INTRODUCTION
Over the last decade, the notion of contained systems has decreased significantly with the globalization of networks, systems and businesses of varying forms. With the increased scope of traditional networks comes a wealth of new opportunities for utilizing a more virtual presence in teamwork in order to facilitate distributed collaboration (DeMarc, Hendrickson, & Townsend, 1998).

For purposes of this research, the terms distributed collaboration and virtual teams will be used interchangeable to represent the aggregation of personnel in an organization for the accomplishment of a specific and designated task of prescribed and measurable duration at a distance. A systems approach is applied to a case study of distributed extreme programming teams.

This research focuses primarily on gaining an understanding of the issues faced in building a distributed software product development organization (virtual software development team).

METHODOLOGY
Firm X is a 30 year old publicly traded professional services firm. Over the course of last year, the firm has experienced a significant amount of turbulence. The organization is introducing further perturbations by developing horizontal service offerings that cut across existing virtual business groups. One of these groups will continue to develop the firm’s flagship credit and risk management system.

In addressing distributed collaboration environments in this firm and working towards a framework for understanding the issues and opportunities that such an exercise presents, the researcher will use an interpretive, nomothetic, case study approach which applies systems level framework analysis with a priori hypotheses.

The researcher is working to develop an initial framework on which to evaluate the efforts of the virtual team built upon the team dispersion work of Cummings and O’Leary (2002). Using the notion of isolation, the research will examine the impact of spatial dispersion in the virtual team on the use of special technologies for development. The unit of analysis is the entire virtual team at a professional services firm with the measurable outcomes being a comparison of the connectedness of the individual groups initially (prior to the horizontal group formation) and post group formation as determined by a representative group sample survey. The framework will further build on a combination of the Levitt Rhombus model and Quershi’s (1995) systems level distinctions for evaluating activities in the virtual team.

Although many have focused on technology in the past, the people and process and association aspects of the complex distributed system are often more important than the implementation of technology (Hendrickson & Strader, 1998; Reinsch, 1997; Bui, Higa, Sivakumar, & Yen, 1996; Evaristo & Munkvold, 2002; Spinks & Wood, 1996; Sia, Tan, Teo, & Wei, 1998). This work will build on the Quershi (1995) case study model to examine Technology, People, Process, and Associations. It is assumed that the charter of a virtual team will have a clear statement of the task (mission) and timeline, therefore, these aspects of the analysis are considered attributed of the virtual teams and not necessarily areas of review in the research. The impact of the constraint of the attribute, however, may be a point of discussion in the conclusion of the case study.

The focusing element of the research builds on the emerging area of distributed extreme programming. A limited body of work in this young area has been developed over the last two years (Maurer, 2002; Cursaro, Jain, Kircher, & Levine, 2001).

INITIAL FRAMEWORK COMPONENTS
Technology. Technology involves a number of issues in the virtual team. Primarily these items are infrastructure and application dependent.

People. People aspects are sometimes the most difficult aspects to resolve. In several early pilots, the people issues have been overlooked. A key theme in the recent writings of James Champy has been the omission of people in the haste to implement technologies.

Process. Process aspects are key to understanding the readiness and strategies of the organizations that contain virtual teams. It is important to remember that process is present in all facets of the organization. The purpose of examining process is to understand the intersections of actions and the virtual teams purpose.

Association. Association manages the interconnections between the virtual team and other entities. These other entities could be other virtual teams, traditional teams, or other organizations.

This work will be undertaken in a limited active researcher environment to better ensure the objectiveness of the research. A mediating third party will work to develop a pilot for technology implementation on the virtual team. The researcher serves as an expert advisor to the pilot formation and operation, while simultaneously using the pilot as a data collection vehicle for the research.

The principles of the interpretive case study will be modeled on the work of Klein and Meyers (1999), which calls for some definition in the interpretive case study even though a pure interpretive study would not employ any mechanisms such as surveys which are traditionally held as conventions of positivism.

LITERATURE
For the most part, work in this space has focused on collaboration and computer-mediation in the academic research organization. Nazer (2001) performed a psychological/sociological-focused thesis that examines the dynamics of a virtual organization and the ability to transfer those behaviors to traditional paradigms. Some research has focused on collaboration and discussion in distributed environments (Burnishe, 2001; Scott, 2002). Other work has been centered on specific technical implementations that facilitate collaboration (Dorochenceanu, Marsic, & Wang, 1999; Greenberg & Roseman, 1996;
Gupta, Grudin, & Jancke, 1999). Additional technical work has been com-
pleted in the formulation of generalized technical frameworks (Beca, 2002;
Although some have done work in the organizational structures that support
distributed collaboration (Ang & Slaughter, 1995, Bailyn, 1989; Nazer, 2001,
Schmidt, 2000) and the overall impact of these programs (Burnishe, 2001;
work has been done in holistic frameworks which take into account technical
and functional requirements for a robust evaluative distributed collaboration
environment classification taxonomy.

STAGE OF RESEARCH

This dissertation work is in the very early stages of the idea paper. Work
refining the topic is currently underway in conjunction with initial coursework
in information systems at Nova Southeastern University, where the author is
in the second semester of coursework in the Graduate School of Computer and
Information Sciences.

