

Data, Information, Knowledge

INFORMATION ARCHITECTURE COMPONENTS

For physical architecture, we use physical materials. For information architecture, new types of material are needed. Data, information, and knowledge could be those materials. Abstract in nature, they need structure, space and interfaces so that we can use them for design support purposes. Other disciplines, such as medicine, are constructing their body of knowledge with the same elements to come to a better understanding of the functioning of the human system.

With regards to urban design, the realm of data is expanding faster, followed by the amount of derived information, that can be used to build design knowledge.

Three important words

Data and information are often used interchangeably, but as they are at the core of information architecture, they deserve a special consideration. Wikipedia, for example, suggests that “**Data** is another word for information”. We see data as the smallest entity of information and as a necessary foundation for building knowledge.

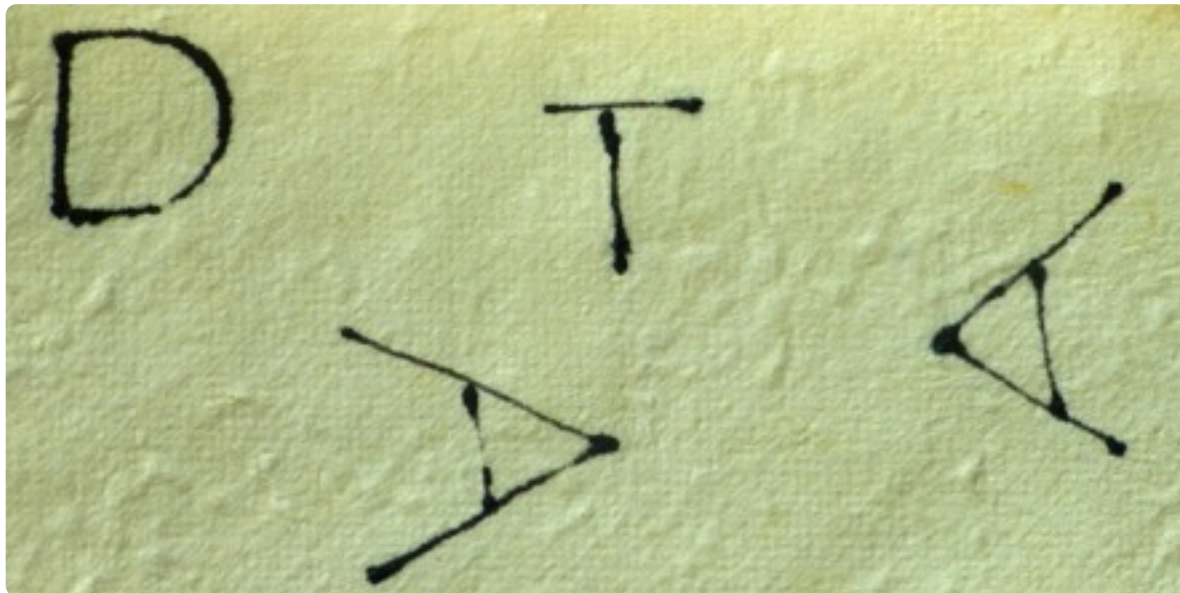
The transformation from data to information and knowledge is one of the most important activities in every society. Even though it might appear that this activity applies only to the post-industrial societies, yet it was and still is important for the preindustrial and the industrial societies, too. With regard to the city as hub for collection, storage, and transformation of data into information, knowledge, and finally built architecture and other physical and intellectual structures, this activity is crucial. It requires the capacity to abstract, to order, to give structure, and to design. Therefore, the architectural curriculum is a good foundation for information architecture.

Since the middle of the 20th century, a development in computer science, with roots even more than 100 years ago, laid the foundation to represent and work with data in a standardised format. This standardisation of data and information has had a significant impact on human society until today.

Data

The Romans used the word **datum** to express “that is given”. In the context of the city, we refer to data as the smallest entities of information, as values given to objects, expressions, functions or properties. Examples of data are numbers, colors or other simple descriptions. To better describe objects, expressions, functions or properties we need data and connections or relations - we call the result information. Important to remember: Data do not completely describe objects, expressions, functions or properties, but they are an indispensable ingredient.

Gallery 2.1 Examples for data

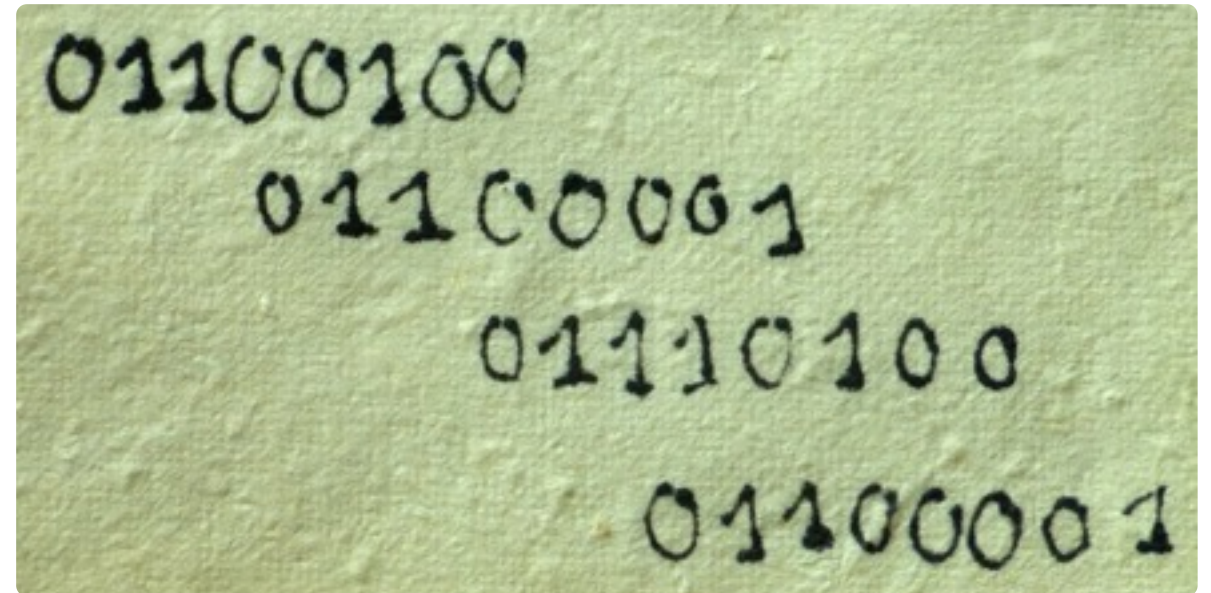


Schmitt, J. 2013. *Letters of the alphabet as data*. [Ink on paper]

Information

Information sets data in relation to each other, it consists of data and connections. The word has also Latin roots: *informatio*. There was the stone age, the bronze age, the iron age, or the nuclear age. We consider information as a virtual material, and one of the most important ones for the information age and for the information society. Important to remember: Information does not completely describe society, but it is an important abstraction.

Gallery 2.2 Examples for information



Schmitt, J. 2013. *Binary code of the word «data»*. [Ink on paper]

Knowledge

Knowledge is a result of connecting data and information. It is not entirely clear how data and information are combined in the cognitive process into knowledge, but in any case domain knowledge and domain independent knowledge build on data and information.

Gallery 2.3 Containers of knowledge



Schmitt, J. 2013. *The knowledge of the writer Otfried Preußler, author of the book Krabat*. [Pen on paper].