“Property Transaction in the Digital Age”

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Preface

Conveyance and mortgaging of property are increasingly important and complex economic factors. It is a kernel task of the state to protect the owner's rights and to install a framework of transparent legal proceedings in the today's digital age.

In this context, digitalization is of considerable interest. Above all the trading of property can be accelerated through digital services and thus made more cost-efficient, as well as leading to completely new business models.

The Digital World extends over many areas of our life, e.g. in arts, in private life or at work and especially in economy. It can be assumed, that the branch of industry will be significantly affected and changed by the digitalization in the next ten years. But the high hopes are, that digitalization will accelerate the economic life and simultaneous reduce many costs of several processes. Thereby the price reduction might bring the society as a whole to more major wealth. Process innovation, as a result of digitalization, shall optimize and outwork process flows, especially those who have been too slow in the past. After all, the trend in the direction of digital economy is irreversible. A persistency in the old pads might lead to increasing costs and this is not in the interest of an economic thinking person.

Particularly the property is economically regarded very important. 250 bn. Euros per year is the value of the property economy within the value-added chain up to the federal association of real estate agents in Germany. This is equivalent to 10 percent of the whole gross domestic product of Germany.[1] Accordingly, the processes of conveyance and hypothecation of properties are of special importance. Digitalization has optimized and accelerated processes too. But still there is potential for optimization.

In North Rhine-Westphalia (NRW), three ministries (Interior, Justice, and Economics), civil law notaries and a municipal cadastre office have joined forces in the digitalization of the entire property transaction process. This process is almost complete. The system is secure and economical thanks to multiplication by the private sector in the shape of banks, solicitors and publicly appointed surveyors.

The international symposium "Property Transaction in the Digital Age" in Mülheim last October dealt with this interesting topic. Organized by the ZENIT network more than 80 experts from 15 countries discussed the situation in their countries and how German experiences can be pioneering. Currently many countries eagerly await high-performance systems. The conference disclosed what is needed in order for a solution to be not only secure, but also economically feasible.

All outcomes of the symposium and detailed information on the topic are included in this paper. **The single presentations can be downloaded on the website of ZENIT (www.zenit.de).**

[1] IMMOBILIENVERBAND DEUTSCHLAND IVD (2010): Bundesverband der Immobilienberater, Makler, Verwalter und Sachverständigen (www.ivd.net)

ZENIT – We move innovations[2]

Enterprises have very different requirements: market strategies, product development or questions about finance are just some of the topics, if highly predominant ones. Yet the public sector too needs effective and targeted support when it comes to structural and innovation policy measures. Both are key fields in which ZENIT GmbH is operating.

As National Contact Point for various EU programs on behalf of the national government, ZENIT makes an important contribution to increasing the number of German participants. Additionally and under the name "NRW.Europa", ZENIT - together with NRW.BANK - is part of the Enterprise Europe Network which supports small and medium-sized technology-oriented enterprises are well as research institutions in the area of technology transfer and funding schemes.

ZENIT GmbH also demonstrates its project management skills in the running of various projects and programs of the State of North Rhine-Westphalia. It is the administrative office for the regional initiative "NRW: Future through Innovation" and central contact point for information about regional, national and EU funding. On behalf of EU, national and regional bodies, ZENIT provides services for the benefit of companies, especially small and medium-sized enterprises, as well as universities and research institutions. Their clients come from NRW, throughout Germany and abroad.

Apart from the ZENIT network, with its some 200 member enterprises, the shareholders of ZENIT GmbH, which was founded in 1984, are the State of North Rhine-Westphalia as well as a consortium of banks comprising the NRW.BANK, the private Bankenvereinigung NRW and the WGZ-Bank AG (Westdeutsche Genossenschafts-Zentralbank). ZENIT employs about 50 people, most of whom have many years' practical experience in business and either an engineering or economics background.

In order to stimulate innovation, you need good ideas, innovative technologies and methods, reliable new business contacts, regional concepts, and often an international focus and knowledge of national and international funding opportunities. ZENIT’s consulting services are designed to offer a complete package from the generation of ideas to their successful implementation. For example these consulting services can be mediation of cooperation partners, supporting in internationalization, funding and technology advices.

[2] Information based on the website www.zenit.de

1. Introduction

The Digital Transaction – A Core Procedure of the Economy

by Dr.-Ing. Otmar Schuster, GeoHaus, Mülheim an der Ruhr

1. What's the Transaction?

The title "Property Transaction in the Digital Age" was quickly born when Dr. Otmar Stoecker and I at the beginning of the year set together in his office in Berlin, the association of German Pfandbrief Banks. But later I found, that not many people do understand the term and its economic meaning. Even more, those who say they know it normally know only a part of it – seen from the viewpoint of their own profession.

Why is that so?

It is a complex process with

- many different regulations,
- many different economic aspects,
- many ramifications into the economy and the authorities and
- many professions involved.

The viewpoint of ZENIT is that of the economy as a whole. Especially we are interested to see, what are the results of the huge innovations in this field?

Why is it a Core Procedure?

Our German history tells us the truth: 40 Years of socialist government fighting against private property, neglecting it, fudging it, destroying the results was not enough to bring the property and the property security system to death. The Nazi terror before, expropriating and stealing the property of parts of the population, scratching out the names in the registers lost their evil game. The results of the registers in Ground book and Cadastre showed up again and the owners or their heirs got their property back and most of them started to invest additional money.

If you drive through the eastern states of Germany, the public investments in form of streets and repaired public buildings are eye-catching. But all the new private houses, roofs, gardens show the secret of the secure property system, the secure mortgaging system. The bleeding up of new industrial and commercial activities, starting from a very low base is mostly initiated by the loans, secured by the land, which the entrepreneurs own.

The property system is even more than a state guarantee. It is based on a deep consensus about the desirable value: property. Even those political forces, who dislike property, challenge the system. They put all their power in laws which shall make property unattractive. They can do so, because we have a constitution which says: The property is guaranteed – in the frame of the laws.

So things change: the taxes become higher and higher, the ecologic regulations more dense, contaminated soils and buildings cost a hell of money, but the property remains attractive. The economic institutes speak about the core businesses; they call it perhaps real estate market. But it does not fit totally.

The **many people doing their work** in and around the transaction stay in the shadow and are part of most different official statistics. They consist of

- The skilled people in the public registers and the cadastre, doing their work - proof against bribes.
- The notaries finding the way to bring the wishes of the client parties into a legal form, equivalent to the laws.
- The executives in the municipalities, who guard the public planning regulations. They also collect taxes calculated by the financial authorities.
- The public appointed surveyors who are the binding element to the nature. They bring the volition of the parties into the nature in a way that neighbor's and other owner's rights are not touched and the planning and other public regulations are complied.
- The banks and financial institutes who are standing behind the front and wait for the long term business of mortgaging.
- The realtors do their business also quietly. They all are busy with the transaction; they care for the flowing of the economic process and bring it around the hurdles - different in every country.
- The insurance companies are busy with the securing / financing of the contracts.

