



EUROPEAN LEGISLATION AS A DRIVER FOR GERMAN GEOBUSINESS

Short Version

On behalf of the
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EUROPEAN LEGISLATION AS A DRIVER FOR GERMAN GEOBUSINESS

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1. INTRODUCTION (ORIGINAL PP 3–4)

The geo-information business is a highly innovative market. In recent years, however, its development in Germany has been constricted by non-transparent standard conditions and licence terms imposed by public data-providers. But now, a number of European Commission activities are giving a positive indication that access to and reuse of geodata specifically will be enhanced considerably in the future, and this will accelerate the geo-information market in Germany as well.

The study provides a classification of the associated regulations, and illustrates how the German geo-information market can be galvanised by these EU activities. The legal analysis will focus on the Geodatenzugangsgesetz (GeoZG), the German act that transposes the INSPIRE Directive of the European Union into national law. As the GeoZG extensively determines the technical methods for providing geodata, it is the economically relevant regulation for geobusiness.

The study will identify the new business models that result from the modification of the legal basis, and evaluate their effects. In addition, business models realized within key projects of the German Commission on the Economics of Geo-Information (GIW Commission) will be analyzed.

The results of the legal analysis are presented in the Web-GIS internet application GeoBusinessLaw. This contains map-based information relating to the different regulations in Europe and in Germany. The application's web-check tool provides users with information concerning different geodatasets, access to them, and the barriers to access to them and to their reuse.

Finally, eleven recommendations will be given concerning the activation of German geobusiness.

2. THE EU DIRECTIVES (ORIGINAL PP 4–15)

2.1. ENVIRONMENTAL INFORMATION

The directive of the European Parliament and of the Council concerning public access to environmental information (2003/4/EG) came into force on 14 February 2003. It establishes the granting and the definition of the public right to obtain information with environmental relevance from authorities with a duty of disclosure. Thus, governmental transparency and a certain controlling function of the public in terms of a positive influence on the environmental protection can be accomplished. The directive does not explicitly aim to promote commercial reuse of environmental information.

Its implementation in Germany is effected through the Environment Information Act (Umweltinformationsgesetz = UIG), which came into force on 14 February 2005. Before October 2009, the directive was implemented into federal state laws.

2.2. THE REUSE OF INFORMATION

On 17 November 2003, the European Parliament and Council passed a directive on the reuse of information by the public sector (PSI Directive 2003/98/EG).

With this PSI Directive (PSI = Public Sector Information), the European Union intends to promote the information- and knowledge-based economy as a foundation for sustainable growth, high employment rates and a consistently high quality of life. But ambiguities concerning rights of access and the reuse of public sector information, in particular, have so far blocked the release of the economic potential.

Barriers to the private use of PSI in the internal market are to be dismantled by the PSI Directive. The member states are not compelled by the PSI Directive to grant access to PSI. In 2008 an evaluation of the PSI Directive showed that the member states are satisfied with the directive – but reusers complain about high prices, restrictive licensing and lack of information about the availability of PSI. In particular, the granting of exclusive rights and the unpreparedness of authorities to reduce prices meet with criticism.¹

According to an analysis, between 2002 and 2007 the market for PSI increased considerably in three sectors: the geographical sector by 350%, the meteorological sector by 70% and the legal sector by 40%.²

In Germany, the PSI Directive was implemented in 2006 by the Information Reuse Act (Informationsweiterverwendungsgesetz = IWG). The scope of the IWG extends to all information available at public bodies. Thus, there is no claim towards public bodies for the provision of information, i.e., public bodies are not obliged to

**ambiguous legal
situation blocks
release of economic
potential**

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**strong market
growth for public
data**

**no claim for
provision of
information**

¹ see: Mitteilung der Kommission an das Europäische Parlament, den Rat, den Europäischen Wirtschafts- und Sozialausschuss und den Ausschuss der Regionen: Weiterverwendung von Informationen des öffentlichen Sektors – Überprüfung der Richtlinie 2003/98/EG - vom 07.05.2009, [SEC (2009) 597], S. 13.

