endangered as there are many obstacles and challenges in co-located teams (Canney Davison & Ekelund, 2004).

Virtual team working environment is still uncertain, complex, and multi-dimensional and therefore team members must mutually understand and trust each other. (Canney Davison &

Ekelund, 2004; Peters & Manz, 2007). Trust encourages cooperation and coordination. Trust implants confidence in team members encouraging them to perform better (Peters & Manz, 2007). Peters and Karen (2009) conducted research that claims that a virtual team's overall performance is directly relying on the trust factor and increases only if the team's trust does. They also point out the lack of control in the virtual environment thus trust is an essential component that raises higher expectations.

Trust cannot be established if the rest of the team members are not willing to introduce their knowledge and ideas and it might harm the team's performance (Brown, Poole, & Rodgers, 2004; Peters & Karren, 2009). Additionally, team members might grow a tendency to behave opportunistically which can cause various conflicts between team members due to low efficiency (Brown et al., 2004). Trust is evaluated as the biggest influence over the teams' success or failure in regard to virtual teams (Kanawattanachai & Yoo, 2002). Investing in creating an effective relationship is quite challenging in virtual teams due to almost non-existent face-to-face meetings but putting effort should be done jointly. (Horwitz et al., 2006)

Virtual teams are affected by language, culture, time zones barriers that impact the team performance. An additional challenge in virtual teams is miscommunication that compromises the trust element. Miscommunication can lead to underperformance as it has the power of reducing trust among the virtual team. (Shachaf, 2008). Therefore, trust is an essential element. Apart from the challenges they encounter, many corporations have concluded that maintaining communication flow and efficiently delegating team skills are crucial factors for a virtual team's success. After all, human capital makes errors which cause some corporations to try to minimize all of them by offering training programs for virtual teams, which would ultimately help employees develop a sense of a virtual team's dynamic. (Smits, 2005).

### **Team cohesion in virtual teams**

Team cohesion is defined as "a dynamic process that is reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs" (Carron et al., 1998, p. 213 cited in Carron and Brawley, 2012). In virtual teams building trust makes sure that the independent knowledge members are familiar with each other's capabilities and how will they respond to a specific situation. (Bastida et al., 2013; Lewis, 2003). The result of this directs to team cohesion which is always a benefit. (Sivunen & Valo, 2006) advocate that team cohesion is increasingly desired

and holds a large role in culturally diverse virtual teams, which is a regular case in virtual teams. (Maznevski & Chudoba, 2000).

Team cohesion has the ability to generate effective teams, as this allows them to direct their expertise in a direction where they'll be of use making the team depend on each other while developing teamwork skills.

Malhotra et al., (2007) recommends that a proper member-task pairing intensifies team relations and reinforces team cohesion. A cohesive virtual team is able to problem-solve any at hand challenge they encounter in a short period, while still being in control of the group project (Bastida et al., 2013) Overall, team cohesion is another crucial factor of virtual team dynamics, which influences the team's overall performance.

### **Satisfaction in virtual teams**

Satisfaction in teams working towards a group task is defined as “the group's shared attitude towards its task and the associated work environment” (Mason & Griffin, 2002, p. 284). It is another crucial factor of the virtual team dynamic that depends on trust and results in team member individual satisfaction. (Jarvenpaa, Shaw, & Staples, 2004). It is an essential component of virtual teams since statistical records show that satisfied teams overall perform better. (Lin et al., 2008). Satisfaction is achieved by an effective skillset match. It can be considered as an effective and rational delegation of project tasks to teammates that are competent to deliver.

An effective delegation of project tasks will in most cases result in a positive result. In the case of virtual teams as already repeated many times, team satisfaction does add up to the overall team's performance. Team satisfaction is mostly considered to be one of the criteria that directly affect team performance (Curseu, Shalk, & Wessel, 2008; Shachaf, 2008). Satisfied team members have a mutual understanding and their competencies sharing high hopes of respect mutually, therefore creating this positive work environment that allows the team to delegate tasks, trust and rely on the rest of the team (Lema, 2012).

### **Conflict in Virtual teams**

Conflict is defined as “an interactive process manifested in incompatibility, disagreement or dissonance within or between social entities” (Rahim, 2010, p.16). Virtual teams are usually affected by conflicts which can deduct from the team's performance and have an impact on teams' morale, resulting in a negative impact on team's productivity (Griffith et al., 2003;

Montoya-Weiss, Massey, & Song, 2001). Teams usually resolve their arguments in person with the project manager in the role of the moderator. In virtual teams, meeting in person is not possible since other team members are scattered around the globe, which results in conflict intensification. Within the virtual team, working environment team members oftentimes don't have a flexible understanding of each other's private lives which can cause other members to form misleading conclusions about others. (Brown et al., 2007). There is an increase of conflicts in virtual teams in comparison with the co-located ones as a result of the communication nature and team diversity. (Baan, 2004).

Cultural diversity can also result in various conflicts as it might hinder carrying out the project task by the virtual team. (Kankanhalli et al., 2006). This oftentimes results in diminishing value of the team's productivity and overall project quality. One of the often causes of conflicts within virtual groups is cultural diversity. Those relational conflicts can escalate quickly and collapse the trust build so far and diminish team cohesion. Another type of diversity is functional diversity which often results in task-relevant conflicts within virtual teams. (Kankanhalli et al., 2006). Therefore, every team should resolve their conflicts with an effective conflict management approach. This approach should be adapted to the nature of conflict and its effectiveness to repel the given situation. Empirical research (Maznevski, 1994a; Watson, Kumar, & Michaelsen, 1993) has proven that culturally diverse teams engage and care for the communication flow and conflict resolvable and therefore operate as a congruent unity seamlessly. As a result, it has been proven that conflicts should be resolved best by applying the best-fit approach. Similarly, Maznevski et al., (2006) claimed that categorizing conflicts into relationships and tasks are also effective. "The former" analysis the weakened relationships and contrast among the team, while "the latter" configures a divided perspective on the overall team performance and strategy.

Virtual teams are challenging as the team doesn't know their co-workers nor their working styles that well. (Leinonen et al., 2005; Maznevski et al., 2006). Such cases should be resolved by emphasizing "collaboration awareness". In translation, virtual teams' success is dependent on how well the team remembers crucial information. (Leinonen et al., 2005). A deduced number of conflicts within virtual teams results in overall better team performance. As so far stated virtual teams massively depend on communication flow which can often be a result of the conflict in case of miscommunication. Furthermore, within the occurrence of conflict communication tools should be the main mean for the team manager to resolve it through. In

summary, conflicts are an immense factor that should be taken into consideration as they affect heavily virtual team dynamics.

