Emergence (glossary)

From SEBoK
emergence

The principle that whole entities exhibit properties which are meaningful only when attributed to the whole, not to its parts. Every model of a human activity system exhibits properties as a whole entity which derive from its component activities and their structure, but cannot be reduced to them. (Checkland 1999)

Source

Discussion
There are other views of emergence which are not captured in Checkland’s definition. Emergence has two aspects to it (like two sides of the same coin): One, for a given object, some of its properties may be identified as emergent with respect to a description of the object in terms of interacting elements. Two, if a set of given elements are allowed to interact, the resulting system may have properties that are not found in any one of the elements; these are the properties emerging as a result of the interaction and are therefore called the emergent properties of the system. In the first case, emergence arises as a result of the mode of description (no physical action or change involved), in the second case emergence arises as a result of a physical action or change (making the objects interact).

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