² see: MICUS Study: Assessment of the Reuse of Public Sector Information in the Geographical Information, Meteorological Information and Legal and Administrative Information Sector, 2009.

compile information, to make adjustments or to pursue the issuing of information for its reuse.³

2.3. GEODATA INFRASTRUCTURES

There are still considerable discrepancies regarding the availability, quality and accessibility of geospatial data. INSPIRE is intended to establish a European geodata infrastructure (GDI) which provides an exchange and a common use of interoperable geodata and geo-services consistent over different administration levels and sectors.

**free exchange
of public data
in Europe**

INSPIRE – Infrastructure for Spatial Information in Europe – is equivalent to the GDI that is planned to be established throughout the EU. The Directive 2007/2/EG of the European Parliament and the Council of 14 March 2007 provides the basis for the establishment of this GDI. The directive addresses the 34 spatial data themes required for a vivid, integrative environmental policy in the EU. In November 2003 the Federal Chancellery, as well as the state and senate chancelleries of the federal states in Germany, decided on the establishment of a German GDI (GDI-DE) as a project at all levels between the German federation, the federal states and the local authorities.

In order to support the integration of the national infrastructures in INSPIRE, the member states must provide access to their infrastructures via a geoportal that will be operated by the Commission. The metadata required for the definition of the requested geodatasets and geo-services is being composed.

Essential elements of the GDI-DE are national geodatasets as a basis, then geodata services and administrative structures for the coordination as well as semantic standards for geodata and geodata services.

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Even if the INSPIRE Directive is preferentially directed at the utilization of geodata among different public bodies, it also makes available to private users data that has been publicly collected. Concerning the reuse of this data, the INSPIRE Directive is effective irrespective of the PSI Directive. The targets of the PSI Directive are intended to be seen as an endorsement.

**public data open
for private users**

³ BT-Drs. 16/2453, 25.08.2006, ad § 1.

3. ANALYSIS OF THE LEGAL IMPLEMENTATION OF INSPIRE IN GERMANY (ORIGINAL PP 16–57)

The main point of the study is the question of whether or not European legislation can function as a driver for German geobusiness. Thus, the focus of the analysis will be the Geodatenzugangsgesetze (GeoZG), the acts of the German state and its federal states that implement the INSPIRE Directive of the European Union into national laws. As the GeoZG determines the (technical) method for providing data, GeoZG regulations are the economically relevant ones for geobusiness.

3.1. PROVISION OF GEODATA ACCORDING TO THE GEOZG

The GeoZG prescribe the establishment of a digital, interoperable and networked geodata infrastructure as well as a comprehensive obligation to provide geodata and geodata services to the public. Thus, the GeoZG lays the foundations for overall exploitation of the economic potential of geodata.

A legitimate interest in the acquisition and use of geodata is not necessary, and so does not have to be expressed by the user. Due to the general obligation for provision of information, a request for data provision is, according to the Umweltinformationsgesetz (UIG), obsolete. In this respect, the GeoZG pursues the strategy of extended and proactive provision of information established by the new version of the UIG of 22 December 2004 (see UIG §10, new version).

The legal obligation for the provision of data does not, according to GeoZG §11, allow the authorities to delay a decision concerning the reuse of geodata (zweckfreie Bereitstellung der Geodaten ohne Weiterverwendungsvorbehalt).

Here, the GeoZG defines certain **minimum standards concerning the technical provision of geodata**.

Geodata-holding authorities must provide the following services at least:

- **Search services** (for metadata of geodata and geodata services)
- **Viewing services**, providing functions that show, navigate, zoom in and out, and shift and overlap data
- **Download services**
- **Transformation services**, for the geodesic transformation of geodata.

Furthermore, the above-mentioned services have to be accessible via electronic networks (GeoZG § 6 Para. 2). In the current state of technology, the use of the internet as the platform is obligatory.