Anno Domini 1200 we find the first Basic books describing the rights of owners, tenants in Europe very old. Hernando De Soto thinks that this age of the property system is the reason for its nowadays success. The introduction of the Roman law in the 17th century brought **the new idea of property**, which conquered Europe starting at the Italian universities.

The property **cadastres** start their existence as tax cadastre; the ground tax became the most important tax until 1900. In the civic 19th century, the idea of the property cadastre became more and more important, which means that the civic owner got the right to establish boundaries, subdivide plots and control it in the field.

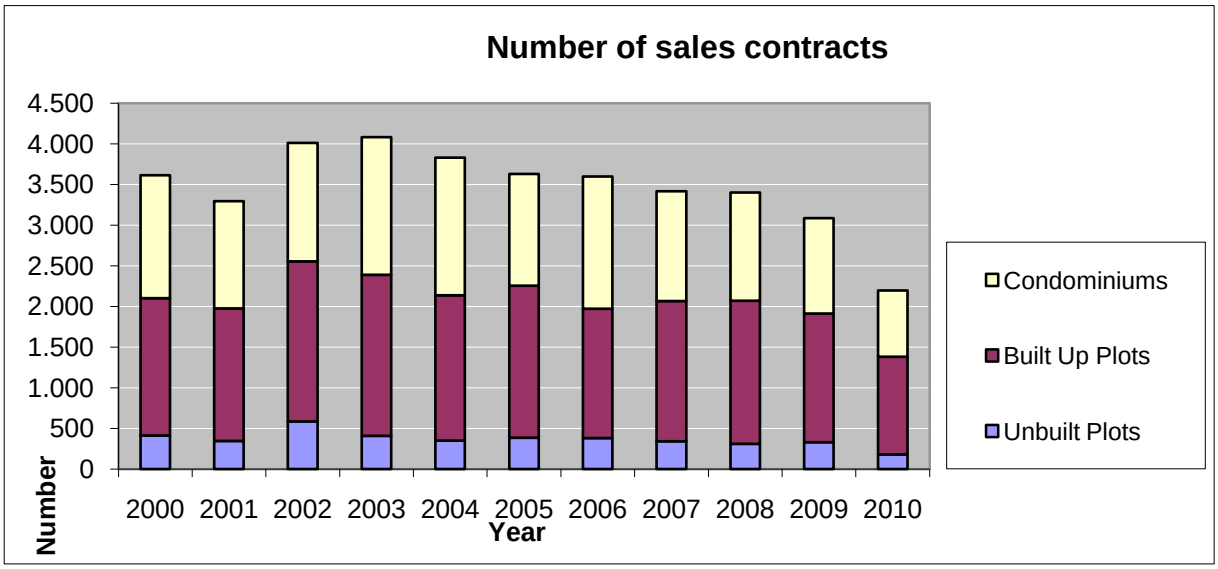
The **conveyance of property** happened in the field, when the parties of the contract, the mayor shook hands in front of a sworn surveyor.

The **Land Registration Code 1898** was the most important act. This code based on the civic law from 1896 was successful up to today and was introduced in many countries of the world.
The big thing in that law is the transparent reference of civic, economic and public needs. It brought an incisive change for the cadastre: the conveyance of property was displaced inside the rooms of the land registry. The connection to the ground was released – a far reaching detail.

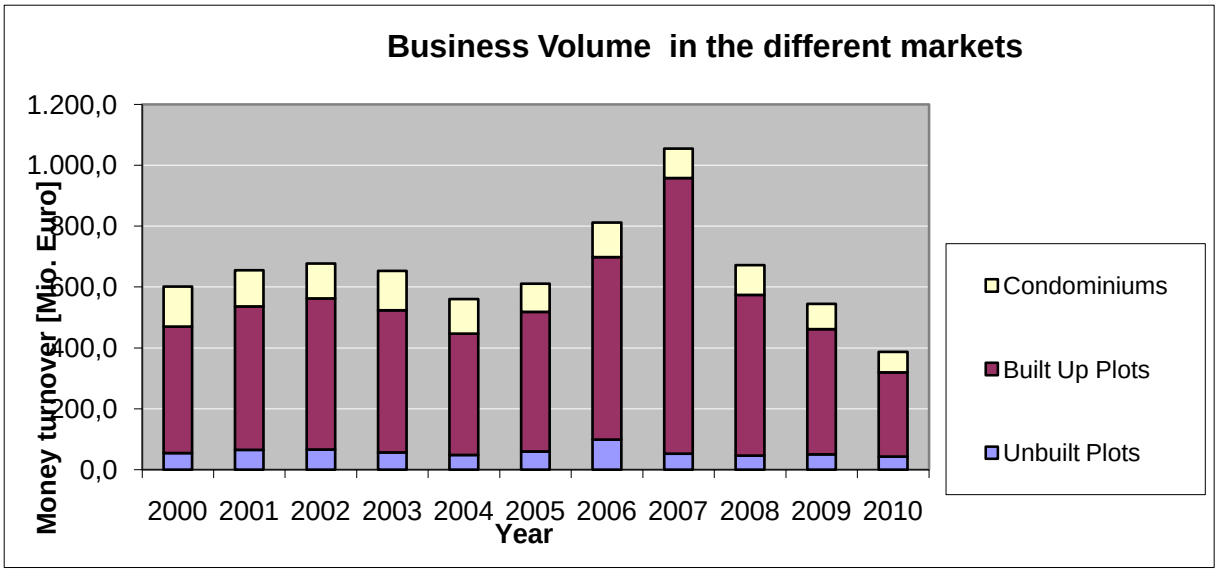
Why do I mention the history? Because property register is history.

2. The economic size of the Transaction

It is nearly impossible to get correct economic figures about the economic value of the Transaction. But I can show it following the **numbers of the town of Duisburg**.