### **Communication effectiveness in virtual teams**

The communication tools are the heart of virtual teams as they wouldn't be sustainable without them. The team's reliance on information flow and communication tools is of remarkable importance and in case of any problems that could potentially occur, disabling that necessary communication flow, would cause serious problems to the virtual team performance. (Bjorn &Ngwenyama, 2009). The most frequent disputes among the virtual team dynamics are language barriers, different perceptions about received information, and lack of communication flow. (Carvalho, 2008). Daim et al. (2012) claims that the majority of disputes in virtual teams come from miscommunication or various communication flow problems. Virtual teams, as stated, depend heavily on the virtual information flow and in case of any breakdowns, causes a diminishing return from the team's side. Five major events that contribute to the communication collapse are trust, cultural diversity, inter-member relationships, leadership, and technology. (Daim et al., 2012). All of these factors are equally important to the virtual team and in case of not delivering at least one, can cause a communication collapse. Communication collapse is an immense problem for virtual teams. (Bjorn &Ngwenyama, 2009).

A profusion of literature studies claim that the virtual team environment is very sensitive to communication breakdowns and deals with them quite regularly. (Malhotra et al., 2007; Rosen, Furst, & Blackburn, 2007). Newly created virtual teams have to be more flexible in terms of tackling communication breakdowns as they are highly vulnerable to these kinds of failures in comparison to the experienced virtual teams. (Hinds &Mortensen, 2005). Therefore, communication effectiveness is one of the biggest challenges for virtual teams. Virtual team managers should create a positive working environment by constantly encouraging others and maintaining team morale and spirit high. (Howitz et al.,2006).

A virtual team performs better if the group has developed a "shared meaning". (Bjorn &Ngwenyama, 2009). This guarantees that the team members are welcome to openly exchange personal opinions and suggestions in case of a communication collapse, in order to deliver the required task with data at hand. (Bjorn & Ngwenyama, 2009). This system takes more time and effort by all virtual team parties to become fully practicable in comparison to the co-located ones. Within the virtual group working environment, communication failure can be questioned

by re-evaluating the team's work practices and daily routines. (Bjorn & Ngwenyama, 2009; Daim et al., 2012). An alternative resolution of this issue could be a comprehensive re-assessment of team policies. (Bjorn & Ngwenyama, 2009).

Communication malfunctions can cause massive damage to the organizations because they are the one's dependant on that virtual team project and as such can bring serious risk to the company if the project is delayed or failed. Communication planning (Daim et al., 2012) advocates the analysis and forecasted planning of the project information. In case of a well-planned communication plan all team, members are well informed on how information flows. Because of the fact that virtual teams are geographically scattered and time dispersed, communication failures can cause severe problems among the virtual team members. (Horwitz et al., 2006). In fact, Horwitz et al. (2006) describes that communication difficulties within a virtual team are caused due to their geographic dispersion as they're working across different time zones and encounter different working environments while maintaining their achievement towards the common goal.

Within the virtual team, dynamics communication is a crucial factor that glues them all together. Since the reliability of the communication flow is of immense importance, it often happens that team members can engage in conflicts once in the position of not receiving expected or no response from their colleagues back. This can influence the overall project progress and make an effect on the entire corporation, as the overall amount of effort required to deliver the given task is more challenging than co-located (face-to-face) group work.

### **Leadership in Virtual Teams**

Leadership is essential for a virtual team because it provides them with a clarified set of objectives and goals that should be accomplished. Virtual team management is quite often demanding and challenging because of the intense scheduling, assembling, monitoring, and coordinating individual team member's activities, together with task progression, along with internationally scattered team members. (Bjorn & Ngwenyama, 2009; Schmidt &Bannon, 1992). Among the first steps once creating a virtual team are selecting and retaining competent individuals that would be a proper fit for a virtual team. According to Horwitz (2006), there should be a good balance among the team member's competence in technical and interpersonal skillset. Because of the different working environments in virtual teams as opposed to face-to-face ones, there is a different managerial structure applied. (Bjorn & Ngwenyama, 2009; Schmidt &Bannon, 1992) Leadership positions within co-located teams have the advantage

over applicable practices that have been proven successful compared to the virtual teams where the stability of the team's dynamic is shaky. (Gaudes, 2002; Joinson, 2002). Virtual team leaders are often constrained by not having a full idea of the virtual team working environment which can cause some of the leaders to transform in a more structured way of leading that is directing the team towards the main project goal the most. (Carmel, 2002; Joinson, 2002). As a result of virtual teams communicating less frequently, members mostly suffer from inadequate or brief feedback. Because of these human errors, leadership positions come as an adherent to corporations. Managerial positions should be able to improve and motivate the overall team dynamic, but due to the virtual team's complexity, some factors remain unexploited completely. (Gaudes, Hamilton-Bogart, Marsh, & Robinson, 2007)

Leaders within virtual teams should be observant, attentive, cautious, and able to recognize the patterns that might cause troubles to the overall team dynamic. Leaders should guard the team against negative impacts that might affect the team dynamic. Challenges and issues that leaders of virtual teams' face are vital components that indicate the leader's capability to maintain the team's productivity and satisfaction levels high.

Researches (Ayoko, Konrad, & Boyle, 2012; Shachaf, 2008) state the importance of early stages in virtual teamwork as they build trust which is one of the key factors that affects virtual team dynamic. These initial phases often require more effort as the leader will need credibility and authenticity to prove himself/herself to create a sound and reliable team. The strived cohesiveness is reflected in the upcoming phases where the team works together on the project. The activities leaders apply in virtual teams are somewhat similar to ones practiced in co-located ones. Activities in virtual teams require additional attention, transformation, and effort to justify that absence of in-person feedback (Daim et al., 2012). Within co-located teams, challenges and issues that leaders face can be mitigated through various face-to-face interactions and in-person feedback.

For a virtual team to succeed, it is important that the designated leader devotes, involves, and commits to effectively structured and well thought every step that is to be taken. Moreover, leaders should promote the team's unity and provide timely feedback to ensure the communication flow of information necessary for project completion circulates. With this approach, the team's spirit arises which is automatically easier for leaders to manage. (Furst, Reeves, Rosen, & Blackburn, 2004).



Effective leadership makes sure that there are no losses concerning the motivation levels within the team, even in case of members being unable to deliver the expected maximum. It ensures that the coordination of virtual teams is well structured and clear to every member. This ensures that every member has a clear role which should prevent situations where only one person is doing their job. (Furst, Reeves, Rosen, & Blackburn, 2004)

Leadership roles within virtual teams carry a lot of burdens that are caused by communication issues that might interrupt the overall team dynamic. Leaders in virtual teams have to double their efforts to keep the information flow but also have clear backup plans in case of any technical errors. (Shirani, 2000). This large responsibility is often a large stressor for the individual fulfilling the role and therefore might exhaust the leader. The leadership roles serve as a stable bridge between the team and the client. The leader must know in which context to communicate which terms with both clients and team members. Shirani (2000). The project leader should be a skilled individual who knows how to assess and transform to his/her audience. (Kužnin, 2020)

Meindl (1993) claims that we can interpret two leadership roles assigned leadership and emergent leadership. Assigned leaders are people who are assigned to lead the team while emergent leader arises from a non-structural team by stepping in the role of a leader when necessary.

