



GINIE: Geographic Information Network in Europe

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Document Peer Review Report

by

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Documents reviewed:

First Review Towards a European GI Strategy: the Lessons Learned from GINIE (D 2.11.1), October 2003

Towards a European GI Strategy (D 2.11.2), October 2003

The opinions expressed in this document are those of the consultant alone. Observations, conclusions and recommendations are based on the consultant's past close association with pan-European spatial data infrastructure initiatives, beginning with GI2000 in 1995 through October 1999, working on behalf of the European Commission's DG Information Society, Luxembourg. Since January 2000, the consultant has conducted extensive research into SDI developments regionally and globally as part of post-graduate research at City University, London, UK, and has presented such research at numerous international conference, in the press and in peer reviewed journals and books.

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Introduction.

This GINIE project document review exercise focuses on the final European GI (Geographic Information) strategy proposals of the project partners, based on numerous studies and expert meetings conducted throughout the project plus analyses of prior studies examining related spatial data infrastructure (SDI) issues. The documents identify and reaffirm the importance of GI to European economies, governments and society, while identifying barriers to successful implementation of national and regional (trans-national) SDIs, especially within the complex multinational, multilingual and multicultural environment that characterizes Europe.

Based on this consultant's prior experience with EC initiatives to create a pan-European GI infrastructure (GI2000: 1995-1999) and continued intensive research into the topic of SDI formulation, implementation and impact, the GINIE project is to be congratulated on reaffirming both the main barriers to successful SDI performance and highlighting the main steps and key elements in SDI implementation where effort should be focused, with appropriate priorities. The documents reflect this well.

The vision and strategy presented in the ultimate project document, "*Towards a European GI Strategy*" (hereafter "D-2.11.2"), should become the 'bible' for SDI implementers everywhere. Of course the real devil is in the detail, and with finite resources, no government, national or trans-national, can implement everything. Also, existing diverse national information cultures and differing approaches to broad e-government philosophies will also drive the direction taken in regard to SDI formulation, which is only one element of a nation's total information society commitment. The remainder of this review will offer the consultant's comments on the individual documents.

"First Review Towards a European GI Strategy: the Lessons Learned from GINIE" - (D-2.11.1)

This document (hereafter 'D-2.11.1') was the more detailed (penultimate) description for a European GI/SDI strategy, followed by D-2.11.2. Document D-2.11.1 provides a concise summary of the findings of the many experts' meetings, bespoke GINIE studies into specific SDI issues and analyses of prior studies done outside the GINIE remit which are highly applicable to the GINIE brief. The document accurately stresses the importance of understanding where a GI strategy fits into the wider pan-European policy contexts set by the EU's Information Society vision and strategy. The value of GI to society, the economy and e-governance are all demonstrated, with harmonized GI offering both direct and indirect benefits to the information market and creating more efficient economies plus tangible benefits to citizens (security, better planning). Just as the telecommunications and transport infrastructures have become virtually indispensable to modern societies, generating enormous economic and social benefits (as well as some problems!), so too will GI perform an indispensable role in underpinning both of these current infrastructures as well as newer information-driven economies.

The document confirms an earlier definition of Spatial Data Infrastructure (SDI) adopted in prior pan-European SDI initiatives, i.e. "a framework of policies, institutional arrangements, technologies, data, and people that enables effective sharing and using of geographic information". As with other infrastructures, SDI must "operate at all levels", be "well connected with other related infrastructures", be "regularly maintained" and have "clear lines of responsibility". While these attributes are not disputed, what is sadly lacking in many of even the more successful SDI implementations today are the "clear lines of responsibility" that underpin the "regular maintenance". Even in the USA, which can be said to have kicked off the current drive towards formalized SDI creation, the lines of responsibility are not at all clear and maintenance of the infrastructure is an enormous problem, not yet resolved.

