

# Entropy (glossary)

From SEBoK  
entropy

*(1) A thermodynamic quantity representing the unavailability of a system's thermal energy for conversion into mechanical work, often interpreted as the degree of disorder or randomness in the system. (Oxford English Dictionary Online 2012)*

*(2) Lack of order or predictability; gradual decline into disorder. (Oxford English Dictionary Online 2012)*

*(3) Entropy is the tendency of systems to move towards disorder or disorganization. Negentropy describes the forces working in a system to hold off entropy. (Hitchins 2007)*

## Sources

(1) & (2) Oxford English Dictionary. 2012. s.v. "Entropy."

(3) Hitchins, D. 2007. *Systems Engineering: A 21st Century Systems Methodology*. Hoboken, NJ, USA: John Wiley & Sons.

## Discussion

Entropy has a specific mathematical definition related to transfer of energy (2nd law of thermodynamics) which in physics is also used to describing the loss of order or organisation in a system over time.

Definiton (3) is the preferred Sysem Science view, work is put into to creating or organising a system, creating structure and order. If nothing more is done, the system will loss that order over time, unless more work (or energy) is added to the system during its life. This can be seen as an analogy for management, maintenance, training, repair, etc.

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