Property Graphs

Position Paper for Workshop on Social Standards

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Property Graphs

• Social network providers are using property graphs to analyze and “mine” their networks
• A few vendors provide capabilities to store and work with property graphs
• Also a few home-grown implementations
• There are differences in the data model, the API and the capabilities offered
Property Graphs

• What are they?
• Node/edge model where the edges, as well as the nodes, have attributes (key-value pairs)
• Can be modelled in RDF
Example from Tinkerpop
Property Graph Model

• A set of nodes
  – each node has a unique identifier.
  – each node has a set of outgoing edges.
  – each node has a set of incoming edges.
  – each node has a collection of key-value properties.

• A set of edges
  – each edge is directed i.e. has a head and a tail node.
  – each edge has a unique identifier.
  – each edge has a label that denotes the type of relationship between its source and target nodes.
  – each edge has a collection of key-value properties.
Recommendations

• The W3C should start two community groups
• One should look into a standard for property graphs
• The other should work on a vocabulary for relationships and properties