Of the barriers to successful SDI implementation that are identified, the document correctly identifies those that are currently being attacked by the EC's INSPIRE (Infrastructure for Spatial Information in Europe) initiative. More importantly, the document highlights those barriers that INSPIRE has not yet, nor may ever be able to, conquer, relating to cultural and organisation issues, lack of coordination and missing strong, continuous political commitment and leadership in regard to SDI development. Barrier such as interoperability are being tackled, but will take years to become totally effective and conducting more economic cost/benefit studies may be of little use if there is no strong political leadership to accept the results.

The list of elements for "successful SDI" is well considered and highlights once again the importance of "clear authority" that is "underpinned by consistent political support at the highest." Such long-term, high-level support seems to be beyond the reach of the current pan-European initiatives. Since most spatial data is generated by and used within the public sector, the document highlights the many considerations falling under the "political support" label. This simply reaffirms the importance of such support while at the same time causing concern when it is evident that such support is often missing in even the most advanced SDI initiatives, whether at national or regional level. There appears to be no 'magic bullet' for creating such long-term, high-level support. This may be an inherently unsolvable dilemma cause by the very ubiquity of "geographic information" - i.e. who should be officially "in charge" of an information realm that is so vast? Thus, overall responsibility will tend naturally to be invested in committees or councils representing a vast array of interests, even within a single government, before the different demands of local, national and regional (trans-national) government are considered.

Selling the benefits of a properly constituted SDI providing ready access to high-quality, current, accurate GI seems to be a never ending problem. Several studies already exist, spanning more than a decade, from highly reputable research firms, which time and again stress the economic benefits of GI, both direct and indirect. The conclusions of some of these studies are rehearsed in the document. Key phrases (and targets for SDI promoters) are "applications delivering quick wins" (e.g. risk management - the real "killer" applications since people may die!) and "managing expectations" which involves continues education, awareness raising and changing organisational structures (more distributed versus centralised responsibility requires GI to permit the necessary level of integration for service delivery). Most importantly, selling benefits needs to be "realistic, not based on hype". One questions just how seriously politicians or major industrial actors take pronouncements such as "GI underpins over X hundred billion euro of economic activity in the economy as a whole" - i.e. the claims seem to be too grand to be true!

The importance is identified for strong coordination, specifically via "multi-agency frameworks", in achieving a successful SDI, whether at national or regional level, based on observations of actual SDI implementations. The roles of coordinating bodies are well enumerated and examples from the USA are offered. Although the FGDC is held up as a shining example of success, this seems to discount the growing discord among non-federal users and agencies in the USA, who have conducted and published their own research showing that the US NSDI is not working as well as they had expected and offering more radical suggestions for coordination, such as a national council for GI, as opposed to simply assigning the coordination role to a single federal agency (FGDC). While the FGDC has achieved significant advances in standards and metadata production, this is only one aspect of the overall needs for a successful SDI. The lesson for Europe is well stated, i.e. if complexities at the level of a single nation such as the USA, which already has a public sector information "friendly" legal infrastructure, cause problems with successful SDI implementation, what hope do we have for a pan-European initiative without "higher, sustained over time, and backed by appropriate legal frameworks, and dedicated resources" commitment? The distinction is then drawn between operational and strategic coordination, in support of earlier statements that overall coordination can be split into such categories, as long as all efforts are coordinated at a higher level or according to an umbrella vision and

strategy. As one might expect, implementing “operational coordination” is relatively more simple than for “strategic coordination”, since the former relates to specific activities that can be well defined, including concrete success criteria. This level of monitoring success is much less tangible for strategic coordination.

