

Human Communication and the Design of the Modern Web Architecture

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A software architecture determines how system elements are identified and allocated, how the elements interact to form a system, the amount and granularity of communication needed for interaction, and the interface protocols used for communication. Software engineers often find the inspiration for architectural designs within natural systems. For example, life is frequently compared to a distributed object system, since biological systems are composed of components with individual identity and behavior, communicating through changes in the body chemistry. A similar analogy can be used to describe the modern Web architecture.

Human communication can be thought of as a distributed hypermedia system. The mind's intellect, voice+gestures, five senses, and imagination are all components in the system of human communication. A person thinks of what they wish to communicate, translates that into a representation which they believe will be understood by the intended audience, exchanges that representation using their voice, gestures, and reference to other representations, and then hopes that each person receiving the representation will interpret what was transferred in the same way as the originator. Using this analogy, we can explore the design of the modern Web architecture as it has evolved to meet the needs of resource identification, intermediate processing, large scale caching, content negotiation, and more efficient use of the network infrastructure.

For more information see: <http://www.ics.uci.edu/~fielding/>