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Metadata fundamentally alters the way we think and make use of information to create and transfer knowledge.

Semantic metadata even more so.

It allows us to add as much granularity of detail to an existing object, interlink it to an endless number of other objects and make it easy to search, access and use. And even if we are still far from what Ted Nelson calls Intertwingularity, metadata done right – that is handled properly with semantic technologies – gets us a step closer to our attempt to fully and richly "express the complexity of interrelations in human knowledge".

> **Intertwingularity** is a term coined by Ted Nelson to express the complexity of interrelations in human knowledge.
>
> Nelson wrote in Computer Lib/Dream Machines (Nelson 1974, p. DM45): "EVERYTHING IS DEEPLY INTERTWINGLED. In an important sense there are no "subjects" at all; there is only all knowledge, since the cross-connections among the myriad topics of this world simply cannot be divided up neatly."[1]

First Things First: Metadata Matters [A Non-technical Perspective on Data About Data]

More often than not the talk about metadata is too dry and technical. And this tends to disguise how incredible and incredibly useful metadata is.

Humming quietly under each and every digital activity, metadata plays a transformative role in the ways we interact with information.

As prof. Jeffrey Pomeranz, the author of the book *Metadata* writes:

> Metadata, like the electrical grid and the highway system, fades into the background of everyday life, taken for granted as just part of what makes modern

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life run smoothly.

If you watch the recommended videos on Youtube, or use your phone to show you the nearest restaurants, or work with the faceted search on Amazon, you are already reaping the benefits of “data about data” (as the most common definitions of metadata has it).

Other examples of metadata span from the size and the format of our ebooks and documents, through the dates on which our files were created, all the way through the sensor data from our smart devices and the latest song we searched for on Itunes.

Metadata vs. Semantic Metadata [How is metadata semantic?]

As fundamentally as metadata changes our information landscape, it is just the beginning. The next step towards highly interconnected information spaces is semantic metadata.

What differentiates semantic metadata from metadata is the level of interconnectedness. Semantic metadata is deeply interlinked and richly contextualized.

Think of a price tag in a store. Conceptually, the price tag is a very basic example of metadata.

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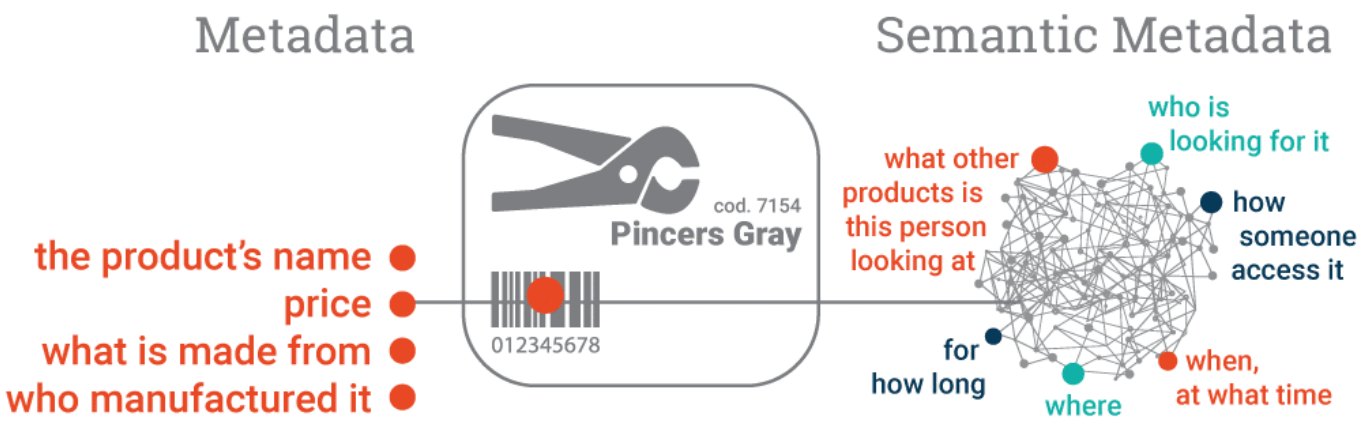

Metadata changes our information landscape, but the next step towards highly interconnected information spaces is semantic metadata.

It contains information intended for the customer such as the product's name, its price, who manufactured it, etc. However, the tag also contains a barcode and several other codes that are usually only machine-readable and are used for automating the checkout process in the store.

But is that latter metadata, the one in the barcode, meaningful? Can we understand the symbols and signs in it and associate them with other connected facts?

No, we can't. Without assigning additional meaning to the codes, the information elements would have only limited value because we won't be able to associate them with anything else. So, in order to make them meaningful, we need to use semantic metadata.

Admittedly, coming up with a fast and steady differentiation between metadata and semantic metadata is tricky. But where semantic metadata comes to its own is the semantic technologies with the help of which these data (or metadata) are modeled as to express meaning.

