Worldwide Domain Spaces make quantitative and other data searchable and prepare these for interoperable exchange

One-page sketch, for details look at http://numericsearch.com/wwdomainspaces.pdf

Basically **information** (as well as decision) means **selection within** a given **domain** (value or definition set). Precondition of well defined information (or decision support) is that all speak and think about the same domain. Therefore its unambiguous **global** (online) definition is recommendable for communication and interoperability. On the web we can associate the domain with the URL of its definition. We can define it according to our needs for meaningful and searchable communication. This led to suggestion of Domain Spaces:

- A Domain Space (DS) is a user defined nestable metric space with unique name (URL).
- The elements of a DS are called "Domain Vectors" (DVs).

DVs are interoperable container of data and searchable. The potential of quantification and quantitative search is huge.
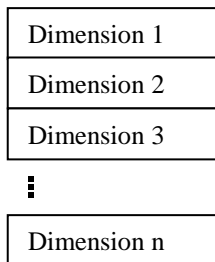

Domain Space (DS):

Dimension of a DS:

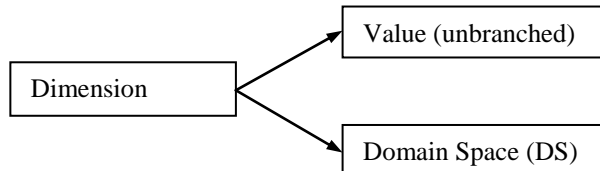**Figure 1: A multidimensional DS. The DS and every of its dimensions have a unique name (URL).**

Figure 2: A dimension of a DS can represent a unbranched value (a number, or explicitly specified text or binary data) or again a DS, therefore DS definitions can be nested and reused within new DS definitions.

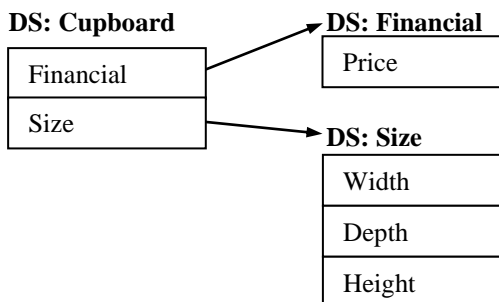## Exemplary commercial Domain Space definition:

Figure 3: Exemplary commercial DS definition (nesting level 2). A complete Domain Vector (DV) of this space contains 4 numbers (Price, Width, Depth, Height). Implementation of this example has been done in http://NumericSearch.com/w7s.jsp?i7=1006

Exemplary Domain Space definition for medical decision support:

For decision support the dimensions of a Domain Space can be subdivided into 3 parts:

1. **Preconditions** (In Medicine: Findings)
2. **Decision** (In Medicine: Treatment) - can be varied at search to find the decision with optimal result
3. **Result**
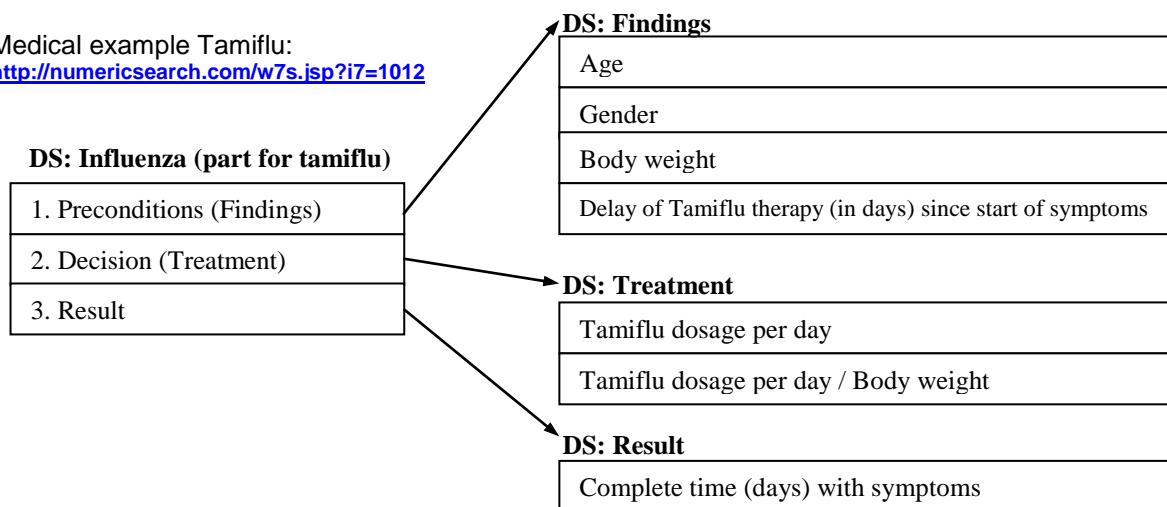
Medical example Tamiflu:
http://numericsearch.com/w7s.jsp?i7=1012

Figure 4: Exemplary DS definition (part) to the question: Is Tamiflu clinically indicated?
April 2014: Cochrane review suggests that Tamiflu (medication against influenza) is not useful.
(http://www.spiegel.de/wissenschaft/medizin/tamiflu-umstrittenes-grippemittel-hat-keinen-nutzen-a-963768.html)
By search in an appropriate DS such questions could be quickly resolved.