EXPECTED BENEFITS FROM SYMPOSIUM

PARTICIPATION

The researcher seeks feedback on methods for strengthening the out-
comes of the research while preserving the objective and non-assumptive na-
ture of the research process. Most researchers have conducted laboratory-like
studies of distributed collaboration with hard distinctions between distributed
and non-distributed teams using surveys as the major vehicle. In this research,
an amalgam of a number of data collection mechanisms will be employed,
including surveys, however, the survey is not the primary and vehicle for data
collection. Given this diversion from the traditional path, it is important to
understand as early as possible in the research any mitigating circumstances
that may reposition the survey as a more primary vehicle and thus force
the research to take on a more positivist role. Particular feedback on interpretive
case studies in IS is sought.

REFERENCES

SIGCPR Conference on Supporting Teams, Groups, and Learning In-
side and Outside the IS function Reinventing IS, 181-193.
Bailyn, L. (1989). Towards the perfect workplace? Communications of the
ACM, 32(4), 460-471.
Beca, L. M. (2002). A methodology and platform for building collaborative
environments on the Web. PhD Dissertation. DAI-B 63/03.
ACM Symposium on User Interface Software and Technology (UIST ’98),
133-142.
remote collaboration and communication. Paper presented at CSCW ’98.
Retrieved October 2, 2002, from http://tangible.media.mit.edu/pa-
pers/inTouch_PsyBench_CSCW98/inTouch_PsyBench_CSCW98.pdf
in the US and Japan: A cultural contingency model. Proceedings of the
Burnishe, R. W., Jr. (2001). Fostering exploratory discourse in global,
telecollaborative learning projects. PhD Dissertation. DAI-A 62/03.
Computer Science and Telecommunications Board, & National Research Cen-
cil. (2002). Broadband: Bringing Home the Bits. Washington, DC: Na-
tional Academy Press.
and Configurational Characteristics of Geographic Dispersion in Work
Teams (Paper 148) [Center for eBusiness at MIT Technical Report]. Cam-
bridge, MA: Massachusetts Institute of Technology.
Technology and workplace of the future. Academy of Management Ex-
ecutive, 12(3), 17-29.

DISCIPLE synchronous collaboration framework. Paper presented at
IASTED International Conference on Internet and Multimedia Systems
Fitzpatrick, G., & Kaplan, S. (1997). Designing Support for Remote Inten-
tive-Care Telehealth using Locales Framework. Retrieved October 1,
DIS97-kaplan.pdf.
laboration. Proceedings of ACM 1996 Conference on Computer-Sup-
ported Cooperative Work (CSCW ’96), 325-333.
and Remote Audiences: Design and Use of the TELEP System. Retrieved
/TELEP/TRs/99-71.pdf.
long distance telecommuting case study. ACM SIGPCR Computer Per-
sonnel, 19(3), 20-33.
International Telecommunications Union[ITU]. (2002, March). World Tele-
communication Development Report. Retrieved September 27, 2002,
from http://www.itu.int/ITU-D/ict/publications/wtdr_02/material/
WTD0202-Sum_E.pdf.
Klein, H. K., & Myers, M. D. (1999). A set of principles for conducting and
evaluating interpretive field studies in information systems. MIS Quar-
terly, 23(1), 67-94.
Computer Systems Laboratory, Stanford University.
Notes in Computer Science: Vol. 2002. XP/Agile Universe 2002 (2418th
Munkvold, B. E., & Evaristo, J. R. (2002). Collaborative infrastructure format-
in virtual projects. Journal of Global Information Technology Man-
agement, 3(2).
and a case study of networking across organisations (Unpublished PhD
Dissertation). London School of Economics. London School of Economic
ics Department of Information Systems, http://sis.lse.ac.uk/Research/
rescomp2.htm?QURESHI.
Reinsch, N. L., Jr. (1997). Relationships between telecommuting workers and
their managers: An exploratory study. Journal of Business Communica-
tion, 34(4), 343-369.
Schmidt, B. L. (2000). You can go home again: Successful telecommuting for
personnel, 19

Copyright © 2003, Idea Group Inc. Copying or distributing in print or electronic forms without written permission of Idea Group Inc. is prohibited.
Related Content

IoT Setup for Co-measurement of Water Level and Temperature
www.irma-international.org/article/iot-setup-for-co-measurement-of-water-level-and-temperature/182290

Resource Sharing and Networking in Library and Information Centres in Africa
www.irma-international.org/chapter/resource-sharing-and-networking-in-library-and-information-centres-in-africa/112827

IT Solutions Supporting the Management of Higher Education Institutions in Poland
www.irma-international.org/chapter/it-solutions-supporting-the-management-of-higher-education-institutions-in-poland/184099

Transactive Memory Systems
www.irma-international.org/chapter/transactive-memory-systems/112916

Ergonomic Design of a Driver Training Simulator for Rural India
www.irma-international.org/chapter/ergonomic-design-of-a-driver-training-simulator-for-rural-india/183840