

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

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Abstract

The original abstract for this paper is available via the following URL:

<http://www.geog.leeds.ac.uk/people/a.turner/publications/abstracts/OxfordResearch2008/>

1 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, and 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.

SIM-UK crosses organisational boundaries, and involves various academic experts from different institutes and specialisms. It involves: computer scientists, including Grid Computing and e-Science experts; application experts from domains including geography, some who are experts in web 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 in the meeting at OS. 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 aware that I should be making better use of Information Technology (IT). I was aware of the utility that internet enabled laptops provide such a meeting. I appreciated how computers in general could be used to search for and access additional information and help capture

information about a meeting leading to a reference resource that could be shared. The SIM-UK meeting gave me a vision of the way I wanted to be working.

It would be almost a year before I was [blogging](#) about what work I was doing, at the earliest opportunity. Why did it take so long to get my act together? I can't easily answer that question, and although I'm sorry it took me so long to get going, at least I got going.

A few months after the SIM-UK meeting at OS, 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, it was new and exciting for me, and I began to attend introductory workshops and training events. I got the impression that [e-Social Science](#) was not well defined. I wondered if e-Social Science would be regarded in the future as more than simply e-Science methods applied in social science. Was it also defined by doing research in a social/more open way?

This publication is a personal reflection on my uptake of e-Science and of MoSeS. One of the things I am doing now which I think helps most is blogging. I can detail what I have done and what I plan to do in my blog and the hope is that this will encourage collaboration. I had intended to consider in detail e-Social Science as something more than simply e-Science methods applied in social science. During the writing of this article I got lost with this philosophical aspect, so it is only briefly introduced. I had intended to draft this article and request contributions/feedback from MoSeS colleagues, however, I have not managed to do this yet.

Section 2 sets the scene at the start of MoSeS up when I begin to realise the benefits of blogging. Section 3 describes how I developed my blog and why and considers some uses for it. Section 4 introduces the philosophy of e-Social Science. Section 5 is a reflection on MoSeS.

2. MoSeS Starts for the Promised Land

MoSeS builds on two successive PDPs called Health-Care Decision-Support Resource Allocation (HYDRA or HYDRA I) and [HYDRA II](#). As a research node of NCeSS, MoSeS was to be more involved in the development of NCeSS as an organisation and it had 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 (software and configurations).

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 was set to the 2001 population initialisation work. A couple of months later, [Belinda Wu](#) began to develop a dynamic simulation model. About the same time, [Paul Townsend](#) 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, develop publications, and liaise with domain experts that were drawn in to help develop collaborations with potential end users. I was assigned an additional role by Mark to oversee Paul's work and understand the technical aspects of what he did. This was both a knowledge transfer exercise, but also a safety mechanism to mitigate in case something were to happen to Paul.

I wanted to lead by example and develop all MoSeS outputs in e-Science fashion, I understood this to be open and collaborative, and involving the implementation of appropriate standards (as developed by [Standards Defining Organisations](#)) and basing all automation on [Open Source Software](#) components. I wanted MoSeS results to be replicable from primary source data in an automated way given sufficient data storage and computational resources. 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](#)'s to develop some of the web content. While I tried to get a Wiki configured for use's to use, I began to develop my own [MoSeS Web Pages](#) to detail what was being done. I wanted to follow best practice and learn from others in NCeSS and think about what else they wanted.

3. Blogging

About 6 months into MoSeS I was recognising that details of what we were planning to do and had done were being forgotten. It was becoming increasingly clear to me that we had not provided an adequate information trail and we ran the risk of going around in circles rather than making progress. I realised that what I needed was to develop structured information about MoSeS and while I was at it, everything else about my research, the people I worked with and the relevant organisations. If I was going to be modelling everything, and advocating that everyone should have web content that detailed their research, I needed to get mine in order. I decided to start blogging.

