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Today, I want to invite you to a thought experiment.

Let's imagine Johnny Mnemonic – Keanu Reeves' character from the cyberpunk action thriller movie of the same name – who is carrying a data package inside his head. He has been tasked with smuggling data – not in the 90s as the movie had it, but these days. It's the dawn of a yet another Forrester report (TechRadar™: Artificial Intelligence Technologies, Q1 2017) highlighting the importance and the potential of semantic technology to represent and govern knowledge.

Would Johnny be better off if the data to be transferred was Linked Data? Had Johny known and used semantic technology, and more specifically Linked Data, to "transport" tons of bits of information, would he have been better off as a data carrier?

Let's find out.

A Headful of Linked Data

The deconstructed Johnny's data problems are three: 1. Volume, 2. Retrieval and 3. Security (encryption). Which are not so different from the concerns of any other enterprise having to deal with data management. And before we move on and look at these three in the context of the techniques Linked Data provides, here is an important reminder in case we are wondering if Linked Data is too good to be true:

> Linked Data is no silver bullet. It won't protect you from issues of data quality or from service failures. […] But Linked Data does provide you with new ways to manage these existing data-management challenges.
>
> Cit. p.6 Linked Data, Structured Data on the Web

That said, it is not that using Linked Data for transporting the client's data in his head would have solved all of Johny's problems. But it still offers an interesting opportunity to consider such a solution from an enterprise perspective.

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Linked Data or Semantic Technology?

Linked Data and semantic technology are sometimes used interchangeably. There are two reasons for this:

> First, Linked Data, or, to put it in Plain English, the practice of explaining the meaning of content to machines, is essentially about linking content to semantically modeled data Second, Linked Data is creating highly connected, computer-processable definitions of entities. And these entities can be further processed by machines with the help of semantic technology.

Linked Data and Volume

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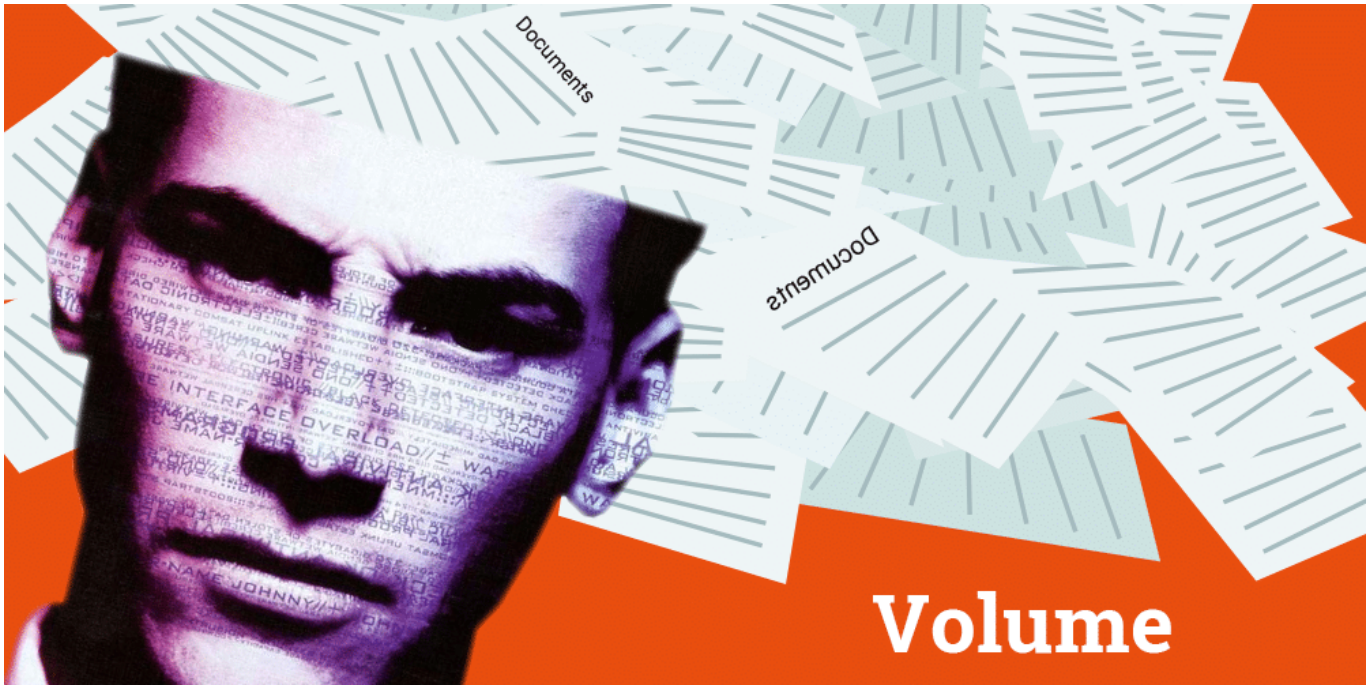