3.2. THE REUSE OF GEODATA ACCORDING TO THE GEOZG

The interpretation of the GeoZG shows that with a general obligation for provision the legislator has intended to provide a positive decision towards the option of reuse of geodata.

Thus according to the GeoZG, the geodata or geodata services are intended to be generally provided in a reusable form via a geoportal. Thus, if reuse – whether

commercial or not – is allowed, there is no scope for discretion by the authorities. In other words, there is actually a contracting obligation (Kontrahierungszwang).

The competent authority has to decide on a subsequent level whether they will deliver the data free of charge or whether its acquisition and use will hinge on fees or on certain terms of use. (Ebene des „**wie**“, see GeoZG §13 Para. 1). Search and viewing services are generally intended to be provided free of charge. For order processing, an electronic service (ePayment) is to be used.

The competent departments at state or federal state level will define by ordinance the details concerning terms of use and pricing.

In any case, as a framework for implementation, the legal minimum standards of the IWG will have to be considered:

- The terms of use, therefore, will have to be relative and should neither make the desired use impossible, nor lead to a distortion of competition. (IWG § 4 Para. 2).
- For the calculation of fees, the limits according to IWG § 4 Para. 3 have to be considered.
- The principle of equal treatment is valid here, i.e. issues that are substantially the same will have to be handled equally in terms of pricing and the terms of use.
- The terms of use and the prices will have to be fixed beforehand and be published electronically (IWG § 4 Para. 4).

Furthermore, during the course of the implementation the relevant INSPIRE regulations of the EU are to be considered (e.g. concerning the net services). They are directly applicable in Germany (and in all other member states) and therefore, it is mandatory that they be considered.

In order to achieve the legislative targets and an activation of the geobusiness, it is crucial to arrange the technical and commercial implementing regulations effectively while also considering the interests of the economy.

3.3. SCOPE OF APPLICATION OF THE GEOZG

Regarding the factual scope of application, the GeoZG in practice covers the essential geodata themes. The special added value to the status quo lies in the massively improved availability of specialist geodata which is held exclusively by public bodies, and in the provision of metadata that is the prerequisite for the quick location of geodata via electronic search services/catalogues.

A significant challenge holds the practice-oriented handling of the regulations concerning the limits of a geodata provision, e.g. for reasons of public security or the protection of personal data and business secrets etc. (GeoZG § 12). The geodata-holding authorities will thus have the burden of examination and decision. According to the GeoZG – which implies provision of geodata without regard to the individual case – the examination criteria, whether or not barriers to provision exist, are still unclear. Taking into account the importance of this decision and in order to relieve the data-holding authorities, the legislators should regulate these

questions, for example with a catalogue of the data that must fundamentally **not** be provided. An explicit ordinance is, however, not included by the GeoZG.

Incidentally, questions concerning personal data protection will have to be redefined in the GeoZG.

3.4. THE PROVISION OF GEODATA ACCORDING TO FURTHER REGULATIONS

Basically, obligations for the provision of geodata can also result from other sources of law. But here – unlike in the GeoZG – the data is provided only on application by a person or organization.

Thus, the **Environment Information Act (Umweltinformationsgesetz = UIG)** in its § 3 Para. 1, provides for access to environmental information, for example information about the state of the atmosphere, earth and water (UIG § 2 Para. 3 No. 1).

Further regulations can be taken into account as a basis for the provision of geodata, for example the Grundbuchordnung (Anspruch auf Einsichtnahme § 12 Para. 1), the Vermessungs- und Katastergesetz NRW (Zugang und Nutzung von Geobasisdaten, § 5 Para. 1), and the Denkmalschutzgesetz NRW (Anspruch auf Einsichtnahme der Denkmalliste § 3 Para. 5).

