

### Keyword INFORMATION Analysis

*Information* is a keyword with particularly extensive meanings in its modern evolutions and contemporary developments (Williams). The modern denotation of *information* has two primary parts, which are "the process of informing" and "a product that results from such a process" (Williams). This definition emphasizes the direct interpersonal communication in which the conveying of information occurs, in contrast to the connotations in the contemporary expansions.

The keyword's contemporary extensions directly reflect the societal, economic, and cultural changes in the context of the international industries of science, technology, engineering, and mathematics, or STEM. These definitions depend primarily on the Civil Society 20, or C20, which is one of the eight official Engagement Groups of the international summit Group of Twenty, or G20 (C20). One significant role of C20 is to provide clear explanations on complex issues, by working through their technicalities and abstractions through the expertise of the world's leading experts in various fields. The selection of the keyword *information* by the C20 signifies the very nature of its significance in relation to the visions of the C20 committee. The keyword's contemporary additions include complex notions of various technical fields and emerging spheres that naturally widen and eventually overlap into the general use.

The primary sources of the keyword's new connotations are *information theory* and *information technology* (Williams). In the context of *information theory*, the keyword is defined in "statistical probabilities of occurrence of symbols, and is measured in bits, [which is] a minimal unit based on binary choice" (Williams). With the definite starting point of C. E. Shannon and W.

Weaver's 1948 paper *A Mathematical Theory of Communication*, *information theory* has influenced the keyword to connote a highly mathematical entity, which functions through various formulas for the sake of the mechanical operations in the STEM fields (Aftab). *Entropy* is a crucial concept of the said theory, and it signifies "a factor, quantity, or measure of uncertainty or efficiency in the communication of information," and enhances the quantifiable aspect of *information* (Merriam-Webster).

In terms of *information technology*, the keyword means "a characteristic of any arrangement of signs that can be stored, viewed as a message, and transmitted in signal form; so it can—and increasingly does—pass between inanimate devices as much as between animate beings, as well as through combinations of the two" (Williams). Here, *information* no longer denotes the person-to-person "practice of 'informing' or 'being informed.'" In relation to such understanding are various concepts like *bioinformatics*, *information asymmetry*, *information flow*, *information services*, *information value*, and *information economics* (Williams). As the boundaries of the keyword continues to expand, various concepts and phrases derive from the particular connotations of the terminology. These continuously emerging notions penetrate one of more areas of the STEM fields and permeate in all aspects of people's everyday lives.

Comprehending *information* involves twofold investigative processes, because it involves both the "practical problems" around the term such as the issues of its "rightful ownership, control systems, or appropriate recipients," and the "wider social question" of the term's "economic, regulatory, or cultural regimes" (Williams). It is critical and effective in understanding *information* to differentiate it from its various associations as well as to relate it to them. In comparison to *information*, *communication* highlights the method, *idea* highlights

the concept, *knowledge* highlights the epistemological status, *data* highlights the raw material, *intelligence* and *news* highlights novelty, *opinion* highlights subjectivity, and finally and most importantly, *media* highlights the container rather than the content (Williams). The keyword *Information* stands distinctively while in close relations to all the mentioned terms. The coexistent proximities and distinctions between *information* and these various words open up even greater depths of possible investigations on its further evolutions and developments.

Bibliography

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