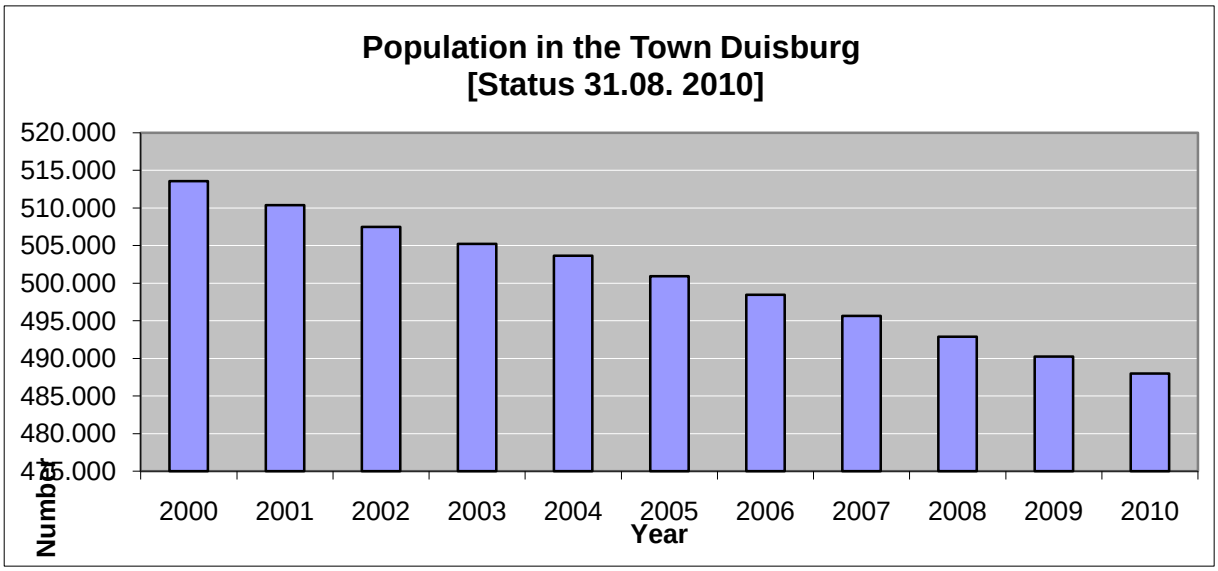
This picture shows of the number of contracts in different markets – 3 – to 4000 - no heritage. The number of condominium - contracts and commercial part-ownership - contracts is nearly as big as the number for built up real estates. The number of sales contracts for not built up plots of land is small.



The table shows the business volumes in different markets. This means that the mean sales contract value of a condominium is relatively small. The same is correct for the not-built land. The bubble in 2006 / 2007 shows the intrusion of international capital into the German tenant market. Such bubbles are rare in Germany, where the market is less turbulent than in England or America due to the specific regulations in the country.

This town with around 500.000 inhabitants has a turnover of 600 Million to on a Billion € /year. To describe the market you must add a mortgaging contract of 60 % of the value of the sales contract and about 10 % attendant expenses. [The costs for the construction or services like facility management are not included.] The turnover for the local economy, busy with the transaction is about 7 to 10 %, which is not much in international comparison.

These summarized data do not show the **changing motivation of transactions**. The megatrends of a steadily sinking population, an aging society, a growing part of Turkish population and privatization of houses bring up different motivations in the background. The real estate crisis is drastic, but the flat curve of the summarized data does not show it noticeably.



The guide values – fixed by the committee of expert valuers sinks slightly. On the other hand the Turkish people buy land and houses, which is the best sign of integration.

Since the housing bubble, the mortgage and credit crisis beginning in the US, we know that there are dangers for the economic activity especially when the connection of the shares to the real estates, building and plot gets lost. The next crisis comes up, when the allocation between plot and mortgage contract is not clear.

But what does the **negative tendency of the real economy** mean for those economic parties, who are busy with the transaction? The demand for houses and flats becomes smaller. The trend, that the families become smaller and the number of dwelling places still grows, comes to an end. Every German lives on about 45 m² dwelling place. This very high and can hardly be topped. Diffidently some people begin to relocate in the cities but this trend is too small to rest the old cart horses.

That is why politics long for people from abroad, who are able to be active parts of the society and firm up the markets in this country. The secure property system with its connection to the ground by the compulsory demarcation – open for everybody, understandable for everybody – is a big plus factor for attracting people from abroad.

3. The role of the Digitization

„**Digital Economy**“is already a key – word of the last and the coming decade. Die System pilots of the economy hope that the acceleration – connected with the word “digital” will create financial resources and open scopes for development and welfare for the society as a whole. Digital economy means progressive process innovations, which will accelerate the course of actions in those areas, where they were traditionally slow.

In this country most of the registers are already digitized and applicable over the internet.

- Property register is available over the whole federal republic.
- The company register makes the firms transparent showing the legal form, the responsible men and women and the yearly economic reports.
- The list of debtors and the list of insolvencies helps to delimit the damage by unsecured assignments.
- The property cadastre with unique naming of the property, its maps and its coordinates with a centimetre level accuracy. It shows the context with the property register and is embedded in the Spatial Data Infrastructure in the European context (INSPIRE).
- Digital availability is given for the legally binding local planning laws, the public easements or the ecologic cadastre of environmental damages.
- Official information concerning the real estate market (BORIS)

The experiences up to now mean **acceleration of technical processes**. The actors are more powerful. This drives the trend to the need of fewer hands to do the work (in addition to a slowing economy). The time for the performance of a cadastral survey and its takeover in the legal register went down from a year to 6 weeks and this is not the end. The population has a fine feeling for that. So you can see that the number of students choosing the technical directions becomes smaller since the mid of nineties.

Our experience is also that the **clients are much more critical** than 20 years ago. They are much better informed about the regulations by the internet. So all parts of the process, where the technique gets in touch with the will of the participants need more time than before, high professionalism is asked to uphold the reliability of the system.

Google Map, Bing & Co are they competitors? In the eyes of the normal people: Yes.

In fact it is a huge challenge for the public authorities to stand the competition with these private digital investments. Nevertheless these public registers as basis of the public guaranty of ownership have to be boosted into a status of high quality, so that there will be no doubt concerning the legality.

Looking at all these innovations, which happened in the last decade, it must be clear that all property systems over the world can only survive, if **legal regulations for correcting the mistakes** are given. Even if the old “principle of neighbourhood” is dead, understandable regulations are necessary, which are accepted by the users of the system.

Looking at the banks and their difficulties with the digital transfer of money the possibility of misuse must be taken into consideration. Technical prevention measures never will be enough. All people working for the system need a strong feeling of their public responsibility and a permanent training.

In Germany the property system shall be

- Set up by the public.
- Its daily work shall be paid by fees of the users / clients.

So if the allocation of work changes by digitization, political frictions can come up powered by the political principal of substitution, which is in force in the whole EU.

A striking example for that is the **allocation of work** between those who perform the cadastral measurements in future and those who control it. Working fully digitally the former formal control has no room anymore. But I am sure that the organisers will find a solution on the short term.

4. What has to be discussed?

A look in our program shows it:

- Security?
- Efficiency – under which circumstances?
- Transparency or the need of data protection?
- Protection of Trust for the parties?
- Proven and / or financial products
- Geo-information and the link to the ground
- Replicability – and its conditions
- Remuneration and allocation of work (public / private).

I am curious about the result and hope that we will be wiser at the end.

Service Innovation – Strong Impact on the Economy and Society

by Mette Koefoed Quinn, Head of Service Innovation, GD Enterprise and Industry European Commission, Brussels[3]

Mette Koefoed Quinn started with a brief overview about her work in the European Commission especially for service innovation. Afterwards she pointed out three main topics: Digitization of publicly stored data in a sustainable manner, the implementation of a pilot project to a real service, the Digital Agenda for Europe and future perspectives for service innovation in property transaction.