Within virtual teams, the application of emergent leaders is more practiced as it has proven to build trust and team cohesion among the members. According to Piccoli, Powell & Ives (2004), an effective virtual team consists of one or two highly engaged teammates who invest a majority of their time motivating and prodding the rest of the team. The ability to maintain the team's spirit high is a crucial factor that is expected from virtual team leaders. Each team member must be a proper fit for the role that matches the demographics and dynamics of the designated team. Once the leader is assigned, the main expectation for this role lies in the level of satisfaction and motivation that directs the team's energy towards the task achievement. (Tuffley, 2012).

Every leader should no matter under which conditions they operate strive to maintain the team's performance levels high. Moreover, great leaders effectively manage a positive working relationship among the team and its external members. (Druskat & Wolff, 2001).

The communication tool is an essential element of virtual teams, therefore leadership in a virtual team, in case of an absence in any sort of interaction/communication holds little

relevance. Aside from that, the communication tool is a crucial element that determines how effective the team is. (Hambley, O'Neill, & Kline, 2007).

There are different approaches to improve your information flow within virtual teams. (Pauleen & Yoong, 2001). Virtual team members often use social media platforms to enhance the interaction as secondary means of communication.

According to the literature so far virtual team performance relies on the six factors of virtual team dynamic mentioned so far: communication effectiveness, conflict, satisfaction, team cohesion, trust, and leadership. These factors effectively impact the virtual team dynamic.

From given literature the author's claim revolves around two questions: how does virtual team dynamics affect a team's overall performance? and are corporations going to invest and apply virtual teams more than face-to-face ones in the future? Moreover, the author claims that virtual teams can't perform effectively without mentioned six factors known as trust, team cohesion, communication effectiveness, satisfaction, conflict, and leadership due to its large influence over the virtual team dynamic. Furthermore, the author claims that maintaining a virtual team's dynamic is more challenging compared to the traditional face-to-face teams.

## **Method**

This qualitative study aims to provide a conducted analysis of virtual team dynamics across different sectors such as corporate organizations, the IT sector, and consulting agencies. Focus groups seemed the most efficient method for this research because it allows the author to stimulate a productive discussion while directing it in his/her benefit.

Focus group discussion is a method where a researcher creates a group of individuals with a goal to discuss a given topic, aiming to conclude some useful information from a complex personalized experiences, perceptions, beliefs, and attitudes of chosen participants through the given time discussion (Bryant & Charmaz, 2007; Charmaz, 2014)

Focus group's popularity emerged due to its qualitative data collection and constructive strategy-based approach that is used in scientific research (Charmaz, 2014). The qualitative approach is often viewed as a "cost-effective" and "promising alternative" in participatory research. Bryant & Charmaz (2007) and Charmaz (2014) claim it affords the researcher to compare different paradigms and worldviews. The application of focus groups has begun in

the 1940s and was used mostly by sociologists and psychologists. (Denzin & Lincoln, 2011)

### **Study Purpose**

The qualitative group interview is conducted to discuss the virtual team dynamic and the future of virtual teams. Qualitative research enables an extensive insight into untested phenomena (Denzin & Lincoln, 2011), which will also answer the question of how much of the literature theory is applicable in virtual teams' day-to-day practices. On the other hand, focus groups motivate their participants to express and portray these related perceptions (Charmaz, 2014), which will add additional value to the results. Focus groups are regarded as a time-efficient method for evoking insightful information about virtual team dynamics.

### **Participants**

Participants chosen for the focus groups are categorized by the the variety of gender, personality types, demographics and virtual team involvement (Check, abbreviations, table 1.1). Because of the current COVID19 restrictions, the focus groups were done in the spirit of virtual teams – ZOOM. Participants were invited two weeks in advance with a PowerPoint instrument that contained the designated agenda, doodle survey to schedule the most convenient time of the meeting, and the individual consent for recording.

In total three focus groups were covering the hospitality field, IT sector, and consultancy companies. The first set of participants were hospitality students who have engaged in virtual teams. Participant one is a female extrovert who is engaged in student government activities, volunteer positions, is active during classes, and maintains a relatively stable GPA. Participant two is a female introvert who is extremely shy and doesn't like to appear in the spotlight. This student is not highly engaged in any additional activities and pays little attention to her GPA rate. Participant three is a male extrovert who is active during classes, participates in volunteering positions and college clubs, and maintains an average GPA rate. What all these students have in common is the university they're attending. This set of participants are RIT Croatia's students from the senior year of 2021.

The second set of participants are IT students who have engaged in virtual teams. Participant one is a female extrovert who is a workaholic and spends the majority of her time on campus. This student is highly engaged in every in and out college activity and maintains an above-average GPA rate. Participant two is a male introvert who is highly engaged, yet an introverted student. He maintains his GPA rate above average and fits the mould of the student that you go for help once you have technical difficulties. Participant three is a female foreign introvert

who also spends the majority of her time on campus studying. She is involved in some extra curriculums and activities, but her introversion is limiting her to initiate interactions with other students. This student maintains an average GPA rate. These participants share the same university background as they are RIT Croatia's junior students who are studying IT and therefore are constantly exposed to virtual teaming.

Focus group three is composed of two participants. Participant one is a female extrovert who has been working in virtual teams for eleven years. She is an open-minded ambitious young woman who knows her full potential. Participant two is a male extrovert who has been working in virtual teams for a consultancy company for five years and then created his own company where he is the CEO for three years and still operates in some virtual teams. These people share the same background which is working in consultancy companies under virtual team conditions and are in the same demographic which is middle-aged professional individuals who are also RIT Croatia's alumni.

The variety of gender, personality types, demographics and virtual team involvement (check abbreviations, Table 1.1) will allow the researcher to develop a full picture of different individuals. These participants were chosen in such a manner to represent different types of employees and work habits, so the researcher can determine if some of these dynamic factors vary from individual to individual.

## **Instrument**

The instrument questions were conducted in a stimulating way for a productive discussion among the participants. Figure 1.2. shows how questions were conducted within different categories for a smoother transition among the questions. Category one allows the participants to start the focus group with a small talk about their experience in a virtual team environment. These easy questions will allow the participants to get to know each other's backgrounds and create an overall positive sharing environment. The discussion around the general terms of a virtual team will provide the audience to prepare to discuss further the topic. Category two shifts the conversation to another level – dynamic factors. Trust, satisfaction, communication effectiveness. Category three-team cohesion covers all mentioned factors from category two with an emphasis on team cohesion and it allows additional room for commentary from participants who maybe lost their thought or remembered some additional information that could contribute. Category four is "Imagine situations" which interestingly revolve around conflict-resolution and leadership potential to keep the participants' level of interest high. The

last category or so-called category five invokes the participants to share from their working experience whether or not virtual teams will become a more practiced way of operating as compared to the co-located (traditional) one.