Imagine that the elements on this same tag get linked to a wide range of additional

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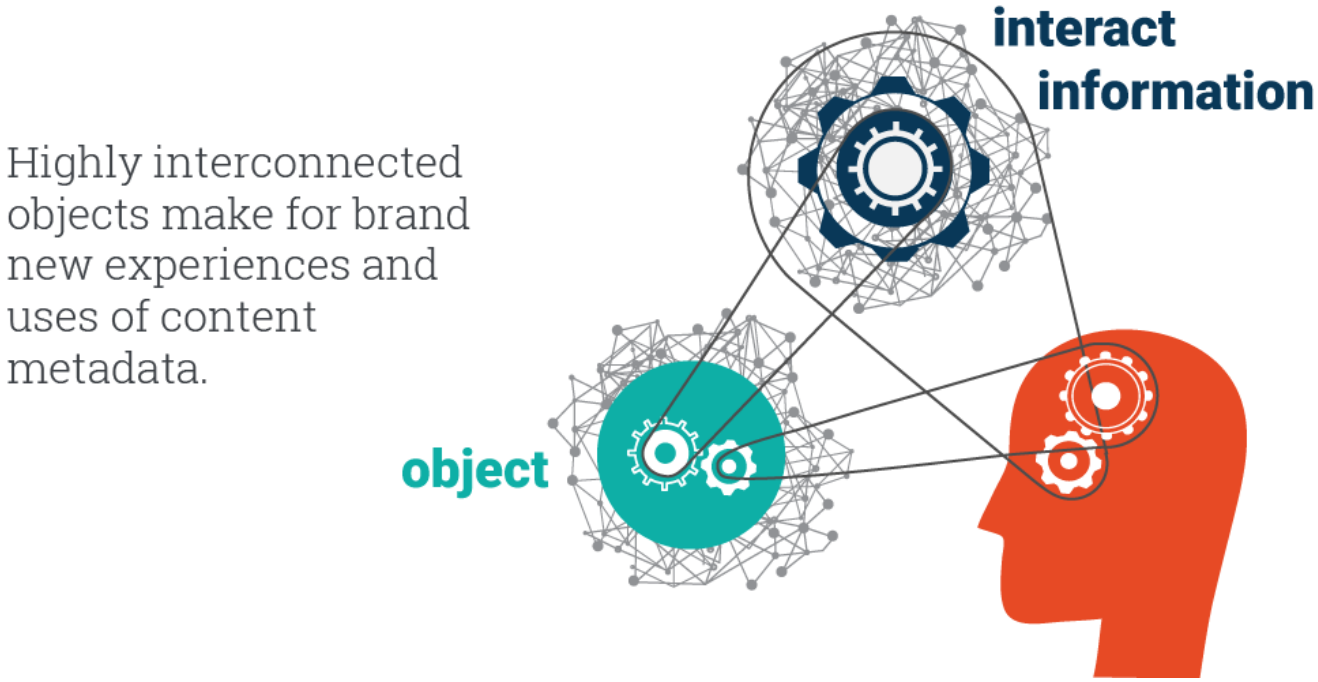
interconnected information: the website of the manufacturer, who they are, what other products they offer, what category the product belongs to, other products it is similar to, etc. Now imagine the tag containing contextual information of the type: who is looking at it, at what time, where, for how long, what other products was this person looking at and so on.

What you get is a highly contextualized, highly personalizable dynamic label that has the capability of changing, depending on who, when, where and how someone is accessing it. And as sci-fi as this may sound, it is is not. It is what semantic metadata does.

With semantic metadata, the price tag details will be linked to their machine-readable definitions, to one another and to external sources explicitly. Thus, the metadata from the tag, together with all its information elements, will become valuable and meaningful, and the tag will be turned into a highly interconnected object.



Making Experiences Out of Semantic Metadata

Highly interconnected objects make for brand new experiences and uses of content. Share on X

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By linking hundreds of millions of entities, major media companies, businesses and non-for-profit organizations are already creating captivating and insightful experiences out of semantic metadata. As Yosi Glic points out in Understanding the True Value of Semantic Discovery, when writing about Netflix and their annual investments of $150 million in semantic technologies:

> Only the semantic technology can know if a user likes entertainment about a "rough one-man army," a "race against time," "criminal heroes" or a "fall in love" movie for date night.

It's true. With semantic metadata, the opportunities for interconnecting are endless. Enriching the identity, findability and utility of digital resources, semantic metadata lets the user know more.

Semantic metadata unlocks incredible new ways to interact with information, forging new experiences out of exploration and discovery:

- We get richer answers faster.
- We discover relationships across heterogeneous information sources with less effort.
- We get related information easier.
- We gather and research resources at a lower cost (of time and effort).

The Automagical Way Ahead

> The addition of semantic metadata represents content at a higher-level of abstraction enabling the creation of programmatic approach to cross-departmental use of assets as content that more closely resembles how humans understand and use the content [….] Content is dealt with because of the people, places, organizations, brands, topics that it mentions rather than just structural metadata (e.g. file format, file size, creation date etc.)
>
> Cit. Can Semantics be the Peacemaker between ECM and DAM?

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Semantic metadata makes things happen automagically. Forging new ways of organizing, discovering and using information (very often in an automated or semi-automated manner), semantic metadata makes everything easier (and cost-effective) to arrange and connect.

Bringing semantic technologies into the process of metadata management breeds an entirely new kind of data: data that are smarter and work wonders for content as well as

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