Speaking about data and volume, it seems apt to start this with the famous saying that “most companies think they have “Big Data” problems while they actually have big “data problems””. In other words, the challenges of having large amounts of data are not so much about insufficient storage, but about inefficient data management. In the context of William Gibson’s movie, the volume of data Johnny Mnemonic had to upload in the chip in his amygdala could well have been optimized and structured to take less space and computational resources. Ultimately, navigating large amounts of data is not about volume but about structure.

The lack of structure and the presence of too many siloed (often meaning duplicate) data entries, which make data expand endlessly can be avoided if these data are properly interlinked and given explicit machine-interpretable metadata for easier and automatic search and retrieval. Which is what Linked Data technology is getting better at addressing in an increasing number of cases.

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Linked Data and Information Retrieval

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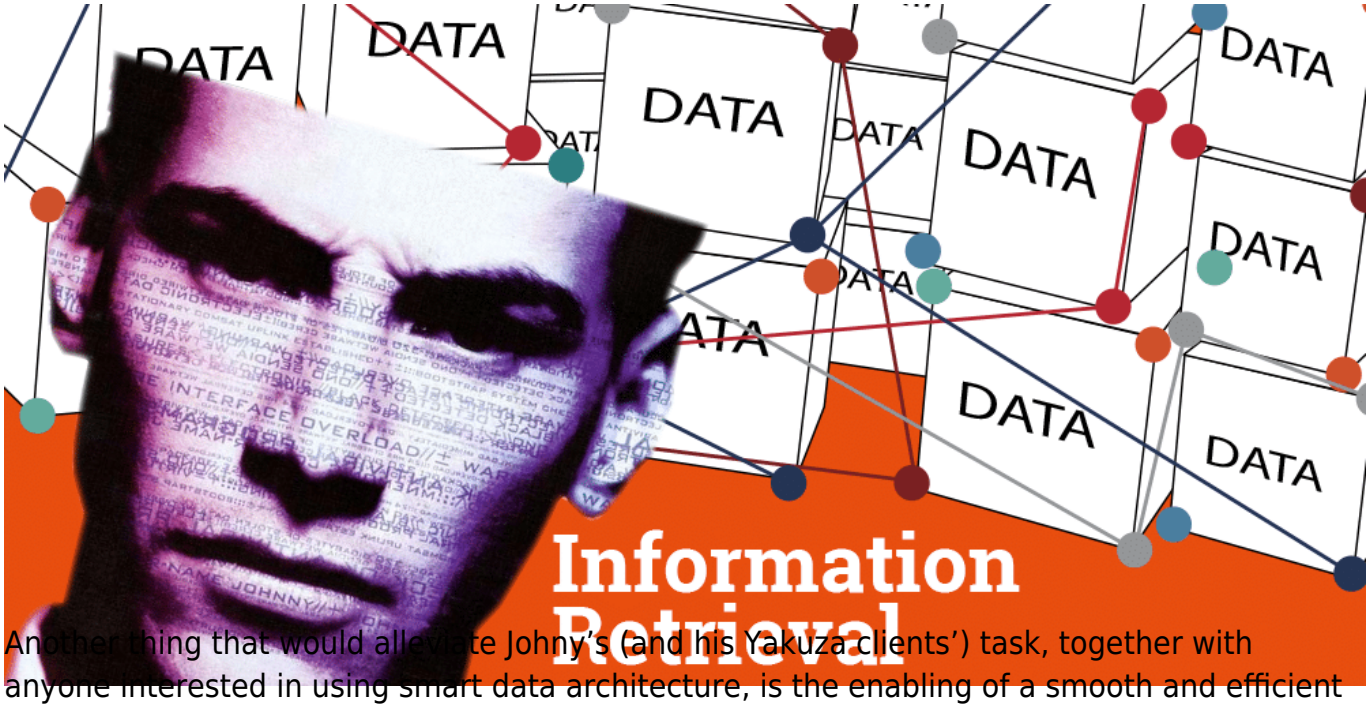