## **Results**

The results of the three designated focus groups are divided by the five categories visible within the instrument figure (Table 1.2) and the overall result score in Table 1.3 and Table 1.4

### **Category one – Experience with Virtual teams**

Since participants were chosen by the amount of experience they have in virtual teams, instrument questions regarding this category were rather small talk stimulants to break the ice. These questions enabled the participants to get to know each other's experiences so they can create a safe environment for information sharing. The focus group one had the majority of their virtual experience back in their freshman year when prof. Agušaj tried to expand his class to an international collaboration between the RIT campus in Dubrovnik and the main one in Rochester. Focus group two has more relevant experience as opposed to focus group one because the majority of work, the IT students do, is an extension of virtual teams. They mostly collaborate with the RIT Zagreb campus and are getting trained in how to behave within the virtual team. Focus group three has the most experience as these are industry professionals who have been working in these conditions for a decade. The overall experience with virtual teams was extremely negative for the participant two female introverts from focus group 1 while other participants described their dissatisfaction with virtual teams in their inability to establish stable communication. Focus group two was well informed and educated about the topic of virtual teams, so they automatically knew issues virtual teams face are a result of its instability in the structure. Focus group three as mentioned is conducted by virtual team professionals who explained their positions in a detailed matter.

The information such as which company they worked for and for how long was of little relevance for the research itself because the researcher, as already stated needed this information to decide whether or not these participants were competent for the purpose of the focus group.

### **Category two – VT dynamics factors of success**

Focus group one addressed the importance of trust, satisfaction, and communication effectiveness but didn't manage to maintain it within their own experience. "It's a two-way

street, if you gave your maximum efforts to establish trust from your part, you can't make the other party do the same" (Male extrovert FG.1) "It was hard for me to realize, hey not everybody will be concerned about this project as much as you are, not everybody will be willing to give up as much time, even though those are their work hours." (Female introvert FG.1) The discussion of trust within focus group one heated up because these students were focused on pointing out their dissatisfaction with the amount of effort contributed. However, all participants within the focus group one agreed that virtual teams' dynamic factors as trust, satisfaction, and communication effectiveness are significantly correlated and necessary to maintain a virtual team's dynamic success. On contrary, the focus group two was more flexible in terms of understanding how to trust as a factor of virtual team dynamic works. "You have to dive into it blindly." (Male extrovert FG.2) "... if I'm going to work with somebody my initial trust will maybe be higher than other people would have for somebody their meeting, for the first time." (Female extrovert, FG2) "... most cases my initial trust always ends up being the highest among the group, compared to others.... diminishes my satisfaction." (Female introvert, FG. 2) Focus group three argued that the virtual team dynamic is not very different from the co-located (traditional) ones. Both participants stated that once the project starts you get to pick up your team's characteristics, skills, appearance, and professionalism. These people are already accustomed to virtual teamwork and therefore know how to behave and what to expect. "After a first few years in virtual teams you start catching up on details of a person's way of communicating, I'm now referring to the time before the pandemic where people mostly used email and skype, how agile, professional fast, engaged, honest these teammates are." (Male extrovert, FG 3) Over the years, female participants within focus group three said that she learned how to control her stress levels due to her dissatisfaction with teammates being disengaged. Aside from that, she also mentioned that sometimes trust issues can be caused by the superior's lack of information sharing which affected the overall team's project progress and that sometimes factors like these are uncontrollable. The most crucial part the team has to play, according to the female extrovert from focus group three, is learning how to continue with the project despite all the challenges you and the team face. "You can't avoid these factors, sooner or later your team will.... communicate and overall trust each other,...putting professionalism above all." (Female extrovert, FG. 3) "These factors that university textbooks suggest, in the real world are exceptions and if you ever stumble upon people like that, in most cases...excited to work with this person!" (Male extrovert, FG. 3) "...you get to assess different patterns of behaviour to different profiles and in case you recognize the repeatable pattern people who slack off have, you can determine it within the

week” (Male extrovert, FG. 3) “I love conflicts at work, in a sense of an opinion conflict. I love hearing other people’s views because I have an opportunity to get out of my comfort zone reevaluating other perspectives” (Female extrovert, FG.3)

### **Category three – Team cohesion in VT**

Team cohesion is considered as the major factor that influences the overall virtual team’s dynamic according to all three focus groups. The focus group debated about how team cohesion cannot be achieved if all factors like trust, communication, effectiveness, engagement, and the team’s overall will to finish that project isn’t set already. Focus group one made a clear point that team cohesion can be achieved if all parties play their part right. Along the lines that indicate team dynamic students within the focus group, one highlighted the leader’s position and impact on the overall team cohesion. “I believe that team cohesion can be established if everybody does their part on time, but it would require a lot of effort for a team to self-manage, which is why I believe that leaders and project managers play a big part in this factor.” (Male extrovert, FG. 1) Focus group two mainly discussed how hard establishing team cohesion is due to different individualistic approaches that can cause a clash between who’s way is better. Besides that, focus group two considers team cohesion as an extension of respect and trust teams should have for each other from the start and therefore believe that these factors are hard to build and maintain in a positive manner, but extremely easy to destroy.

“...it would be a challenge, especially when you don't know those people... have to get used to the certain methods of work they have. During that initial period where the project is just starting and the teamwork is coming together, is the most crucial part of that team cohesion... compared to actual face-to-face cohesion where team cohesion can be established easier once you meet everybody in-person, in a big room, you dedicate those two hours on figuring out task roles and your team, is I believe a part of a workplace environment that lacks when you're working virtually, or at least takes a lot of time to reach that point, of course from my experience.” (Male extrovert FG.2) “Everyone has their schedule, their own way they do things. Whether or not you work virtually or if you're in person, you have set work hours and a task list. There's no I'll do it later, oh I'm not in the mood now, because you're getting paid to do it in these hours. Some people are used to getting everything done immediately some prefer getting it done with time left to spare before the deadline and some just say oh no I work better under pressure and then leave it to the end. (Female introvert, FG 2)

Focus group three had a different debate as opposed to the focus group one and two. This group discussed how the expectation levels are never met, and the college textbooks on “how to effectively” are a rare case in the real world. Focus group three stated that there is no big difference between team cohesion in co-located and virtual teams because people have specific patterns within their behaviour, which would with experience be easily determined and categorized. “... these examples that we learned in college about how to, are rare to witness once you are in the real world. I’ve stumbled upon some terribly stubborn and arrogant people in my life but very few true professionals with which I’ve had an amazing team dynamic experience as opposed with the other ones.” (Male extrovert, FG. 3) “I’ve learned that trying to fix everything is only sometimes making it worse, so over my experience, I’ve learned to know my limitations and sometimes that a simple “No” is a “No”, and no matter if you believe that something else should be done, it’s their final decision and you can’t do anything about it.” (Female extrovert, FG. 3) “I believe that every team should strive towards cohesion because it makes tasks easier for everyone to accomplish. You may dislike someone privately, but those two matters shouldn’t be mixed in the professional world.” (Female extrovert, FG. 3)

#### **Category four – Imagine situations / Problem-solving situations**

Situations within this section are questions that mostly imagined situations where participants had to answer by stepping into someone else’s shoes. The situations revolve around leadership, conflict, and problem-solving skills. The purpose of these questions is to put them in a position where they would have to strategize their response.