Digitization of publicly stored data is not a trivial task and it will take same time. One Challenge is to ensure a consistent, efficient and effective online administration. During this period paper-based and online workflows run often parallel. Another challenge relates to the interoperability of the systems over time regarding exchange and transmission of data. In addition, the data has to be stored safely for more than 50 years and it needs to be accessible over many generations.

The Member States of the European Union are in different stages of this digitization process. Some have started long ago und are constantly looking for more efficient and effective online services for their citizens, other Member States still have far to go.

Digitization of data is only the first step. The next question is how do we go from data to new services? Services must always serve a purpose and respond to a user need, like reducing costs. Only 3 % of service innovation is inspired from research. In many cases it is unclear what the value proposition of such public data is. Sometimes different information or data need to be combined with other information to add real value to the users. It is the combination between technical infrastructure and value added services that create value for the consumer, and where a new business model may be found. Two practical examples are GPS and Google street view.

Consolidation of building or real estate related information is another example. At the moment this information are scattered, like who is the owner, when was it built, which material was used, where are water pipes, power supply lines or house service connection. The challenge is to put all this information together in one set of data and add more information such as hazardous substances and energy efficiency of the house. The collection of these data from the beginning and the combining with other information will be very important in the future.

Citizens expect from public authorities better services at reasonable costs. As part of e-Government – the digitization of public services – the policy makers (like the EU) wants to address societal challenges. The Commission e-Government Action Plan of 2006 was a further step to accelerate the efficient uptake of e-Government services in Europe and for all its citizens.

Some of these challenges are addressed at European Level in the new “Digital Agenda for Europe”, which was launched by the European Commission earlier in 2010 as one of the seven flagship initiatives in the Barroso Europe 2020 Strategy. This initiative should create a true single market for online content and services, like borderless and safe EU web services.

[3] Summary by Thomas Rox based on the presentation at the ZENIT symposium “Property Transaction in the Digital Age” in Mülheim on September 30th 2010

2. German situation – an inspiring example

The Property Cadastre in the Context of Spatial Data Infrastructures (SDI)

by Dr.-Ing. Jens Riecken, Ministry of the Interior NRW, Düsseldorf

Official Surveying and Mapping in Germany

The Federal Republic of Germany consists of 16 states („Länder“) with an area of 357,023 sqkm and a population of 82.5 million. The capital is Berlin. As an example for the states North-Rhine Westphalia (capital Düsseldorf) has an area of 34,088 sqkm and 18 million inhabitants.

The German cadastre consists of 64.5 million parcels which are stored in 250 regional cadastral and geoinformation offices (on average 325,000 inhabitants, 1,400 sqkm and 245,000 parcels per cadastral office). There are 16 State survey offices. Number of staff in surveying and mapping is about 25,000. For North-Rhine Westphalia (NRW) the numbers are: Parcels 9,100,000, buildings 8,650,000, addresses 4,110,000 and cadastral offices 53. 450 publicly appointed surveyors are working in NRW.

Organisation, AdV, Private Sector

Official surveying and mapping belongs to the responsibilities of the 16 states, not to the federal level. State Survey and Real Estate Cadastre are in one authority, but in different organisational structures

The private sector – publicly appointed surveyors – is involved in cadastral surveys in 15 states (exception Bavaria). The institution of a publicly appointed surveyor is regulated by state laws. The number of licensed surveyors is about 1,500 / 450 (Germany/ NRW) with a total of staff of about 15,000. The license is given by the government of a federal state to an individual, not to a company. The license is valid only for that one state (comparable with the regulations for civil servants). Although the publicly appointed surveyor is a freelancer, he/she is part of the official surveying and mapping of that state. Mostly he/she is working in the field of cadastral surveys. The publicly appointed surveyor is – concerning to the public appointment – acting on behalf of that state and uses the seal of the state for the functions publicly appointed. The activities of a publicly appointed surveyor are subject of special conditions and regulations (e.g. concerning liability and insurance, withdrawal of the license, advertisement). The publicly appointed surveyor has the same education as comparable civil servants (4-5 years university plus 2 years of additional traineeship with state examination). The publicly appointed surveyor is supervised by the state not by a chamber. Same scale of fees as the public sector to avoid unfair competition.

The Cadastral and Surveying Authorities of the Länder, which are responsible for the real estate cadastre and state survey (Official German Surveying and Mapping), cooperate within the Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland (AdV) (Working Committee of the Surveying Authorities of the States of the Federal Republic of Germany) to discuss technical matters of fundamental and supraregional importance with a purpose of finding uniform regulations.

ALKIS (Authoritative Real Estate Register Information System), GIS, Standards, Data Exchange, SDI

The task of the surveying, mapping, and cadastral authorities of the federal states of Germany is to provide fundamental data for spatial referencing (Geobasis Data) used by official, industrial and private users. The demand for this data to be provided in digital format continues to increase and has been met at a very early stage by the authorities, which up to now record and provide the data of the real estate cadastre in the ALK (Automated Real Estate Map) and ALB (Automated Real Estate Register) and the topographic data in the ATKIS (Official Topographic Cartographic Information System) in a digital, standardized manner across the whole of Germany. Most Federal States are governed by a cabinet ruling that ALK and ATKIS data shall be used as a basis for other technical information systems (FIS). The concepts according to ALB, ALK and ATKIS were founded originally in the 1970s and 1980s. In light of rapidly developing technology, growing wealth of experience gained by manufacturers in data recording and changing requirements on the side of the users arising from utilisation of such data, it has become necessary to examine and further develop these concepts. As a result ALKIS is currently introduced in Germany and replaces ALB and ALK.

The AdV projects AFIS, ALKIS and ATKIS with their nationally standardised features are described in a common form under the heading Documentation for Modelling Geoinformation of Official Surveying and Mapping. They are associated with each other in a common reference model as a common application schema for AFIS, ALKIS and ATKIS. The common application schema provides for the recording and management of metadata and quality data in accordance with the ISO specifications.

The ALKIS-Standard is part of the GeoInfoDoc which consists of a main document, the AAA application schema and the corresponding derived documents (e.g. feature catalogues, NAS, coordinates reference systems). The whole GeoInfoDoc in its actual and historical versions is published and maintained at www.adv-online.de. The main documents contain besides a lot of explanations and modelling principles also important remarks about the specification of the NAS (data exchange). Therefore, the statements of this main document are normative and in this way they extend the specification of the AAA-application schema.

The foundation of the cadastre in Germany guaranties the property and acts as a multipurpose cadastre. It defines standardised processes, content and clear interfaces between the players.

Today the Cadastre is the local SDI-component of the municipality.

