Chaos (glossary)

From SEBoK

chaos

(1) A state of disorder or unpredictability. (Oxford English Dictionary)

(2) A chaotic system has elements which are not interconnected and behave randomly with no adaptation or control. (Oxford English Dictionary)

(3) Chaos theory is applied to certain types of dynamic system (e.g. the weather) which, although they have structure and relationships, exhibit unpredictable behavior. These systems are deterministic; their future behavior is fully determined by their initial conditions with no random elements involved. However, their structure is such that (unmeasurably) small perturbations in inputs or environmental conditions may result in unpredictable changes in behavior. This behavior is known as deterministic chaos, or simply chaos. (Kellert, 1993)

Sources

(1) and (2) Oxford English Dictionary. s.v. "Chaos."


Discussion

(1) and (2) are the general usage definitions in which chaos means random and unconnected, e.g. not a system.

(3) is a mathematical definitions of a class of natural systems which appear chaotic, but have underlying mathematical order them.

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