The focus group one, two, and three responded similarly. The answers revolved around taking the responsibility on your back and delivering something rather than nothing, along, of course, running around searching for a stable network connection and the most popular one – panicking while trying to call the rest of the team to figure what to do. Most of these answers indicate parts of transformational leadership and effective conflict-resolution skills these participants have. “In case of a complete network collapse I would run across every coffee searching for a stable connection to inform my team of a situation” (Female, extrovert FG. 1) “I don’t know, I guess I would panic, and then try to call the rest of the team to figure out how are we going to continue on with the project.” (Female introvert, FG 1) “It depends on what kind of project it is, if it’s something that really has to go into production or has to be delivered to a client it’s absolutely, without a doubt, the best way to try to just do as much as you can on your own, or at least as far as you’re willing to go.” (Female extrovert FG 2) “I wish I could give a more



confident answer, but if I'm going to be honest with myself. I would probably panic, and I wouldn't exactly react very well to the situation, I'd be more frustrated but still try and rush as much of the code through as possible" (Male extrovert FG 2) "We have all been in such situations (laughs), and while I'm thinking about what to answer to you, so many uncomfortable situations I've been caught up, pop inside my mind now, but I guess all these sticky situations revolve around me pushing my limits and working double because that's just a type of a person I am." (Female extrovert FG. 3) "It happened to me at least ten times by now throughout my career, that I had to wiggle my way out of the sticky situation that was caused by a factor I can't have any control over. My company recognized this pattern because it was a constant problem they have been dealing with, .... a big impact on the overall company's reputation because due to projects being late, unfinished and the majority of excuses were network related. In order to solve that issue the company bought servers that could handle up to 2 or 3 days of internet network in case the one you're using collapses." (Male extrovert, FG. 3)

#### **Category five – The future of VT**

The last category relates to the future application of virtual teams. Whether or not virtual teams will be practiced more than co-located ones is an opinion-based question where participants got the opportunity to express their thoughts and ideas.

The focus group one isn't accustomed to virtual teamwork but overall does agree upon the fact that virtual teams will become a more practiced way of operating due to its cost-effectiveness and competent workforce. Although these three students disclaimed that they prefer traditional teamwork more they all agreed that virtual teams could become a new modern way of operating. "I don't want to say that virtual teams are badly formed, just because I had one negative experience, but I believe there is still much more to improve on" (Female introvert, FG1) "Virtual teams have proven useful in this time of pandemic for many businesses and therefore I believe that their expansion in use will become higher over time, but again people are social beings and because of that are a bit reluctant I would say, over the fact that within the next decade traditional way of operating could become less applied." (Male extrovert, FG. 1) "Honestly, whenever we speak about technology and its effects on the overall society I think of that Orwell's book "1984" which predicted this big Brave New World, that I believe we're on our way to experience fully and because of all other factors that have been influencing our

society I think that virtual teams have good prosperity for further expansion” (Female extrovert, FG 1)

Focus group two has similar answers to focus group one, where the IT students stated how people still don’t prefer the thought of working virtually due to its impracticality ineffective communication flows. Besides that, students claimed that from their experience, people prefer in-person interactions for many reasons and aren’t easily accustomed to a new approach. “It’s easier when you have a person right next to you, you can immediately go and ask them...could you look over my code...you don’t have to wait or rely on their frequency of checking emails or frequency of checking texts and sometimes it’s easier to just explain something in-person, with your own words as opposed to an email.” (Female introvert FG. 2) “I think companies are going to prefer the virtual teams, because now, it costs the company a lot less and they don’t have to rent outbuilding space for offices... from a company’s perspective they’ll probably opt for the virtual world, but personally I prefer the traditional, in-person one.” (Female extrovert, FG.2) “The virtual team hasn’t developed to its full potential and therefore face-to-face teams are something that is preferred...I believe that companies will apply more virtual teams in the future because they are cost-effective.” (Male extrovert, FG. 2)

“Since my only experience is virtual so far, I’d say that people get accustomed to this way in a short time period and make it work. You can still see what type of a teammate you have by the way they interact with you...three out of five teams I have worked with so far were cohesive and engaged, while the remaining two were very slow, disengaged, and had very little interest in communicating effectively with the rest of the team.” (Female introvert, FG. 2)

Focus group three immediately stated that they believe the future application of virtual teams will increase because companies get to spend less money on a workforce that is equally capable of achieving goals like the co-located one. “Bottom line is that virtual teams are a better alternative for the company because... number of offices will definitely shrink.... I personally believe that offices that we’re used to now, won’t be practiced anymore... flying desks will be popularised and working from home or office will be just a matter of preference in the future.” (Female extrovert FG. 3) This pandemic has forced many businesses to realize how effective virtual work is and I believe it’s going to be hard for us to just switch back to the way it was before and I don’t think we will ever return to that point” (Female extrovert FG. 3)

## Discussion

The purpose of this study was to gain a better understanding of virtual team dynamics. The definition of virtual teams has been an ongoing debate within both secondary and primary research as some virtual teams allow different business approaches that cause term ambiguity. Virtual teams are mostly defined through challenges they face like time difference or intercultural communication or unfamiliarity of teammates' work styles or global dispersion due to virtual teamwork's purpose to expand in international markets. During the research on a given topic, the researcher came across numerous confusions among the remote work that has been rising for the past two years as a product of necessity and virtual teamwork that has been a department from the 1960s. The author believes that the current transition from in-person to online has made its effect on the topic of virtual teamwork and has been potential causation of the term's misunderstanding due to its miss usage. Nowadays, due to the sudden rise in virtual activities and remote work, it is important to distinguish that virtual team operates on an unshared location, meaning that the team is scattered internationally in order to expand at a cost-effective price for an equally high-quality product.

The results of the present study support the hypothesis that virtual teams can't perform effectively without mentioned six factors known as trust, team cohesion, communication effectiveness, satisfaction, conflict, and leadership due to their large influence over the virtual team dynamic. As the table below (Check, abbreviations Table 1.4) indicates seven out of eight participants confirm the given hypothesis. Furthermore, maintaining a virtual team's dynamic is more challenging as compared to the traditional face-to-face one was also affirmed by seven out of eight participants resulting in 87% hypothesis affirmation.