Reliability in a Digital World – Electronic Procedures between Land Registers and Civil Law Notaries

by Klaus Petermann, Ministry of Justice in North-Rhine Westphalia and Dr. Robert Mödl, Federal Chamber of German Notaries[4]

Just imagine: you want to buy a house. But how can you be sure that you are dealing with the real owner of a real estate property? The legally secured documentation of real estate is essential for a successful operation of property transaction. It has to be clear to all participants (citizen, legal professionals, authorities and private companies) who the owner of property is and its rights thereon. In Germany this is controlled by the land register ("Grundbuch"). In addition cadastre defines the dimension and location of land parcels.

In Germany the land register is kept in the responsibility of the federal states by the regional courts. It used to be in a form of a book in combination with paper folders. However since 1993 the land registers have been transferred into electronic data bases in North-Rhine Westphalia (www.grundbuch.nrw.de). By providing digital structured data multiple data entries can be avoided and procedures can be speeded up.

Land register provides full public faith. That means that anyone can rely on the entry in it, unless he positively knows it is false. There is no need for further legal investigation or title insurance. Public faith can only be justified by maximum legal quality and certainty. So the foundation of an entry into the register has to be an authentic instrument. In general it is a public document provided by a civil law notary.

A special feature of German law is, that contracts on real estate transactions have to be notarised. Notaries investigate existing rights, give legal advice and perform immediate and safe execution of the transaction. These circumstances guarantee for both parties (seller and buyer) an efficient and transparent transaction process.

Within digitization at the moment a new objective is achieved. Authentic instruments are transformed into electronic form maintaining their legal status. Especially a qualified electronic signature (confirmed by the notarial seal) ensures on the one hand public faith but also an effective safeguard.

[4] Summary by Sebastian Kropp based on the presentation at the ZENIT symposium "Property Transaction in the Digital Age" in Mülheim on September 30th 2010

A View on German Property Market Transparency

by Hardy Schleinitz, Research Coordinator, THOMAS DAILY GmbH, Freiburg im Breisgau[5]

THOMAS DAILY (TD) is a leading online-information provider for the real estate industry in Germany. It was founded by Wendy Thomas in 1989 to improve market transparency in Germany by establishing a media monitoring service. Today TD offers its clients transaction data form a property like exact address, names of involved parties, details of the premise, total investment volume (yield, rents) and text comments. The level of market transparency in Germany is still far from anglo-saxon standards. In Jones LangLaSalles global rating Germany has achieved in 2010 with 10th place its highest transparency rating ever. While Germany has seen some improvement in its transparency score, it can still become rather difficult to reveal relevant presale-information. Very little transactional data has been collected in a central data base or the alike due to privacy data protection arguments. The Committees of Valuation Experts are dubbed as "keeper of the holy grail" regarding to transactions in Germany. But they do not publish individual deals justified by the protection of privacy.

While housing and issues of city-planning are traditionally seen as a public domain, commercial property types have been seen as "objects to the free market" only. Nonetheless, driven by international investments, the willingness to report on transactional activities is growing.

Economic success rarely is an outcome of exclusive knowledge, but more of the ability to judge a market situation in the whole correctly by having high quality market data at hand. Therefore, this should be understood as a common good in every country. Most of TD's clients would agree but in daily business the so called free rider problem exists: no one can be excluded from the benefits even if he does not contribute. So, most market players do reply they would indeed report most of their transactions details to the media if only they knew their competitors did so too.

Different aspects of transparency

Hence transactional data always is – and always will be - in the very focus of the real estate industry, TD believes there are more aspects one has to keep an eye on. To get a feeling of how markets emerge one needs to combine the following information:

a) Market information: To be able to judge the dynamics of a respective market one needs assured facts, e.g. about the existing property stock, vacancy rates or about the number & specifics of recent transactions and leases. Together this allows assessing the market situation in its whole.
b) Information on property level: To learn about the individual qualities of an investment good, one also needs to know about the sub-market it is in.

A growing informational landscape

A fully transparent market exists only in theory. TD believes that the basis of transparency in the property market lies in structured market data, which is collected systematically over a long

[5] Summary by Thomas Rox based on the presentation at the ZENIT symposium "Property Transaction in the Digital Age" in Mülheim on September 30th 2010

period of time, as complete, gap-less and detailed as possible. The use of a well administered data-base over time allows recognising trends and sub-markets.

TD's clients want to be able to access the data every moment they need to. Therefore property data has to be updated permanently. Solely individual data can be subdivided into small sections, aggregated data cannot. Therefore, a data-base should fulfil the following points:

1. Historical data: Time series help to create outlook and prognosis that will stand up to scrutiny.
2. Multiple Sources: Bundling information from different sectors and sources make a picture of a market complete. Through combining indicators from different origins, one can obtain the most complete view of a city or local market.
3. Accessibility: Reliable market data is to be made accessible to as many market participants as possible to achieve market transparency. In the digital age, online systems are without alternatives.

Methods & Standards

Besides data also definitions and measuring methods used to create a market report has to be transparent to assess a statement's reliability and scope. Data will only be comparable if it is produced and evaluated on the basis of clearly defined standards. Evidently, efforts to define such standards and guidelines are crucial steps towards more transparency in the real estate industry. This process is well under way but will take time.

From an economic point of view, transparency increases the probability of deals. All partners gain more confidence in their decision making. Market transparency will improve the whole transaction process: less time and effort is needed for searching for new properties, potential business partners, in initiating and negotiating deals and in deciding and finalizing them. As a consequence, the "merchandise" real estate gains attractiveness.

The real estate industry is disperse as only a few other industries. Especially in the context of global business networks a lag in transparency will be a serious disadvantage for competition.
To attract investor's they need to know about opportunities and risks of an asset. Local experts, who know the property market in their city best, will remain our most valuable source in the future.

Outlook: Future real estate market information in Germany

Transparency will improve in the German property market. The international property industry calls for comparable and transparent market information within a German public-access transactional database. They need full access to complete, up-to-date market data of high quality.

Societies that are just about to build up property market information can learn from Germany's experience. For instance, that infrastructure data will always play a major part when investment decisions have to be taken.
To sum up: there is a lot of silver lining to be seen in the real estate market: this year for the very first time a working group of Committees of Valuation Experts published a nation-wide market report. The internet allows integrating and aggregating bits and pieces of information in order to create the whole picture. Only what is there in a digital form will be seen in the future!

3. International situation – a look beyond the German border

Cadastre and Land Registration in Europe

by Prof. Dr.-Ing. Dr.-Ing. E. h. Dietmar Grünreich,
Head of Federal Agency of Cartography and Geodesy, Frankfurt[6]

Prof. Grünreich president of the "Federal Office for Cartography and Geodesy (BKG, www.bkg.bund.de)" in Germany started with a brief introduction of his institution. He appointed the main strategic goals of BKG which are contributing fundamentally as competence centre for geodesy and geoinformation in Germany and also advising the federal government on matters concerning applications of geoinformation for solving problems of social relevance. BKG consolidates and complements if necessary the data that are produced by the 16 states in Germany.

