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Social Awareness for Global Software Teams

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***Abstract*—We hypothesize that information shared on social media can work for distributed software teams as a surrogate of the social awareness, that is information that a person maintains about others in a social or conversational context, gained during informal face-to-face chats. Hence, we have developed a tool that extends a collaborative development environment by aggregating content from social networks and microblogs into developers' workspace.**

Keywords-social awareness; trust; collaborative development environments; CDE; social networks; SNS

I. INTRODUCTION

Social awareness, that is, the information that a person maintains about others in a social or conversational context [1], contributes to counteract the lack of teamness and strengthen trust among remote developers [2]. From an affective perspective, trust is defined as the reciprocal emotional ties, concerns, and care that morally push the trustee to do something for the trustor. The problem with trust building is that it typically grows through close and face-to-face (F2F) interaction. However, F2F interaction is also the very activity that global teams see reduced, due to distance. Therefore, to date the following research question still remains open*: How do we strengthen or build trust among developers of globally distributed teams who have few or no chances to meet?*

II. SOCIALTFS

SocialTFS is a tool developed as an extension of Visual Studio and Team Foundation Server (TFS) to aggregate teammates' content from social software into Microsoft's Collaborative Development Environment (CDE). SocialTFS includes three main components. The client component, which is realized as a Visual Studio plugin, handles the visualization of all the social content collected from the services enabled by a user. The services currently available include TFS and CodePlex, as supported CDEs, plus Twitter, Yammer, StatusNet, Facebook, and LinkedIn. For the sake of privacy, users are allowed to specify which services to enable and what information to retrieve from their accounts. The server-side component's main duty is notifying events and workspace changes to the other components via RESTful web services. The third component, called Social Proxy Server, is an aggregator that accesses the API of the registered services. As a proxy, it interacts with both the SocialTFS client and TFS via the HTTP/REST protocol. Its main duties are retrieving information about registered users from social network services (SNSs) and about software projects from CDEs. To make this possible, the Social Proxy Server stores user credentials and caches posts on behalf of users, who give authorization on the first access through the OAuth authorization protocol.

All the social content is first retrieved and cached by the proxy component. Then, all the information is requested by the SocialTFS client and presented to the end user in a view within Visual Studio. Such information is shown through three different timelines. The *home timeline* resembles those available in microblogging sites, as it gets populated by the posts from one's *awareness network*, that is, the set of people whose actions one monitors and to whom one's actions are displayed upon explicit follow/unfollow actions. We call this type of followings *static*. However, since awareness networks are *fluid* and change over time, depending on task assignments or development phases, we also designed a *dynamic* type of followings, which, unlike static ones, are automatically added to and removed from awareness networks. In the *iteration timeline* this happens to other teammates who modified, or commented on one's assignments in the iteration at hand. In the *interactive timeline*, teammates are dynamically added or removed, depending on whether they modified the artifact (e.g., source code file) currently focused in the Visual Studio editor.

III. FUTURE WORK

As a future work, we need to run empirical studies with large-scale industrial projects that use TFS. Without measuring the benefit of being personally connected in the workplace, being in favor or against mostly depends on the extent to which we make individual use of social media today.

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