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Quality and Knowledge Management in Aerospace Companies (2)

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SWIFTER - SPACE WEATHER INFORMATICS, FORECASTING, AND TECHNOLOGY THROUGH
ENABLING RESEARCH AND VIRTUAL ORGANIZATIONS

Abstract

SWIFTER will build a virtual organization to enable collaboration among communities to find new ways to understand, characterize, and forecast space weather to meet the needs of our technology based society. In this paper we discuss how knowledge is shared in organizations and how a virtual organization can be formed. A key element of a “virtual” organization is that it is a fluid collection of members that share some means of communicating relevant information among some of its members. The members also share ideas in evolution (such as analysis, new technologies, and predictive trending). As concepts mature they can be matured or discarded more quickly as the power of the network is brought to bear early and often. The benefits to international virtual organizations extend beyond the maturation of a single idea to breaking down the barriers to collaboration and sharing across borders.

Space weather, the changes in the near-Earth space environment, is important to the global space community and of interest to the public. The public is interested in a variety of phenomena including meteors, solar flares, the aurora, noctilucent clouds and climate change. Industry focus tends to be on more concrete problems such as ground-induced currents in power lines and communications with aircraft in transpolar routes as well as geolocation (i.e. the use of GPS systems to precisely map a function to a position). Other government-oriented users service specialized communities who may be more or less unaware of the research and development upon which the forecasts or nowcasts rely for accuracy. The basic research community may be more or less unaware of the details of the applications, or potential applications of their research. The problem, then, is that each of these constituencies may share elements in common but there is no umbrella organization that ties them together, nor is there likely to be such an organization.

Our goal in this paper is to outline a scheme for a virtual organization, delineate the functions of that VO and illustrate how it might be formed. We also will assess the barriers to knowledge transfer that must be overcome.