He also mentioned several cadastre and land registration activities in Europe such as the "United Nations Economic Commission for Europe" (UN-ECE), the "Working Party on Land Administration" (WPLA) and the "European Land Information Service" (EULIS, www.eulis.eu). The big variety (legal and technical) of cadastre and land registration systems in Europe depends mainly on national situation on site.

Another objective of BKG is the implementation of INSPIRE directives in Germany. Building an European Spatial Data Infrastructure (ESDI) means networking with national geodata infrastructures such as GDI-DE in Germany. BKG also supports European Community in formulating, implementing and evaluating European and national policy with spatial reference.

In cooperation with EuroGeographics (www.eurogeographics.org), what is a representative body of the European national mapping, land registry and cadastral agencies, BKG is providing state of the art services (e.g. quality control) for the real property and land information market. One of its goals is to contribute to build a European Spatial Data Infrastructure (ESDI). The concept of Spatial Data Infrastructure supports the development of reliable and interoperable cadastre and land registration systems on a long term run. By supporting European policies an efficient and effective organisation is a vision statement.

A survey by EuroGeographics revealed that conveyance of property in Europe in 25 percent of the cases takes between 31 and 90 days. Also for registering a mortgage in 25 percent of the cases takes between 5 and 30 days in average. In very interesting graphics Prof. Grünreich showed that the process of property transaction still needs to be speed up. As the figures show components as subdivision of a parcel, conveyance of property and registering a mortgage are taken too much time.

[6] Summary by Sebastian Kropp based on the presentation at the ZENIT symposium "Property Transaction in the Digital Age" in Mülheim on September 30th 2010

International Situation: A political Need Worldwide

by Prof. Dr. mult. Gottfried Konecny, Leibniz University Hannover[7]

Prof. Konecny started with citing excerpts of Hernando De Soto's book "The Mystery of Capital", in which he claims that only highly developed countries in the world are able to establish an infrastructure for capital transfers between capital – labour – real estate. In the developing world and in the transformation countries land must be considered "dead capital", since no formal system exists for the governments to identify land rights and guarantee them to the holders. Thus transfers are illegally made without public records and remain insecure and cannot be mortgaged by banks.

The International Federation of Surveyors (FIG, www.fig.net) has recently stated that about 30 to 50 countries worldwide have cadastral systems in operation. Another 50 countries are in the process of establishing one. Over the last 10 years 1.2 billion USD have been spent on introduction and renewal of land registration and cadastral systems. So a lot of money is in this market.

Later in his presentation Prof. Konecny introduced "Cadastre 2014" (which recently has been renamed to "Cadastre 2025") a project by FIG. Key points in the new cadastre systems are: title as the key document, an extended definition of the cadastral unit (land object instead of just the parcel), replacement of cadastral maps with models and the use of topology for discovery of relationships. The consequences are that Cadastre 2014 will show the complete legal situation of land, including public rights and restrictions and also that separation between maps and registers will abolished in the future. It remains to be seen when these ideas will be reached.

To eliminate the lack of land registration and its effects on the economy the World Bank has instituted large programs for establishing cadastral and land registration systems in the transformation countries and in the developing regions of the world. To establish such systems effectively and rapidly high tech tools, such as Global Navigation Satellite system (GNSS), total station surveys, orthophoto mapping and the mapping from high resolution satellite imagery are a prerequisite. New technologies make it possible that tasks which were not affordable before can be realised now.

The presenter finished with an important statement: "Practical implementations nevertheless often suffer from lack of administrative cooperation (lack of a Spatial Data Infrastructure), lack of understanding (educational and professional efforts) or lack of good governance. But it has been shown, that the establishment of cadastral and land administration systems within a 5 to 10 year period is possible, if all forces are united".

[7] Summary by Sebastian Kropp based on the presentation at the ZENIT symposium "Property Transaction in the Digital Age" in Mülheim on September 30th 2010

Geo-Information in the Kingdom of Saudi Arabia

by Dr. Muhamad Al Rajhi, Assistant Deputy Minister for Land and Surveying, Kingdom of Saudi Arabia, Riyadh[8]

Dr. Al Rajhi from Saudi Arabia spoke about Geoinformation in the Kingdom of Saudi Arabia where about 200 municipalities and 4 million parcels can be found over an area of nearly 2 million square kilometers. In a brief historical review he described the evolution of Geo Information in the country. Through concentrated efforts the Deputy Ministry of Land and Surveying (DMLS) has made phenomenal progress in initiating and completing different Geo Information data collection projects (e.g. aerial photography for all populated areas).

Today's maxim of DMLS is to maintain an up-to-date geospatial information infrastructure for informed decision making for land management and development projects. In order to implement the compilation, updating, organization and maintenance of a comprehensive kingdom wide Geo Information System (GIS) several steps have been taken in the past. Activities were establishing a unified geographic reference frame and an active CORS network (based on GNSS) to support continuing updating. Also vector data enhancement got more and more important over the last decade.

The primary tasks of the government in relation to land are to insure: that rights in land are generally protected, a balanced land market, a good land planning and a fair system of land taxation. In order to comply with these guidelines a new challenge for Saudi Arabia is the implementation of a cadastral system based on parcel definition registration. Individual implementation steps are: parcel fabric, generate unique parcel numbers, capacity building in order to cope with professional demands and standardization of procedures. A pilot project has already been completed. In general the first registration is compulsory but free of charge. Also mandatory is the registration of ownership conveyance.

The GIS of Saudi Arabia is conceptualized for the future. Accuracy, up-to-date, scalable and designed for easily importing other land related information (such as utilities or land use) and ISO certification are the characteristics that will allow DMLS to fulfill their mandate successfully.

Even though DMLS has come a long way and has been successful in transitioning current state of the art technology the ministry is continually striving to enhance the efficiency. A future road map has been formulated to guarantee the successful management and maintenance of information in the future. Benefitting by those who are more experienced in developing and managing geoinformation systems is a wise strategy.

[8] Summary by Sebastian Kropp based on the presentation at the ZENIT symposium "Property Transaction in the Digital Age" in Mülheim on September 30th 2010

4. Mortgaging – an important link to the economy

Public Disclosure Requirements and Protection of Trust with Security Rights over Real Property in a European Comparison

by Andreas Luckow, Head of International Real Estate Finance, Association of German Pfandbrief Banks, Berlin[9]

Andreas Luckow started with describing the diversity and functional differences of land registration systems in European countries. He emphasized that information from land registers must be understood, interpreted and assessed depending on local law. Some functional differences such as recordation vs. registration or dead collection vs. book entry vs. certification make property transaction processes more difficult.

