

# Collaborative Distance: A Framework for Distance Factors Affecting the Performance of Distributed Collaboration

*Marc Pallot, Nottingham University, UK*

*Maria Antonia Martínez-Carreras, University of Murcia, Spain*

*Wolfgang Prinz, Fraunhofer FIT and RWTH Aachen University, Germany*

---

## ABSTRACT

*This paper introduces the topic of “Collaborative Distance” within Distributed Collaboration as being an introduction to this Special Issue on Collaborative Working Environments<sup>1</sup> (CWE). In this paper, the authors discuss various related concepts, identified during an extensive literature review, on both proximity and distance in distributed collaboration. Then, a Collaborative Distance Framework (CDF) is proposed in deriving its four dimensions and related factors from the existing body of knowledge. The following section discusses the interest of such a CDF and introduces the articles published in this special issue. The concluding section discusses the articles’ contributions, limitations and future work as well as recommendations for future research in this area.*

**Keywords:** *Collaborative Distance (CD), Collaborative Distance Framework (CDF), Collaborative Working Environments (CWE), Computer Support for Cooperative Work (CSCW), Distributed Knowledge Management (DKM), eCollaboration, Inter-Organizational Collaboration (IOC)*

---

## INTRODUCTION

Currently, working patterns are becoming extremely complex due to the wide range of collaborative activities and large number of involved stakeholders, most of them having a specific discipline and expertise, and also due to the virtualization of the workplace (Pallot, 2005). As business is becoming more global and broadband connections are increasingly

becoming available, there are more and more individuals embracing flexible working and benefiting from its multiple advantages (Puybaraud, 2005). A study on the future of work, carried out by Morello and Burton, highlights a clear trend towards a decrease in working alone and team working within the same time and same place configurations while team working within different place and different time as well as same time and different place configurations are increasing (Morello & Burton, 2006).

DOI: 10.4018/jec.2010040101

Lu and colleagues are also recognizing that both globalization effect and availability of advanced information technologies are fostering the trend of globally organized work, which in turn is promoting geographically dispersed teams, as being the main configuration style, within many organizations (Lu et al., 2005). They argue that geographical distance induces differences in time, language, culture, and organizational processes which are negatively impacting team coherence and work practices. They mention virtual work crossing space, time, organization, culture and media as characterized by the notion of discontinuity (Watson-Manheim et al., 2002).

When considering collaborative activities, it appears that distance between collaborating individuals is the most important aspect to be considered as it could either facilitate, in case of nearness or proximity, or impede, in case of farness, communication and social interaction. This is also confirmed by proxemics, the social use of space (Hall, 1966), when individuals are operating more than 30 meters away then they are not likely to collaborate so often (Kiesler & Cummings, 2002; Kraut et al., 2002; Bradner & Mark, 2002; Armstrong & Cole, 2002; Olson & Olson, 2001; Moon, 1999; Lipnack & Stamps, 1997; Allen, 1977; Latané et al., 1995). In the meantime, others were claiming that technologies are compressing geographical distance (Child et al., 2000) which means that the perception of distance becomes more subjective as long as people stay connected. A decade ago, the Information and Communication Technology (ICT) revolution was announced as well as the death of distance (Cairncross, 1997) while others were claiming later on that distance still matters in international business (Ghemawat, 2001; Goodall & Roberts, 2003). Even, the persistence of distance was openly questioned as firms go abroad while technology makes it possible to do business at a distance (Nachum & Zaheer, 2005). Nonetheless, there are number of issues still requiring additional attention for being able to overcome all distance factors. International collaboration projects bring in positive effects such as higher level of

creativity and innovation due to more diversity as well as reduced costs and lead-time in optimizing solutions based on partners' specific knowledge and core competencies (Pallot & Sandoval, 1998).

In contrast, it is argued that increasing the number of partners systematically leads to an exponential increase of management and integration overhead, which is impeding the global collaboration performance (Pallot & Hof, 1999). This effect is mentioned as being the collaboration paradox. Trade-off and decisions are often delayed because several partners are involved in the same business process while their infrastructures are neither compatible, nor interoperable. Furthermore, critical factors such as security, confidentiality, trust and confidence are leading to the "black-box" effect in operating solely in the group (Jones et al., 1999).

Cummings and Kiesler demonstrated, during a study on multidisciplinary collaborations, that geographically distributed collaboration has a negative impact on both effectiveness and efficiency due to faced difficulties in communication and coordination (Cummings & Kiesler, 2003). What do we know about distance factors that are affecting distributed collaboration performance?

It is most probably the right question to ask in order to understand the implications for technologies (Kraut et al., 2002) before to start exploring new ICT artifacts that could help to reach a higher performance during online collaboration. Unfortunately, the current research body lacks a holistic view and framework for capturing all the dimensions of distributed collaboration and its related distance factors to serve as a kind of universal Collaborative Distance Framework (CDF). This framework would prove to be useful for negating conceptual ambiguity, helping to disentangle relationships among distance factors, consolidating results of empirical studies for further researching in this area, and for better understanding the implication of distance factors. In fact, new ICT artifacts might be either creating more distance or at the opposite helping in bridging or compressing distance factors, hence having

30 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: [www.igi-global.com/article/collaborative-distance-framework-distance-factors/42100](http://www.igi-global.com/article/collaborative-distance-framework-distance-factors/42100)

## Related Content

---

### Action Research and its Use in E-Collaboration Inquiry

Ned Kock (2007). *Emerging e-Collaboration Concepts and Applications* (pp. 86-94). [www.irma-international.org/chapter/action-research-its-use-collaboration/10069](http://www.irma-international.org/chapter/action-research-its-use-collaboration/10069)

### Factors Enabling Communication-Based Collaboration in Interprofessional Healthcare Practice: A Case Study

Ramaraj Palanisamy and Jacques Verville (2015). *International Journal of e-Collaboration* (pp. 8-27). [www.irma-international.org/article/factors-enabling-communication-based-collaboration-in-interprofessional-healthcare-practice/121989](http://www.irma-international.org/article/factors-enabling-communication-based-collaboration-in-interprofessional-healthcare-practice/121989)

### Searching for Value in Researching the Adoption and Use of M-services

Craig Standing, Patricia McManus, Susan Standing and Heikki Karjalainen (2007). *International Journal of e-Collaboration* (pp. 16-30). [www.irma-international.org/article/searching-value-researching-adoption-use/1961](http://www.irma-international.org/article/searching-value-researching-adoption-use/1961)

### ICT-Based Solutions Supporting Energy Systems for Smart Cities

Wolfgang Loibl, Brigitte Bach, Gerhard Zucker, Giorgio Agugiaro, Peter Palensky, Ralf-Roman Schmidt, Daniele Basciotti and Helfried Brunner (2018). *E-Planning and Collaboration: Concepts, Methodologies, Tools, and Applications* (pp. 80-108). [www.irma-international.org/chapter/ict-based-solutions-supporting-energy-systems-for-smart-cities/206000](http://www.irma-international.org/chapter/ict-based-solutions-supporting-energy-systems-for-smart-cities/206000)

### An Analysis on E-Evaluation of Food Quality Traceability System

Liu Peng, Li Qiang, Liu Wen, Yuan Shanshan, Nian Yiyang, Dai Yue and Duan Min (2022). *International Journal of e-Collaboration* (pp. 1-17). [www.irma-international.org/article/an-analysis-on-e-evaluation-of-food-quality-traceability-system/307127](http://www.irma-international.org/article/an-analysis-on-e-evaluation-of-food-quality-traceability-system/307127)