There are five key categories of the presented results that break down the hypothesis on several levels. The first few categories correlate among the mentioned six factors that influence the overall team dynamic. Trust, satisfaction, and communication effectiveness were stated important factors that have an immense impact on the virtual team dynamic. Overall, every participant agreed with this statement. Participants were grouped in a specific manner (gender, personality type, demographics, and virtual team involvement) which gave the researcher interesting insight into different individualistic approaches. The difference among these three groups was visible, as students had more technical answers as opposed to the focus group three where experienced professionals stated and supported their answers. This idea is further supported by team cohesion. Only one participant (Female introvert, FG. 2) finds team

cohesion an unnecessary factor for virtual team success because according to her, the team will get the job done either way. She justified her answer that in most cases the team we expect to work with doesn't meet the expatiation level we initially have and therefore sometimes, no matter how much we try to balance our team out, it just doesn't prove to be effective. What the researcher concluded after trying to get the participant to elaborate more on her answer is that the project outcome and team satisfaction within her teams were relatively low and a huge issue that was impacting the overall team's performance, which also ultimately confirms that these mentioned six factors are correlated and do have an impact on the virtual team dynamic. The rest of the participants replied cohesively along the same lines that team cohesion is a crucial factor that impacts the virtual team dynamic. Conflict and leadership categories were an interesting part to the researcher as the clash of opinions always provides an in-depth analysis of how different individuals approach different things. Interestingly, the results for the conflict situations in virtual teams revolve around answers that were either appreciative of conflicts at work for personal growth or towards the agreeable side where they try to avoid them. The difference in replying among these three groups can be noticed since the focus group one and two again had more technical answers that were more on the agreeable and flexible side, while focus group three appreciated conflicts as a factor of personal growth. However, leadership is confirmed to be more demanding as opposed to the traditional in-person one. One participant disagreed, and it is the same female introvert, FG 2 participant who has previously stated that team cohesion isn't a crucial factor for the virtual team dynamic. Taken together, findings do indicate that without the mentioned six factors virtual team dynamic is easily lost and disrupted which can ultimately leave a mark on the project quality.

### **Implication**

What we can conclude from both primary and secondary research is that the sudden rise in virtual teams opens up new market opportunities. The results for virtual team dynamics are useful for both corporations and employees. This research supports factors influencing virtual team's dynamic for both corporations and employees. The benefits corporations are experiencing with virtual teamwork revolve around fewer physical facilities rented, lower wage cost due to international wage standards, and as equal labour quality. The reduction in resources used, allows corporations to cut down their expenses and direct their revenue streams in the direction they believe needs it the most, therefore enabling higher net income. It is also important to elaborate that benefits received are a two-way street meaning that the employees

within virtual teams benefit with the freedom of personal time by setting their own working hours, and stable salary.

The idea behind corporations on virtual teams as both primary and secondary research suggests is the cost-effective workforce that is highly competent and doesn't require a business facility to work under. Based on the research so far, employees who are interested in engaging in virtual teamwork have to be aware of all factors that are influencing the overall team dynamic, in order to be recognised as a potential virtual team operator. Companies that hire and conduct virtual teams will seek these qualifications in order to conduct a functional virtual team.

The results presented turned out quite surprising because the researcher has expected participants to be somewhat reluctant towards virtual teams but has received an opposite response. The results have provided supporting evidence for each hypothesis with a strong affirmation. This indicates that the use of technological platforms and transferring online wasn't a shock or discovery but rather a short adjustment that resulted in a rise of virtual teaming. The information conducted within this paper will allow students, employees, and companies around the world to understand the difficulty of leading, managing, and maintaining a virtual team dynamic. Moreover, the given results should be a helpful stimulate for individuals to break out of their old habits and learn how individual reliability impacts the overall project progress. After all, every company wants an effective, yet cost-effective approach that will allow them to reach the unattainable market point and because of that this study has stressed the magic formula for the effective virtual team dynamic.

### **Limitations**

Although the present results support all given hypotheses, one limitation of this study is that the sample size of the active focus groups could've been higher, but that is justified through the covid19 restrictions that unenabled participants to know their schedules in advance. It is also important to add that, RIT community has provided the researcher with the necessary skills to handle given research professionally and maturely, and therefore limit the limitations.

### **Future research**

Thanks to the big covid19 pandemic the transition online hasn't been a big fuss for the living population. People already had some skill for technology usage and therefore unconsciously opened up a new market for further research. Despite these limitations, the present study has enhanced our relationship and understanding of the virtual team dynamics. The future for

virtual teams looks promising due to its cost-effectiveness, which could be a potential topic for itself. Cost-effectiveness factors and challenges companies face when forming a virtual team. The author claims that the topic of virtual teams has plenty of research material. One of the most interesting things is the activity team-building exercises in virtual teams. They are well put and transform so much so that the topic of transmitting performance booster activities could be potential research too. Additional topic that has a large demand for is, the transformational leadership within virtual teams as the traditional in-person leadership is slowly fading out due to an increased demand for leaders who are observant, attentive, cautious, and able to recognize the patterns that might cause troubles to the overall team dynamic.

Despite these limitations, the present study has enhanced our understanding of virtual teams and the relationship of virtual team dynamic. The researcher hopes that the current research will stimulate further investigation of this important area that has been rising for the past two years and help potential employees to personally prepare before engaging in such work. Aside from that the researcher has listed numerous benefits for corporations to consider if somewhere in the future they decide on implementing virtual teams. Our current market situation indicates an abrupt rise in virtual team department and therefore it is important to know how to contribute or conduct effectively these teams.

## References

- Alavi, M., & Tiwana, A. (2002). Knowledge integration in virtual teams: The potential role of KMS. *Journal of the American Society for Information Science and Technology*, 53(12), 1029-1037
- Ayoko, O.B., Konrad, A.M., & Boyle, M.V. (2012). Online work: Managing conflict and emotions for performance in virtual teams. *European Management Journal*, 30(2), 156-174.
- Baan, A. (2004). Personal communication regarding virtual teams at Royal Dutch Shell and other companies.
- Bastida, R., Gupta, H., & Wingreen, S.C. (2013). A comparative study of the effect of blogs and email on virtual team performance. Paper presented at the Proceedings of the 17th Pacific Asia Conference on Information Systems, Jeju Island, South Korea.
- Bjorn, P., & Ngwenyama, O. (2009). Virtual team collaboration: building shared meaning, resolving breakdowns and creating translucence. *Information Systems Journal*, 19, 227-253.
- Boon, S.D., & Holmes, J.G. (1991). The dynamics of interpersonal trust: resolving uncertainty in the face of risk. In Hinde, R.A. & Groebel, J. (Eds.), *Cooperation and Prosocial Behavior* (pp. 190-211), Cambridge: Cambridge University Press.
- Brown, H.G., Poole, M.S., & Rodgers, T.L. (2004). Interpersonal traits, complementarity, and trust in virtual collaboration. *Journal of Management Information Systems*, 20(4), 115-128.
- Brown, M.K., Huettner, B., & James-Tanny, C. (2007). *Managing virtual teams: Getting the most from Wikis, Blogs, and Other Collaborative Tools*. Wordware Publishing Inc., Sudbury, MA.
- Bryant, A., & Charmaz, K. (Eds.). (2007). *The SAGE handbook of grounded theory*. SAGE Publications.
- Canney Davison, S., & Ekelund, B.Z. (2004). Effective team process for global teams. In H.W. Lane, M.L. Maznevski, M.E. Medenhall & J. McNett. (Eds.), *The Blackwell handbook of global management: a guide to managing complexity* (pp. 227-249). Oxford: Blackwell Publishers.
- Carron, A. V., & Brawley, L. R. (2012). Cohesion Conceptual and Measurement Issues. *Small Group Research*, 43(6), 726-743.