Demand for information for security rights over real property is increasing. For example banks need detailed information to assess the risk coverage by security rights (mortgages, etc.). Also information concerning legal issues is used for example for loan contracts, loan structuring, documentation, collateral checks or risk assessment. But not only banks have a demand for information from other countries. Also associations, scholars and the EU-Commission or other international organisations are interested in information.

In Europe only 19 % of mortgages are international. 81% are still national. Cross-border finance is still small for residential real estate but growing for commercial real estate. For example cross-border property loans increased from about 30 bn. € in 2000 to about 160 bn. € in 2009.

Flexibility, security and efficiency of security rights over real property in Europe are the topics of different workshops called “The Round Table” organized by the Association of German Pfandbrief Banks since 2005. Leading experts from various European countries came together to discuss the use in practice of the most flexible security right over real property used in each country, and the role it plays with regard to the land register, in enforcement and insolvency proceedings. Discussions showed that assessment depends on perspective. Legislator, owner or banks usually have different interests.

To keep results up-to-date the workshop of the round table will be continued. Further information on methodology and current results can be found at www.pfandbrief.de.

[9] Summary by Sebastian Kropp based on the presentation at the ZENIT symposium “Property Transaction in the Digital Age” in Mülheim on September 30th 2010

Property Finance Based on Covered Bonds and Sukuk: Requirements in Respect of Legal Certainty of Property Rights

by Dr. Klaus Peter Follak, Deutsche Pfandbriefbank AG, Unterschleissheim[10]

Dr. Follak started with a statement which the audience agreed without exception. He said: “credit crisis has demonstrated the need for a reliable funding basis across cycles”. As an international lawyer and also director at an international banking group Dr. Follak has collected comprehensive experiences in this specific field of work. Requirements as long term investments (to avoid temporary liquidity bottlenecks) can be met particularly well by covered bonds and sukuk.

Covered bonds are securities where the obligor’s payment obligation is covered by assets and by income streams generated by the assets. Covered bonds are defined strictly by .EU Capital Requirements Directive (CRD, Basel II). Resilience of covered bonds depends on the quality of cover assets, the strictness of regulatory requirements and the soundness of the governing jurisdiction, in particular the certainty of property rights.

He also gave an account of mortgaging possibilities under other legal systems, in particular in Arabic countries. There the legal framework is sharia. An instrument of sharia is sukuk. Sukuk’s interest in assets and related revenues is securitised. As a sharia-compliant type of security sukuk does not guarantee repayment or a profit. Main characteristics of a sharia-compliant finance system are: a closer link to the real economy (less leverage in the system) and a strong commitment to asset based transactions (that insulates them from specific internal risks).

Banks applying the principles of Islamic finance, e.g. sukuk, have preformed fairly well during the finance crisis. Obvious they cannot escape the effects of the global economy and falling asset prices. But they were not so much affected because they are less exposed to the systematic drivers of the liquidity squeeze.

Sukuk is a growing market. Around 16 million Muslims do live in Europe. There is a source of capital available which can be tapped only with Islamic finance. But only a very few countries (e.g. the UK) support the introduction of Islamic finance. Further information about this interesting topic is available on the website of the author under www.apfollak.de.

[10] Summary by Sebastian Kropp based on the presentation at the ZENIT symposium “Property Transaction in the Digital Age” in Mülheim on September 30th 2010

5. Workshop 1: Security and Efficiency

Workshop 1: Security and Efficiency

Chair: Willi Zimmermann, Land Policy Advisor, Leipzig, Germany[11]

The principles of land governance in a modern liberal society can be made operational through equity, efficiency, transparency and accountability. Also sustainability, civic engagement and security are very important. The question is what effective safeguards are required for ensuring trust, security, certainty and privacy at any time in a digital property transaction process?

The World Bank defined several "Worldwide Governance Indicators (WGI)" that aggregated the view on the quality of governance. Research showed that in high developed countries digital land tools contribute to sustainable development. However in developing countries digital land tools might make rule of power and corruption even more efficient. All land tools can be misused (for further information: http://info.worldbank.org/governance/wgi/index.asp).

Another example confirms the problem. Transparency international did a survey in 69 countries and interviewed more than 73.000 people: "How serious do you think the problem of grand or political corruption in land matters is in your country?" Only two percent answered that it is not a problem at all. But more than 50 percent see serious problems in their country.

Both examples show that even if digital tools are used (e.g. as computerized land registration and credit access) still security and efficiency must be ensured. Misuse of power can be seen very often when it comes to land, especially misuse of land registration or cadastral data. Fraud, forgery, multiple allocations, bribery and nepotism were identified as the main problems. Due to ease of access to online services in the digital age the factor of registration fraud (that also includes mortgage fraud) may increase.

The "Working Party for Land Administration" (WPLA) did a survey where member states of UNECE (United Nations Economic Commission for Europe, www.unece.org/hlm/) were questioned with regard to fraud. Three areas were covered: accessibility of systems, experience of fraud and counter measures.

Today all authorities in the UNECE region do hold land title registration information in electronic format. Information is accessible to the public in some form. In general a limitation of online access would reduce the amount of available online information. Also a verifiable registration can identify applicants who can prove having a specific interest (e.g. as land owners).

It is important to detect fraud before it is completed. It should be stopped at the earliest opportunity and referred for criminal prosecution. What is also significant is to understand and manage the risks of fraud. Assessing the scale of potential loss, developing strategic approaches against attacks and focusing on the most effective anti-fraud measures (preventive, direct or deterrent effects) are good practices.

[11] Summary by Sebastian Kropp based on the presentation at the ZENIT symposium "Property Transaction in the Digital Age" in Mülheim on September 30th 2010

Following requirements must be fulfilled to detect and prevent abuse of land information systems in the digital age in order to ensure the property transaction process:

- accessibility restrictions (verification of applicants and limits to anonymous users)
- procedural checks and controls (public notary checks the identity of both parties in a property transaction process)
- technological security measures (access control, encrypted communication, electronic signatures, monitoring system)
- training of counter fraud staff and establishing central units responsible for identifying and tackling fraud (provide advice and guidelines)
- national and international cooperation (sharing intelligence between organizations), responsible authorities

Efficiency of land register and cadastral systems is crucial to its success. Without high efficiency the system will fail in practice. User won't accept it. So it is important that efficiency is guaranteed and continually be improved. For example through digitization efficiency has been increased (leads to a reduction of transaction costs). In addition following points lead to an increase in efficiency:

- a system that covers all parties concerned (that includes enhancement of public participation)
- harmonization legislation and judicial practice
- standardization of system components and data
- installation of automated working processes and indicators that allow analysis by experts (e.g. as monitoring, running simulations or analytic tools)
- provide WEB services for clients

A factor that is also discussed in connection with increasing efficiency is the strategy of data management. As applications and experiences in several countries show the question if central or decentralize data management is the better decision cannot be answered that easily. More important for a successful application is what structure (e.g. as administrative) already exists in situ. Security aspects as described above seem to be more important.

