“The vertex-centric graph systems do not consider the characteristics of graph mining algorithms in their design. In particular, the computational model should be more coarse-grained, subgraph-centric instead of vertex-centric, since each subgraph now plays the role of a processing unit that maintains a local state and accordingly decides how to involve more vertices for updating. Taking a vertex-centric programming approach means users must specify the algorithm logic for each individual vertex so that the runtime may execute in parallel. This may generate a lot of subgraphs and algorithm logic is more attached with each subgraph instead of any single vertex.”

This benefits finding all k-trusses in a single graph because finding all k-trusses is mostly linear complexity for each iteration, resulting in light computation and communication on the vertices. Finding all k-trusses is an elimination process between the iterations, and with a vertex-centric approach the algorithm logic may be specified for finding the 3-trusses, then the 4-trusses, and on.