- Carmel, E. (2002). Global software teams: opportunities and challenges of technology-enabled work. *Perspectives on Work*, 6(2), 6-8.
- Carvalho, M.M., (2008). Communication issues in projects management. In Portland International Conference on Management of Engineering & Technology, 1280-1284.
- Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). SAGE Publications.
- Cummings, L. L., & Bromiley, P. (1996). The Organizational trust inventory (OTI): development and validation. In Kramer, R.M. and Tyler, T.R. (Eds.), *Trust in Organisations: Frontiers of Theory and Research* (pp. 302-331), Thousand Oaks, CA: Sage
- Curseu, P.L., Schalk, R., & Wessel, I. (2008). How do virtual teams process information? A literature review and implications for management. *Journal of Managerial Psychology*, 23(6), 628-652.
- Daim, T.U., Reutiman, H.A., Hughes, S., Pathak, B., Bynum, U.W., & Bhatla, A. (2012). Exploring the communication breakdown in global virtual teams. *International Journal of Project Management*, 30(2), 199-212
- Davison, S.C., Hambrick, D.C., Snell, S.A., & Snow, C.C. (1996). Use transnational teams to globalise your company, *Organizational Dynamics*, 50-67.
- Denzin, N. K., & Lincoln, Y. S. (Eds.). (2011). *The SAGE handbook of qualitative research* (4th ed.). SAGE
- Druskat, V.U., & Wolff, S.B. (2001). Building the emotional intelligence of groups. *Harvard Business Review*, 79, 80-91.
- Furst, S.A., Reeves. M., Rosen, B., & Blackburn, R.R. (2004). Managing the life cycle of virtual teams. *Academy of management Review*, 18(2), 6-20
- Ferrazzi, K. (2012). Retrieved from [http://blogs.hbr.org/cs/2012/11/how\\_to\\_manage\\_conflict\\_in\\_virt.html](http://blogs.hbr.org/cs/2012/11/how_to_manage_conflict_in_virt.html)
- Gaudes, A., Hamilton-Bogart, B., Marsh, S., & Robinson, H. (2007). A Framework for Constructing Effective Virtual Teams. *The Journal of E-working*, 1, 83-97
- Griffith, T.L., Mannix, E.A., & Neale, M.A. (2003). Conflicts and virtual teams. In Gibson, C.B., & Cohen, S.G. (Eds.) *Virtual Teams that Work: Creating conditions for virtual team effectiveness*, San Francisco, CA: Jossey-Bass.



- Greenberg, P.S., Greenberg, R.H., & Antonucci, Y.L. (2007). Creating and sustaining trust in Virtual teams. *Business Horizons*, 50(4), 325-333.
- Jarvenpaa, S.L., & Leidner, D.E. (1998). Communication and Trust in Global Virtual Teams. *Journal of Computer-Mediated Communication*, 3(4).
- Jarvenpaa, S. L., Shaw, T. R., & Staples, D. S. (2004). Toward contextualized theories of trust: The role of trust in global virtual teams. *Information systems research*, 15(3), 250-267
- Joinson, C. (2002). Managing virtual teams. *HR Magazine*, 47(6), 68-73.
- Kanawattanachai, P., & Yoo, Y. (2002). Dynamic nature of trust in virtual teams. *Journal of Strategic Information Systems*, 11, 187-213.
- Kankanhalli, A., Tan, B.C.Y, & Wei, K. (2006). Conflict and Performance in Global Virtual Teams. *Journal of Management information Systems*, 23(3), 237-274.
- Katzenback, J.R., & Smith, D.K. (2004). *The Wisdom of Teams: Creating High-Performance Organization*. Harvard Business Press.
- Kirkman, B.L., & Mathieu, J.E. (2005). The Dimensions and Antecedents of Team Virtuality. *Journal of Management*, 31(5), 700-718.
- Kužnin, M. (2019) *Leadership (course)*, Rochester Institute of Technology.
- Kirkman, B. L., Rosen, B., Gibson, C. B., Tesluk, P. E., & McPherson, S. O. (2002). Five challenges to virtual team success: Lessons from Sabre, Inc. *Academy of Management Executive*, 16, 67-79.
- Leinonen, P., Jarvela, S., & Hakkinen, P. (2005). Conceptualizing the Awareness of Collaboration: A Qualitative Study of a Global Virtual Team. *Computer Supported Cooperative Work*, 14, 301-322
- Lema, C. (2012). *Building & Managing Virtual Teams: Five ways to Create a High-Performance Culture for Remote Workers* (1st ed.).
- Lewis, K. (2003). Measuring Transactive Memory Systems in the Field: Scale Development and Validation. *Journal of Applied Psychology*, 88(4), 587-604
- Lin, C., Standing, C., & Liu, Y.C. (2008). A model to develop effective virtual teams. *Decision Support Systems*, 45(4), 1031-1045.

- Hambley, L.A., O'Neill, T.A., & Kline, T.J.B. (2007). Virtual Team Leadership: The effects of leadership style and communication medium on team interaction styles and outcomes. *Organization Behaviour and Human Decision Processes*, 103(1), 1-20.
- Henttonen, K., & Blomqvist, K. (2005). Managing distance in a global virtual team: The evolution of trust through technology-mediated relational communication. *Strategic Change*, 14, 107-119
- Hinds, P., & Mortensen, M. (2005) Understanding conflict in geographical distributed teams: the moderating effects of shared identity, shared context, and spontaneous communication. *Organization Science*, 16, 290-307.
- Horwitz, F.M., Bravington, D., & Silvis, U. (2006). The promise of virtual teams: identifying key factors in effectiveness and failure. *Journal of European Industrial Training*, 30(6), 472-494.
- Malhotra, A., Majchrzak, A., & Rosen, B. (2007). Leading Virtual Teams. *Academy of Management perspectives*, 21(1), 60-70.
- Mason, C. M., & Griffin, M. A. (2002). Group task satisfaction: Applying the construct of job satisfaction to groups. *Small Group Research*, 33, 271-312.
- Maznevski, M. L. (1994a). Synergy and performance in multicultural teams (Doctoral dissertation). Available from University of Western Ontario, London, Canada.
- Maznevski, M.L., & Chudoba, K.M. (2000). Bridging Space Over Time: Global Virtual Team Dynamics and Effectiveness. *Organization Science*, 11(5), 473-492
- Maznevski, M., Davison, S.C., & Jonsen, K. (2006). Global virtual team dynamics and effectiveness. In Stahl, G.K., & Bjorkman, I. (Eds.), *Handbook of Research in International Human Resource Management*. Massachusetts, USA: Edward Elgar.
- McAllister, D. J. (1995). Affect-and cognition-based trust as foundations for interpersonal co-operation in organisations. *Academy of Management Journal*, 38(1), 24-59
- McKinsey & Company. (2013). Retrieved from <http://www.mckinsey.com/>
- Meindl, J.R. (1993) Reinventing Leadership: A Radical, Social Psychological Approach. In J. K. Murnighan (Ed.), *Social Psychology in Organizations* (pp. 89-118). Englewood Cliffs, NJ: Prentice Hall.