The **Freedom of Information Act** (Informationsfreiheitsgesetz = IFG) regulates access to official information (IFG § 1 Para. 1 S. 1). Insofar as the required geodata is official information according to the IFG, the geodata-holding authority may also be obliged to provide the data.

The **Information Reuse Act** (Informationsweiterverwendungsgesetz = IWG) does not define an obligation for the provision of information. According to the wording of the act, it regulates only the reuse of information. Thus, the IWG is based on existing access regulations and is intended to leave these standards untouched.

3.5. IMPLEMENTATION STRATEGIES

According to current legislation, it can be expected that in Germany, despite the legislative powers distributed between the Federation and the federal states, the implementation of INSPIRE will lead to a predominantly coherent legal position. Thus, with regard to the entire federal territory, transparency and security in planning for interested enterprises will be provided. This is the basis for the activation of market potential. Despite some differences in the GeoZG of the Federation at federal state level, a high degree of compliance can be observed. An optimal standardization of the regulations concerning data specification, other technical specifications, pricing and terms of use etc. will be fostered by the fact that the implementing regulations will not be defined by the data-holding authorities, but by ordinance. Thus, within the individual countries and the Federation at least, homogeneous administrative practice will be guaranteed.

A common steering committee will ensure coherence concerning the technical and organizational implementation of the national geodata infrastructure as well as the preparation of the implementing regulations at all state levels. (see GeoZG, GDI-DE § 10 Para. 1).

An essential field of action in organizing the geodata infrastructure will definitely be the competences for the conclusion and processing of contracts. Here, the data-holding authorities will basically be responsible. But from the user's point of view, the number of contracting partners should be kept as low as possible, e.g. one contracting partner at state level or per federal state. For this purpose, a mutual understanding and an appropriate contractual model or a model under company law will need to be developed.

4. BUSINESS MODELS (ORIGINAL PP 58–68)

4.1. THE GEOBUSINESS MARKET

The geobusiness market can be classified into the sectors: navigation and mobile services, planning and documentation systems, as well as geo-marketing.

In Germany all sectors of the geobusiness market have increased their sales. In the navigation sector especially, the volume of sales more than doubled between 2000 and 2007, from €350 million to €728 million. In the year 2000 the market volume amounted to €1 billion, and by 2007 had increased by 51% to just over €1.5 billion. All in all, the geobusiness market prospered without any public sector participation.

**market growth
yes – but without
public sector
participation**

This was caused by the still ambiguous legal situation concerning data access and reuse, as well as the heterogeneous and sometimes complex handling of licensing and pricing.

4.2. PREVIOUS BUSINESS MODELS

So far, only certain business models based on public data have been able to penetrate the market. The manufacturers of effective products with a high sales output usually obtain the geodata required from private providers, or they replace national providers with international ones, for example by purchasing meteorological data from US weather services.⁴ Specialist data provided only by national public facilities have so far been used merely marginally for products or applications.

**access to public
data, but no legal
claim**

Indeed, the UIG and the IFG, as a matter of principle, grant access to a quantity of public data. A claim for data provision in a certain form and, in particular, a claim for the reuse of data – crucial for the economy – cannot, however, be derived from these acts.

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Until now, the use of public data has lacked value for the economy not only because of its fragmentary availability but also because of the indirect costs and transaction costs for investigation, ordering, settling of contract, purchase and payment. With heterogeneous fees as well as divergent conditions of use and license agreements, the user needs to conduct negotiations that are costly in both time and personnel, and the user must, in addition, examine the regulations. Furthermore, the federal and functional structure of the data-holding authorities leads to a plethora of contact persons. This increases the requirements for negotiations yet again. As a result, only determined commitment by individuals or a legal obligation for the use of data can bring profitable applications.

Even the management of data (i.e. its purchase, storage and preparation) is highly complex and very costly. The technical expertise required has to be held or bought in. Geodata direct costs are currently problematic for business models: much geodata is given away free of charge by producers, and for the commercial use of data only minor user fees are quoted. But some geo-information is so costly that an economic use of the data cannot be achieved.