The document identifies and stresses the prime importance of embedding SDI in e-government strategies, underpinning delivery of e-services. The section examining the role of SDIs in e-government provision is well considered and recognises from the outset that GI is only one type of public sector information (PSI), that often falls under legal mandates covering all PSI, and GI both underpins and must co-exist and be integrated with non-GI PSI to be of most use to society. The lack of formal, coherent information policies by and across institutions severely limits how well e-government services can be provided and how deeply SDI elements can be embedded in those services. The question of how to fund SDI development is key and fraught with complexities, especially for a pan-European initiative. Governments across Europe have adopted often radically different approaches to PSI collection, maintenance and provision, especially in regard to pricing for dissemination to the information market, as opposed to how the PSI is used by a specific government agency for its legally mandated work. Different models of funding exist across the EU, ranging from total government funding (“taxpayer pays”) to private sector funding (“user pays”), public sector funding (fees charged to public agencies) and indirect funding (advertising, etc.). Public-private partnerships already exist or are being explored in more countries and between agencies and industry within individual countries. This sometimes raises questions of IPR and liability. The document predicts that any funding model for the pan-European SDI will of necessity be a mixed model, encompassing both grants and cost recovery, with government grants predominating for some agreed level of pan-European core GI data.

The document presents a very lengthy section on technology issues which is well researched and highlights the importance of interoperability at all levels - technically, semantically, between systems, for data (core and thematic), for e-service provision and the technologies needed for data discovery (metadata, XML, registries/catalogues and portals). Problems with implementing such advanced technologies, many of which are still evolving (a situation that will continue probably forever with any ICT), are discussed, especially in relation to the complexity created by addressing a broad pan-European community which already enacts many EU directives under the subsidiarity principle.

The importance of moving from local to global levels of SDI implementation warrants a section on its own in the document. Earlier pan-European SDI initiatives (i.e. GI2000) took very much a “top down” approach by specifically focusing on a subset of “core” or reference GI, at some scale acceptable to the national mapping agencies, while offering mainly lip service to the needs of local communities of users. Current SDI thinking recognises the importance of addressing the needs of all potential producers and users of GI and across multiple sectors and policy regimes. The wide range of regional policies already in effect further complicates defining the core needs of an pan-European SDI, while also providing numerous opportunities to demonstrate the benefits of such an infrastructure.

SDIs do not create themselves nor can they be created without significant resources - money, time and people - being devoted to the effort. Thus, capacity building is crucial if a truly pan-European SDI is to be created based on a level playing field for all EU member states, especially with respect to the 10 new members. While many of the accession states have quite sophisticated GI infrastructures, these are not harmonised and vary considerably in quality and completeness across the 10 states. Furthermore, the accession countries need firstly to better understand the raft of existing EU legislation that they will be required to implement on attaining full EU membership, then reassess how their existing GI infrastructures can deliver the information services needed to help implement and monitor that legislation once translated into national law. The document stresses the important role that national GI associations play in this process, especially for knowledge transfer. The key requirement in capacity building is not simply technology or even money to pay for data

collection, but rather “skilled human resources, coordination, and clear frameworks of agreement. People are central to the whole enterprise...” Once positive aspect relating to capacity building is that entire societies within the accession countries have already shown the ability to mobilise working towards commonly shared goals and this should translate well into SDI formulation and implementation. The document concludes with a key discussion on “managing change”, pointing out conditions for government reform needed to enable all governments (not just accession countries) to fully adjust to the emerging information society and knowledge economies. There is little purpose or effect in promulgating grand visions, implementing government policies and even legislation if the capacity and culture is absent that is needed to implement these visions, policies and legislation. Yet many politicians shrink from the sheer scale of change needed and the associated costs.

“Towards a European GI Strategy” - (D-2.11.2)

This document was a key deliverable of the GINIE project, as it presents the final consensus on a strategy for implementing a pan-European SDI. It draws heavily on the D-2.11.1 document which preceded it in time, that document being a compendium and synthesis of results achieved and lessons learned over the course of the project.