Another thing that would alleviate Johny's (and his Yakuza clients') task, together with anyone interested in using smart data architecture, is the enabling of a smooth and efficient navigation and retrieval of information.

Using Linked Data to enhance information retrieval is important for two reasons and they both have to do with making data useful by the help of a machine-processable context. First, by linking related data, relevant information can be more easily retrieved or, alternatively, automatically suggested by any data-fed system. And second, information that has been expressed by Linked Data is not only more granular, but also easier to classify, package and reuse.

Linked Data and Security

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Finally, we could consider any additional benefits for the security of the data to be transferred over the Net (the virtual-reality equivalent of the Internet in Gibson's movie). As far-fetched as such musings might be, there are some advantages related to securing data when they are expressed in a Linked Data format.

Had Johny chosen to smuggle Linked Data, he would have been able to define the rules of accessing these data more easily. Instead of defining the access for each and every different siloed data piece, he would have been able to operate with one single source of information assigning it the access rules he needed.

The Verdict: Yes, Johnny, Try Linked Data

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Turned into bits and freed from the constraints of any specific container (Johnny Mnemonic's head chip included), information can be more easily shipped around networks with the help of Linked Data.

Linked Data principles do come with their benefits and challenges as any other technology. To wrap it up with what we've started, namely the Forrester report, here's an important thing to consider:

> Successful implementation of semantic technology can cost hundreds of thousands of dollars due to a combination of employee time and investments in software and deployment. Also the need to support these solution with ongoing curation and updating adds to the overall implementation cost.
>
> TechRadar: Artificial Intelligence Technologies, Q1 2017

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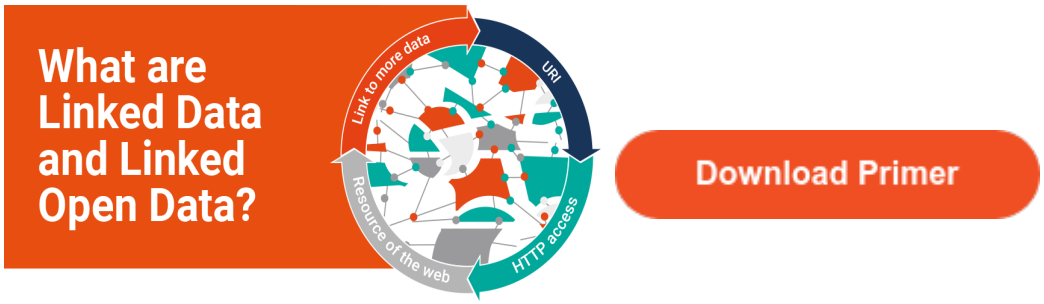
Yet, for organizations that heavily depend on efficient data integration, retrieval and exchange for smooth business operations, the benefits of working with semantic technology and Linked Data outweigh the costs, as all of the above ultimately comes down to smart data management and retrieval practices.



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