Many of the existing geo-applications are developed as a proprietary, compact application and do not normally meet any general standard. Thus, interoperability

⁴ Assessment of the Reuse of PSI, MICUS EU 2009

with other systems is not given. In contrast, the implementation of geodata or of applications from other providers is not possible without considerable further effort.

Within the categories of data producers and reusers, only certain service providers were able to start a business. These service providers were able to specialize in data management and to offer customized and conditioned data, e.g. in WM/WF-services (WM = Web Map, WF= Web Feature) to reusers. Thus they should be able to take advantage of synergies in data acquisition. But even for a specialized enterprise the effort is too great. The conditions of use generally depend on the end user's habitual usage; each case needs to be viewed individually, and synergies can in the event only rarely be exploited.

4.3. FUTURE BUSINESS MODELS

So far, the IFG and UIG only regulate access to geo-information. INSPIRE and its implementation into national law (through GeoZG and the corresponding GDI acts of the member states) grants the right to the provision of information in a reusable form as well as the general right to reuse. Until 2014, existing geodata and geo-services from 34 data themes will have to be provided for reuse by public bodies. Therefore, minimum standards are set within the implementing regulations of the acts. Download and direct-access services are planned, as well as the provision of interoperable geodata, and these modifications will upgrade the quantity (offer) as well as the quality (formats) of the geodata.

In addition to a printed version, maps are more and more provided online as datasets. Data delivery is shifting from maps via data towards services. With central geo-portals (GeoZG § 9 Abs 2) access to specialist data and metadata will become easier, and transaction costs will drop.

Currently the number of platforms that will be established cannot be evaluated. **In order to minimize the number of contact personnel and transaction costs, a single nationwide platform should be aspired.** It would also be possible to establish a single geo-portal per federal state and to manage these portals via a corporate German Federation portal.

Here, INSPIRE can work as a catalyst for the authorities to fundamentally reset data maintenance and to voluntarily provide data that is not bindingly prescribed by the GeoZG. A clientele can be extended, third-party innovations can be encouraged, and thus advantages of location can be protected. Third-party applications based on public data can open up new markets in sectors such as leisure, city marketing and security and order. Furthermore, for authorities the voluntary provision of geodata can also be seen under the aspect of asset building. The more data becomes accessible, the more assets can be balanced by the authorities. Additionally, private or optionally public applications based on public data can equally be made accessible via a web platform.

The simplification and standardization of pricing is an opportunity for the authorities to reset the basis of calculation. So far, it is the costs of data generation that have been the basis for pricing, but in the future it could be the data delivery costs that form the basis.

The economy particularly anticipates advances in the fields of availability, transaction costs and the prices of licenses and data. Then new business models

will be facilitated by the geodata and geodata services of the minimum 34 data themes provided for reuse. Existing concepts that have been withheld so far because of the high cost of data acquisition and data maintenance as well as the high data costs can now be implemented profitably.

Based on the strong growth dynamic of the geodata market (51% between 2000 and 2007) a high potential for the user economy can be expected, as long as the acts granting access to geodata achieve their full effect. The backlog in the use of public data is high, as is the demand which results from new technological developments. Particularly noteworthy are developments such as the increasing market penetration of smartphones with GPS and the rapid progress of the mobile internet.

5. GIW PROJECTS (ORIGINAL PP 68–73)

5.1. GEORAWMATERIALS

With its key project GeoRawMaterials, the GIW Commission supports the geo-information system GISInfoService by the Industrieverband Steine und Erden Baden-Württemberg e.V. (ISTE). It provides enterprises in that sector with a geo-information system that provides both access to publicly available information and implementation of in-house data.

The data required comes to a total of approximately 1220 datasets acquired from approximately 100 different public bodies. Based on the experience of three project days per dataset, this would be equivalent to 16 worker-years in total. Taking into account this huge effort, it is obvious that based on the current law, development of new business models is barely possible, especially for SMB companies. Today, the effort needed for the acquisition of data alone is still over-high.

