Modelling the integration of Geo-ICT in a scientific discipline

'In search of an explanatory model – 1'
The impact of scientists on their field is usually accounted for by the number of publications in renowned journals or by the number of citations to these. We believe, however, that in order to 'measure' the integration of GIS in a science adequately, we have to look beyond publications, and also consider the use of Geo-ICT at conferences, in university education, etc. Also, it is as much about quality of use as it is about quantity. Based on our interviews with GIS-experts in archaeology and historical sciences, the first two disciplines that we have looked at, we have describe below our initial thoughts on the different stages of integration of Geo-ICT in a scientific discipline (see: fig. 1). Of course there are many other models on the change or growth of use of technology, but most of these were designed and tested for a business environment, for example Nolan's 'growth model'. Based on our first explorations, for the academic context, we come to the following description:

In the first stage there is a small group of 'champions' exploring the possibilities of Geo-ICT and publishing their findings. From these publications they are invited to appear as guest speakers in other universities (stage 2). This results in invitations for conferences, on which they will at first be the only ones presenting on GIS. It takes a while before full conferences, or at least a large part of them, are actually being dedicated to GIS (stage 3). These conferences stimulate the demand among academics for training in the use of Geo-ICT (stage 4). Following on from there, the same scientists can then offer courses in GIS in their own universities – initially as an optional part of the degree (stage 5). To be able to use Geo-ICT effectively for their research, the construction of large-scale databases will be a next, necessary step (stage 6). The availability of such data collections will no doubt further stimulate the demand for training in their use, particularly if the first examples of their successful application are being published. This can eventually result in the full integration of Geo-ICT in research and teaching, as we understand it to be: a situation in which a substantial part of the academics use GIS structurally for their research and GIS-training has become a compulsory part of both the Bachelor- and Master's programmes (stage 7).

Now that we have a description of the process, we can start evaluating it from practice. We are particularly interested in the 'diamantes' or 'triggers' that enabled or stimulated a move into the next stage: which specific publications or alterations in methodology and technology form the crucial milestones in the interaction between Geo-ICT and academic disciplines?

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