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Ruth Birse, Millennial Science Essay Competition,

The Welcome Trust, 210 Euston Road,

London NW1 2BE, UK

Title: Mr.

Surname: Borges Gouveia

First name: Luis

Address: Computing department, Lancaster University. Lancaster, LA1 4YR, UK

Daytime tel: 1524554974

E-mail: luis@comp.lancs.ac.uk

Term time address: Rua Francisco Alexandre Ferreira, 99, 6 Dr/Frt 4400-469 Gaia, Portugal

Head of department: Prof. Ian Sommerville

University: Lancaster University

Department: Computer Department

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Essay title: It's time to rethink the way we deal with information

It's time to rethink the way we deal with information

We all face challenges coping with collecting information. Information about what we need from what we read, feel, know or may understand and, of course, use. Some years ago, before the Internet and computers become widespread, information was just accessible and manageable by expert people. At least, some experts could present the most important information available from trusted sources. Today, we can access much more information and with the right tools we can make some sense of it. Problems remain because of the amount of information, the lack of a common structure and our difficulty in judging its quality. This means that we still need to search for expert help. Even experts face a similar problem.

What do we need information for? First, we may define information as the necessary knowledge to take decisions and/or actions. This means that without knowing how much money we have in the bank and the car price, it would be strange to buy one. Both the information about our bank account credit and the car price is important but it will not be sufficient. We need to know more about cars, the place and the people who sell the cars as well as different buying alternatives. This involves a much more complicated information set that we must obtain in order to make the decision.

More important than the information itself is its relation with other information. We can see this as a complex network of information chunks that must be inspected and related in terms of a given situation. Here we can describe a given situation as a context; for example, in the context of buying a car, it is also important to know more about the car market.

How to form a given context? This is where expert people may help. They know what will be important and where to find information to inform our decisions. To form a proper context we need to have knowledge about what is relevant and where we can find it. However, to reach an expert could be expensive and if demand is high, there would not be enough experts. The more obvious solution is to learn about the facts oneself: in buying a car we spend time and money reading magazines, seeing stands and talking with friends, normally we do not use expert services. However for more complex things like buying a house, normally we seek the services of an estate agency, lawyers, and others.

One of the interesting aspects of information is that it is in a constant evolution and it has value only when and where it is needed. Thus, better support for accessing information is needed, and support for reasoning about it based on a proper context. This enables us to take advantage of the available free information on networks like the Internet. A possible approach is to focus on structuring the knowledge to describe the context as opposed to just trying to collect, store and relate the information Using proper tools will allow the integration between information sources and a context structure to support its use.

If we envisage such a structure for representing abstract information that can be used to describe a context, we may have an additional support for reasoning and structure information. A structure like this can be used to render a three-dimensional representation of it supported by computer graphics acting as an interactive "real image". We can built such a structure and represent it as an interactive visualisation. We can also enhance the structure allowing several people share the visualisation and propose new elements or modify or delete the existing ones because of the common context "image".

This is what about my PhD project is: use of a common structure for knowledge sharing represented as a three dimensional interactive visualisation to support both individual and collaborative creations of contexts. Imagine the impact this may have in helping people in learning and decision taking.