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Experience of e-Social Science: A Case of Andy Turner and MoSeS

Andy Turner

Abstract

The original abstract for this paper is available via the following URL:
http://www.geog.leeds.ac.uk/people/a.turner/publications/abstracts/OxfordeResearch2008/

Background

The UK e-Science Programme began in 2001 and has provided significant funding for research, some of it targeted at getting computer scientists working with other scientists to develop applications in science.

It was not until I prepared for a SIM-UK meeting hosted at Ordnance Survey (OS) in March 2005 when I began to investigate e-Science. SIM-UK was forming as a collaborative organisation trying to attract funding to develop models of the UK that might be useful for general forecasting and specific applications, for example, planning for the outbreak of a potential influenza pandemic, planning to reduce flood risks in urban areas, mitigating road accident risks. I accompanied Ian Turton who was then director of The Centre for Computational Geography (CCG) at The University of Leeds. Ian helped me prepare for the meeting by pointing me to some documentation on Grid Computing and suggesting I search for further information on e-Science.

The SIM-UK research group meeting in March 2005 crossed organisational boundaries, and involved various academic experts from different institutes and specialisms. SIM-UK involved: computer scientist, who were Grid Computing and e-Science experts; application experts from domains including geography, who were experts in wed based geographical information systems and collaboration; and, non-academic data experts from the OS. There was a collision of language and terms and a lot of information about standards and organisations was shared. Essentially there was a brainstorm that suggested and developed ideas around the general theme of the meeting. I was impressed by the collaborators and how they worked together. In particular there was a great deal of openness and willingness to share. Also, documentation about the meeting and draft proposals were developed collectively as the meeting took place. We wanted to think of an application that would demonstrate the power of Grid Computing and e-Science and that would help solve a geographical and/or social science problem.

I came away from the meeting full of enthusiasm for SIM-UK and excited about the potential use of OS MasterMap for this research. I also came away imagining the utility that internet enabled laptops would provide for such a meeting, appreciating how laptops in general could be used to search for and access additional information and help take notes that could be shared with collaborators even before such a meeting was closed. This was a glimps of the way I wanted to be working. I was hungry to practice and develop my e-Science skills and knowledge. Although this meeting did not not seem like a new way of working for most participants, it was new to me.

It would be almost a year before I was blogging about what work I was doing, as I was doing it, most of the time. A few months after the SIM-UK meeting I prepared to work on Modelling and Simulation for e-Social Science (MoSeS) a first phase research node of the National Centre for e-Social Science (NCeSS) lead by Mark Birkin. My investigation of e-Science intensified and I began to consider how to define e-Social Science when I learned that it was relatively new and still being defined. Could e-Social Science be more than simply e-Science applied to the social sciences? Was

it also about doing research in a social/more open way?

This publication is a personal reflection on my uptake of e-Science and of MoSeS, and a consideration of e-Social Science as something more than simply e-Science applied to the social sciences. I had intended to draft this article and request contributions/feedback from MoSeS colleagues, however, I have not found time and this draft is still evolving on the night before the deadline. Further apologies that this is not the final article and only the start of the story. I will presented the full article at The Oxford eResearch Conference 2008 when version 2.0.0 or later will be available via the following URL:
http://www.geog.leeds.ac.uk/people/a.turner/publications/papers/conference/OxfordeResearch2008/

MoSeS starts for the Promised Land

Prior to the first phase research node initialisations, NCeSS had been developing Pilot Demonstrator Projects (PDPs) and establishing a UK e-Social Science community by organising themed workshops. The history of the evolution of NCeSS is mainly hidden in reports many of which are not public.

MoSeS builds on two successive PDPs called Health-Care Decision-Support Resource Allocation (HYDRA or HYDRA I) and HYDRA II. As a research node, MoSeS was to be more involved in the development of NCeSS as a whole and have a broader remit to support modelling and simulation in e-Social Science.

MoSeS had a core modelling objective which was to develop a demographic simulation model of the UK producing data from 2001 to 2031 on an annual time step at an individual level. This demographic modelling was to be an example activity in modelling and simulation for e-Social Science. It was hoped that any efforts to model and simulate something else would be able to look at how MoSeS did the demographic modelling and simulation and at least follow the approach if not re-use specific modelling and simulation components, in particular software and configurations. In addition MoSeS results were to be replicable from primary source data in an automated way given sufficient data storage and computational resources.

Work on MoSeS was divided into 3 strands: demographic modelling; applications of demographic models; and, user interface and portal development. All strands were to begin concurrently, and there were few dependencies between any strands. The applications of demographic models could be based on existing demographic models until such a time as the new and improved MoSeS demographic models were available. The applications were: health care planning as in HYDRA and HYDRA II; transportation research; and, some unspecified business application. The demographic modelling was divided into two parts: the 2001 initialisation of an individual and household population database for census areas of the UK; and, a dynamic simulation model on an annual time step for 30 years up to 2031. I set to the 2001 population initialisation work, Belinda Wu began to develop a dynamic simulation model, Paul Townend started to develop a specification for the system and began to consider different architectures. Mark's role was to manage and oversee this work, report progress to the NCeSS hub and develop publications, and liaise with domain experts that were drawn in to help develop collaborations with potential end users. I had an additional role to back up Mark and work closely with Paul to understand the technical aspects of his work. We were all involved in progressing the applications and additional activities. One such additional activity was to do was organise An Agenda Setting Workshop on GIS and the Grid.

I wanted to lead by example and develop all MoSeS outputs in an open and collaborative e-Science fashion implementing appropriate standards (as developed by standards defining organisations) and basing all automation on open source software components. I wanted to make available information about what we were planning to do and how we were planning to do it as structured information available as publicly available web content. I planned to use a Wiki to develop some of the web content, but I began by developing my own web pages. In the first few months my main focus was

in developing Java code to handle 2001 UK Human Population Census Data.

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