- Minton-Eversole T. (2012) Virtual Teams Used Most by Global Organizations, Survey Says; Organisational & Employee Development; SHRM
- Misiolek, N.I., & Heckman, R. (2005). Patterns of Emergent Leadership in Virtual Teams. Paper presented at the Proceedings of the Hawaii International Conference on System Sciences, Hawaii
- Montoya-Weiss, M.M., Massey, A.P., & Song, M. (2001). Getting it Together: Temporal Coordination and Conflict Management in Virtual Teams. *Academy of Management Journal*, 44(6), 1251-1262.
- Myers, S. P. (2013). Definition of Team Dynamics. Retrieved from <http://www.teamtechnology.co.uk/team/dynamics/definition/>
- Nunamaker, J.F., Romano, N.C., Briggs, R.O. (2003). A collaborative project management architecture. Paper presented at the Proceedings of the 36<sup>th</sup> Annual Hawaii International Conference on System Sciences, Hawaii, USA.
- Paul, D.L., & McDaniel, Jr. R. R. (2004). A field study of the effect of interpersonal trust on virtual collaborative relationship performance. *MIS Quarterly*, 28(2), 183-227)
- Pauleen, D.J., & Yoong, P. (2001). Facilitating virtual team relationships via Internet and conventional communication channels. *Internet Research*, 11(3), 190-202.
- Paulene, D.J. (2004). An Inductively Derived Model of Leader-Initiated Relationship Building with Virtual Team Members. *Journal of Management Information Systems*, 20(3), 227-256.
- Peters, L., & Karren, R.J. (2009). An Examination of the Roles of Trust and Functional Diversity on Virtual Team Performance Ratings. *Group Organization and Management*, 34(4), 479-504.
- Peters, L.M., & Manz, C.C. (2007). Identifying antecedents of virtual team collaboration. *Team Performance Management*, 13, 117-129
- Rahim, M. A. (2010). *Managing conflict in organizations*(4thed.). New Brunswick: Transaction Publishers.
- Rosen, B., Furst, S., & Blackburn, R. (2007). Overcoming Barriers to Knowledge Sharing in Virtual Teams. *Organizational Dynamics*, 36(3), 259-273

- Schmidt, K., & Bannon, L. (1992) Taking CSCW seriously: supporting articulation work. *Computer Supported Cooperative Work (CSCW): An International Journal*, 1, 7–40.
- Shachaf, P. (2008). Cultural diversity and information and communication technology impacts on global virtual teams: An exploratory study. *Information and Management*, 45(2), 131-142.
- Shirani, A. (2000). Performance of Virtual Teams in Globally distributed Software Development
- Smits, N. (2005). Virtual teamwork in an international environment. *Convergence*, 64-77
- Sivunen, A., & Valo, M. (2006). Team Leaders' Technology Choice in virtual Teams. *IEEE Transactions on Professional Communication*, 49(1), 57-68.
- Tuffley, D. (2012). Optimizing virtual team leadership in Global Software Development. *IET Software*, 6(3), 176-184
- Watson, W. E., Kumar, K., Michaelsen, L. K. (1993). Cultural diversity's impact on interaction process and performance: Comparing homogeneous and diverse task groups. *Academy of Management Journal*, 36(3), 590–602.
- Zaleznik, A. (2004). Managers and leaders. *Harvard Business Review*, 1.

## Abbreviations

Focus Group 1	personality type	gender	demographics	virtual team involvement
Participant one	extrovert	F	young adult (RIT senior student)	YES (low)
Participant two	extrovert	M	young adult (RIT senior student)	YES (low)
Participant three	introvert	F	young adult (RIT senior student)	YES (low)

Focus Group 2	personality type	gender	demographics	virtual team involvement
Participant one	extrovert	F	young adult (RIT junior student)	YES (medium)
Participant two	extrovert	M	young adult (RIT junior student)	YES (medium)
Participant three	introvert	F	young adult (RIT junior student)	YES (medium)

Focus Group 3	personality type	gender	demographics	virtual team involvement
Participant one	extrovert	F	Adult (consult. comp. employee)	YES (high)
Participant two	extrovert	M	Adult (former cons. comp.employee, CEO)	YES (high)

*Low- involvement in VT for a year or less than a year*

*Medium- involvement in VT for at least one year - up to 5 years*

*High - involvement in VT for at least 5 years or more*

**Table 1.1**

<b>Instrument</b>
<b>Category one – Experience with VT</b>
Have you ever been assigned to a group with people you have never encountered or worked professionally, globally dispersed therefore having technology as their primary communication tool?
If yes, could you describe some of your experiences: What did you enjoy the most? What were some challenges along the way?
<b>Category two – VT dynamics factors of success</b>
How crucial do you consider trust is within virtual teams compared to the face-to-face ones?
Could you describe any relevant experiences you had regarding trust in your virtual team?
<b>Category three – Team cohesion in VT</b>
Team cohesion is defined as team's ability to stick together and remain united. From your experience, is team cohesion in virtual teams more or less challenging than in the co-located (face-to-face) ones?
<b>Category four – Imagine / Conflict-resolution situations</b>
Imagine that you're a virtual team leader (project manager) and you've been put in a situation where one of your virtual teammates can't be reached for the last three days, and with the project deadline due tonight, what would you do?
In case of a complete network collapse for a couple of days, how would you approach your virtual team once your delivery deadline approaches and your project is far behind?
<b>Category five – Future of VT</b>
From your experience, what do you believe is more preferred groupwork virtual or face-to-face one?

**Table 1.2**

		Result	Result
		Affirmed	Rejected
Main claims:	Maintaining virtual team's dynamic is more challenging compared to the traditional face-to-face teams	x	
	Virtual teams can't perform effectively without six factors influencing virtual team dynamics.	x	
Instrument	Trust is among other factors considered to have immense influence over the virtual team dynamic	x	
	Satisfaction and communication effectiveness along with other factors are inevitable for virtual team performance	x	
	Team cohesion is crucial	x	
	Conflict within virtual teams is challenging, but beneficial for the virtual team dynamic.	x	
	Leadership in a virtual team is more demanding as opposed to face-to-face.	x	
	Leadership is an important factor along with other factors that directly influences the overall virtual team's performance.	x	

**Table 1.3**

		%	#PARTICIPANTS' AGREEMENT
Main claims:	Maintaining virtual team's dynamic is more challenging compared to the traditional face-to-face teams	87%	7/8
	Virtual teams can't perform effectively without six factors influencing virtual team dynamics.	87%	7/8
Instrument	Trust is among other factors considered to have immense influence over the virtual team dynamic	100%	8/8
	Satisfaction and communication effectiveness along with other factors are inevitable for virtual team performance	100%	8/8
	Team cohesion is crucial	87%	7/8
	Conflict within virtual teams is challenging, but beneficial for the virtual team dynamic.	63%	5/8
	Leadership in a virtual team is more demanding as opposed to face-to-face.	87%	7/8
	Leadership is an important factor along with other factors that directly influences the overall virtual team's performance.	87%	7/8

**Table 1.4**