This final strategy document begins by accepting that the SDI “overall picture in Europe is still one of considerable fragmentation, (due to) ...multi-cultural, multi-lingual, and multi-national nature of Europe, (and) ... because the main challenges are organisational, institutional, and political in nature.” Therein lies the main message for European SDI implementation, i.e. while technology (ICT, data, standards, metadata tools, data grids, etc.) can offer data harmonisation solutions, the real problems to be overcome in achieving a truly efficient infrastructure are inherently much more difficult to resolve.

For me, the key statement in this whole document appears very early regarding whether or not a pan-European SDI will ever be implemented. It is “...strong leadership and a balanced representation of stakeholders from government, industry, research and the European Commission are a *conditio sine qua non* for instilling and implementing any strategy for Europe.”

Yet it is just this degree of highest level political support and strong leadership that appears to be absent from pan-European SDI development initiatives. During the whole of the GI2000 ESDI process (April 1995 to October 1999), despite the contributions of scores of experts, consultants, GI associations and interested national government bodies, there was never any truly high-level interest in GI infrastructure, not even at the level of a single EC Director, let alone a Director General or Commissioner (despite what the public may have been led to believe!). Much fanfare accompanied the April 2002 Memorandum of Understanding between the EU Commissioners responsible for DG Environment, DG Eurostat and DG JRC regarding the INSPIRE initiative.

In April 1999, due to a publicly stated “lack of Commission resources” and political changes (resignation of the entire Commission!), GI2000 was effectively stopped. In October 2003, the first rumours emerged (now confirmed in January 2004) that INSPIRE would not proceed to the much needed next stage of a legal framework Directive “due to lack of Commission resources” and other political considerations (new EU Parliament elections, new Commissioner appointments brought about by accession members joining the EU). History repeats itself. Although INSPIRE is not declared “dead” as was the case for GI2000, and hope still remains that its political focus (the framework Directive) will be resurrected either in 2004 or 2005, one has to question whether simply having high-level political support is sufficient. Without the creation of a totally separate institution, agency, pan-European GI council or similar, whose continuity can be guaranteed (similar to EEA?) beyond the life of the governments of the day, whether national or regional, will this loss of political support and focus continue to haunt regional initiatives such as ESDI?

This question is not raised in the document, although the purpose of the once postulated Advisory Board for Geographic Information (ABGI) is discussed, along with the reasons that the continuity-providing financial and administrative structural components of the ABGI were not confirmed, partly because the INSPIRE initiative envisioned a similar body, the European Spatial Data Committee (ESDC). If INSPIRE loses its political backing (i.e. no framework Directive), yet continues as a grand project, vision or strategy, to be implemented using whatever project funds may be found from time to time from a range of EU-supported programmes, how would the proposed ESDC be any more significant or useful as a coordinating body than existing organisations such as EUROGI (supposedly representing GI users across Europe) and EuroGeographics (representing the European national mapping agencies, key providers for the core reference data that will underpin any pan-European SDI).

GINIE found that GI is important to society, has a crucial role to play in improving society, in planning and increasing efficiency of governments and economies. GI has value in its own right as an information product and as data that underpins other infrastructures (transport, water, telecommunications). An SDI is needed to make most efficient use of GI, both at national and pan-European level. The major barriers to wider and more efficient use of GI and creation of SDIs were identified and no one questions these. Key barriers are those relating to coordination, leadership, cultural and organisational issues, which do not have ready answers nor can they be overcome simply by throwing money at them (as opposed to many technological barriers that can be surmounted through enhanced use of ICT and related data technologies). The document sets out the GINIE project members' vision and strategy, based on wide consultation throughout the project. It is comprehensive and enumerates specific measures - 43 in all - that could lead to or are a prerequisite for creation of a fully functioning, economically viable pan-European SDI able to support a wide range of policy development and monitoring needs across the whole of Europe. An implementation strategy is outlined. Unfortunately, without continued strong political leadership and funding for necessary preliminary activities, including either an ABGI or ESDC, one wonders just how far we will get in fulfilling the dream of achieving the first truly functional regional (trans-national) SDI in the world.

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