The implementation of INSPIRE gives the opportunity to dismantle the existing barriers by an improved availability of geo-information and by reduced transaction costs. Thus, business models for SMB companies will evolve.

5.2. GEORISK

For the agriculture sector in particular, geo-information plays a key role: geographical location and factors like soil and local topography have a significant effect on potential profit and loss. Using this data, new insurance products with a risk-commensurate premium definition can be created.

With the commitment of the German Insurance Association (Gesamtverband der Deutschen Versicherungswirtschaft e.V. (GDV)) in cooperation with the GIW Commission, data can be acquired and opened to the members via the platform ZÜRS-Geo. Here, the GDV fulfils the functions of a geo-portal.

There are altogether 11 datasets (65%) and 6 services (35%) involved. While statewide geodata such as topography or general data relating to bodies of water can be acquired from the Federal Agency for Cartography and Geodesy (Bundesamt für Kartographie und Geodäsie (BKG)) in a standardized form of WMS service, this only applies restrictively for data collected at federal state level; there are no nationwide datasets for many of the required themes, such as areas at risk of flooding. The GDV spoke to over 200 water management offices and comparable organizations. Promoted by the project, meanwhile, this data is in parts also accessible at state level.

6. STRUCTURE OF THE WEB APPLICATION GEOBUSINESSLAW (ORIGINAL PP 74–81)

The results of this study are accessible on the internet. Via the www.geobusinesslaw.org portal, both individuals and organizations can retrieve legal bases and information about the access and reuse of geo-information.

Based on digital maps, **GeoBusinessLaw** provides answers – so long as they have been made available by the country concerned – to the following questions:

- Which directives exist?
- How have these directives been implemented in the individual countries?
- Which acts exist?
- Which authority can be a source of information?

The application is divided into the following focus areas: directives, data clusters and business models.

In addition to the focus areas, GeoBusinessLaw provides a **web-check tool** and thus a quick overview of the legal frameworks relating to the access and reuse of individual geo datasets.

The check tool gives an indication of the possible legal protection regarding the claim for access and reuse of geodata, but it does not replace legal advice.

The web-check tool provides a choice between two query scenarios:

- Scenario 1: Query for claims
The scenario gives hints as to which geodatasets the user can claim provision and reuse according to the GeoZG.
- Scenario 2: Query for rights
The scenario informs the user about the judicial decisions according to the legal basis of a claim.

These two query scenarios are appropriate for both those new to geobusiness and for people who have already dealt with this topic and have further questions concerning any specific legal action.

7. RECOMMENDATIONS (ORIGINAL PP 82–86)

From the examination into whether or not European legislation could be a driver for German geobusiness, 11 recommendations can be derived:

1. Synchronize regulations at federal and at federal state levels.
2. Use the GeoZG as a catalyst for the establishment of standardized geoportals.
3. Develop a new basis for pricing.
4. Create an economic motivation for data delivery.
5. Use data for balancing
6. Establish a platform to facilitate private use of public data and applications.
7. Extend the list of data in the GeoZG.
8. Establish a German platform as a tool for international cooperation.
9. Provide a mediation service as support for the INSPIRE process.
10. Define exceptions within the regulations.
11. Clearly differentiate between the data, services and applications which apply differently for the individual actors

The 11 recommendations:	Synchronize regulations	Use GeoZG as catalyst	Pricing	Motivation for data delivery	Balancing	Platform for private use	Extend data	Platform cooperation	Mediation	Exceptions	Differentiate data, services and applications
Actors:	1	2	3	4	5	6	7	8	9	10	11
Administration	O	X		O			X		X	X	X
Politics	X		O			X	O	X			
Economy		O	X	X	X	O	O				

Legend: X recommendation for „leaders“
O recommendation for „active partner“

Fig 1: The eleven recommendations and their actors