Formulating Closeness Centralities on Workflow-Supported Performer-Activity Affiliation Networks

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***(Pt9)Abstract*— This paper focuses on a special type of enterprise social networks, which is called 'workflow-supported activity-performer affiliation network,' and particularly formulates a metric of closeness centrality to numerically analyze the degree of clerical familiarities among performers who are involved in a workflow-supported activity-performer affiliation network. A workflow model specifies enactment sequences of the associated activities and their affiliated relationships with roles, performers, invoked-applications, and relevant data. These affiliated relationships can be revived into valuable organizational knowledge supporting business intelligence as well as managerial decision-making activities. In this paper, we particularly focus on formulating the affiliated relationships between activities and performers in a workflow model to numerically measure the closeness centralities of performers as well as the closeness centralities of activities. We also devise a series of algorithms for implementing the formulated closeness centrality equations, and describe the ultimate implications of these closeness centrality formulations in workflow-supported organizations.**

***Keyword*—workflow-supported affiliation network, ICN-based workflow model, organizational closeness centrality, business process intelligence**

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