Initially I wanted my blog to record what I was reading and what I thought of it. The more I blogged, the more detail I was able to add. I was learning a key skill. I wanted to be able to refer to what I did and when. There was a significant overhead in getting tis set up and learning how to do it, but it was not long before I felt that the benefits outweighed the costs. Blogging was saving me time and developing a useful resource. Also I did not have to remember so much detail from one meeting to the next. This was liberating and helped me concentrate. Without worry I could devote full attention

to writing a piece of code knowing that once the task was done, I could pick up other threads of work by simply looking back in my blog. The act of writing things down also helped me remember things and detail them further.

My original motivation for blogging was selfish and for a long time it was largely just for my own benefit. But I did also envisaged that my blog could be useful to others. I thought they might be useful (like the blogs I began reading) for others trying to keep up with developments in my field of expertise. Also in the long term I thought that the web content I was generating would be useful to NCeSS colleagues or others interested in studying how I research. I won't shy away from introspection myself!

It was not long before Paul was using my blog to keep track of what was going on in MoSeS. Without his encouragement, without his use, I might not have kept it going. Others who I met with started appreciating my blog as records of meetings. Even my boss started using my blog although it was a long time before he admitted it was useful!

I tried to encourage MoSeS colleagues to blog in a similar fashion. This has not really happened, but we do kind of collectively blog as well as send in our regular reports to the NCeSS hub to let them know what we've been up to. We now have a role of meeting chair which circulates around the usual participants of our technical meeting. The meeting chair is responsible for documenting the meeting, and we have a shared place where this documentation lives. It is available online, so in a way MoSeS is collectively blogging.

4. Philosophy of e-Social Science

A few things have been written about the practice of e-Social Science (Jankowski 2007, Scott and Venters 2007). Unfortunately I have only read a short abstract of Scott and Venters article, so I can't comment in detail on that.

While I have been writing this article I have still been changing my mind about what e-Social Science is. Is it open by definition or not? I really don't know the answer and I am coming to realise that perhaps it is better if I unask this question. That's not an easy thing to do, but I will duck out. Philosophy is perhaps not one of my strong points, so I will conclude with a brief reflection on MoSeS and perhaps come back to this later...

5. Reflection on MoSeS

Although the end of MoSeS funding will happen this month, it will not end then. I have a vested interest in keeping and developing the information about it. It is too early to judge MoSeS impact and there is still a lot of tidying up to do before I would personally regard it as a success. Nevertheless, there are many positives to be taken. I have learned a great deal over the last 3 years and found a community of collaborators that I am happy and excited to work with.

I still hold out hope that some of the outputs of MoSeS will be used in further applications. We will be using MoSeS demographic work in GENESIS and it will

continue to feed into transportation research. It would be great also others outside academia in service planning were to continue using the results and system we have developed. The demographic modelling work and the data outputs can be genuinely useful in a wide number of applications.

One view of MoSeS, was that it was a project that funded three and a half researchers over three years. Little in the way of computer equipment or data was purchased. The expectations of what what would be delivered should be commensurate with that scale of effort. Yes, at the start of MoSeS we hoped to have a SimCity for real by the end, but We have learned that this was beyond our reach for now.

I had hoped that the demographic modelling work would have been more collaborative. There is research out there looking at aspects of demographic change, like fertility, that we should draw from. I would argue that too much of the dynamic simulation was developed from scratch.

For the last three years or so, I have been charting in an open way MoSeS, laying down a history detailing information and providing links to related people and organisations. MoSeS is still generating demographic data, but the main focus in the last month is to finalise all documentation that details the specifics of the demographic models and data, the set of applications and the portal interface. We are finalising a set of web pages, a web site, that details all the development work we have done, the details of project meetings and collaboration efforts.

At a reasonably early stage during MoSeS, I began to appreciate the potential benefits of an information trail that documented our research process. I thought about realising a desire of NCESS colleagues to look introspectively to try to understand how research is done in practice. I don't know if anyone will make use of the structured information that I have spent time compiling other than myself, but even if I am the only user, I feel it was worth it. Developing structured information that details research in an open way, has many potential benefits, and that these benefits if realised will far outweigh the overhead, the cost of learning to do and doing it.

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