Before going digital effectiveness and reliability of controls and protection mechanism should continually be reviewed and checked to guarantee security property transaction process at any time. Security and efficiency are important but even more important are responsible and reliable authorities with a political vision (policy by the government) who are willing to implement a transparent value chain.

6. Workshop 2: Replication Strategies

Workshop 2: Replication Strategies

Chair: Stefan Gustafsson, European Land Information System, Gävle, Sweden[12]

The second workshop concentrated on learning from best practices in different countries all over the world to develop replication strategies. These states are in different stages on developing a Cadastre and Land Registration. The following short abstracts are based on the presentation at the ZENIT symposium "Property Transaction in the Digital Age" in Mülheim on October 1st 2010.

Dr. Sylvane Paixao presented the situation of **Land Registration and Cadastre in Brazil**. The government used comics to persuade and educate the people about the benefits of a cadastre and land registration. However, skilled personnel and surveyors are still missing. Additionally, land ownership concentration in a few hands, fraudulent titles and lack of land regularization in the past are major difficulties. Today cadastres are often isolated applications with no connection to each other. The whole process is also extended by owners and farmers of a large estate. Nearly one percent of the parcels cover more than 31 percent of the total area. However, more than 31 percent of all parcels are smaller than 10 hectares. These parcels cover less than 2 percent of the total area of Brazil. Especially in rural areas most parcels are so small that taxation is not worth it. These are some reasons why only 0.5 percents of all parcels are surveyed yet.

The need for smart **Land Management Regularization in Greece** was shown by Dr. Chryssy Potsoiu. In 1995 the Greek government decided to establish a cadastral system to incorporate and replace the existing deeds registry system due to the state could not respond well with protection or management of the deed registry system. Greek differentiates between state lands (forest land, coastal zone, and archaeological sites), church land and private land. However, state lands are not defined clearly yet. On one hand, Greek constitution gives priority to environmental issues, rather than economic development need. Though, statuary environmental constraints are not delineated on maps. Additionally, there is a lack of necessary spatial data infrastructure (cadastral maps, forest maps, etc). On the other hand, constructions are permitted in unplanned areas, if they do not interfere with officially designated environmental and cultural heritage sites and meet minimum regulation requirements. Moreover, urban planning is extremely centralized and expensive compared to other countries in Europe. During the last decade hardly any new city plans were ratified. One fifth of the constructions are informal. However, informal houses, even when built on legally owned land, cannot be inherited, sold, mortgaged or rented. Furthermore, buildings (formal or informal) are not shown on the newly accomplished cadastral maps. Areas under planning already include formal and informal developments, which makes planning a complicated task. Generally, the political support is missing to establish successfully a cadastral system.

Dr. Georg Schindler reported on a successful **Cadastre and Land Registration Project in Georgia**. Starting in 2000 a countrywide digitized and multi-functional cadastre and land registry system should be established, which provide basic spatial information for privatization, land use planning, taxation and development of infrastructure. Additionally, the private sector in the field of

[12] Summary by Thomas Rox based on the presentation at the ZENIT symposium "Property Transaction in the Digital Age" in Mülheim on September 30th 2010

surveying should be extended. The project was completed successfully in 2008. Dr. Schindler pointed out that ownership of the system is a key. Ownership means responsibility. Maintenance of all cadastre and registration information must be done by national partners and the updating process has to start right away. Therefore, around 240 Georgian people were selected and trained in order to create small private surveying companies. Solely 3 foreign experts from Germany worked on site in Georgia. The total costs per parcel were solely 7 Euros. Donor coordination was also quite important during the project. Benefits of this project are a transparent land taxation system, secured ownership titles as a basis for all investments, and secured planning information using digital cadastral maps.

Finally, a starting **Cadastre Project in Addis Ababa** was introduced by Dr. Paul Hartfiel. The project owner is the Addis Ababa City Administration. The political conditions for municipalities have changed dramatically in Ethiopia during the last two decades. An earlier attempt in 1996 to implement a register of properties and cadastre failed due to an undefined updating process and changes in the administration. The legislative framework in Ethiopia allows no private ownership of land. Solely an ownership of buildings is combined with the right to use the land parcel. That is specific characteristic of Ethiopia. A new system will be introduced with the help of Hansa Luftbild. German solutions of Hamburg and North-Rhine Westphalia will be used to define the concepts and to design the real property registration and land information system as well as other related processes. In addition a new addressing system will be implemented. Taking into consideration the special needs of Addis Ababa current situation and future plans the result of the current project will be a strong and reliable data base for further developments. All this will open the cadastre to the needs of other stakeholders in area of urban planning and renewal, building permits, taxation and financing aspects as mortgaging which can be integrated in follow-up projects.

Cadastre and land registration are crucial for any economic development. Without a security in ownership and land titles investment by private companies or people are inhibited. During the presentations and discussions some aspects were identified as **key requirements for establishing a cadastre and land registration in a quite successful and sustainable way**:

- a legal frame and a working government are necessary, political will is an asset;
- people need to know the benefits of a cadastre and land register: Establishing trust, confidence and reliability right from the beginning;
- partners have to be involved from the beginning: ownership means responsibility;
- education and training of people, politicians, local partners and experts right from the beginning is most important;
- accuracy is less important than completion, it can be improved afterwards;
- starting the update procedure for the Cadastre and Land Registration from the first day of the project;

After establishing a cadastre and land register in Georgia the property transactions in cities, villages and rural developed very quickly, due to the security in land titles and property transactions. Cadastre and land registration are basis for any economy. The results justify the long and expensive process. However, following a replication strategy and establishing successfully a cadastre and land registration is always worthwhile.

7. Final Remark

Final Remark

by Prof. Dr.-Ing. Theo Kötter, Department of Urban Planning and Real Estate Management, Institute of Geodesy and Geoinformation, Rheinische Friedrich-Wilhems-University Bonn

The 2009 German real estate market report shows that in 2007 and 2008 around 825.000 property transactions per year were received. In average 1.3 % of the German territory were traded.[13] Particularly the property is economically regarded very important. 250 bn. Euros per year is the value of the property economy within the value-added chain up to the federal association of real estate agents in Germany. This is equivalent to 10 percent of the whole gross domestic product of Germany.[14]

Domestic and cross-border transactions of real estate are becoming more and more important. They are complex economic factors. Next to ensuring a balanced land market and a fair system of land taxation it is a kernel task of the government to protect owner's rights and to install a transparent, efficient and secure framework. The credit crisis has demonstrated the need for a reliable property transaction system.

As experiences in countries like Germany show property transactions can be accelerated through digital services and thus be made more cost-efficient. They are creating financial resources and leading to progressive process innovations. Demand for information for security rights over real estate is increasing. Banks, financial institutes, insurance companies and other organisation request detailed information. The legally secured documentation of real estate is essential for a successful operation of property transaction. It has to be clear to all participants who the owner of real estate is and its rights thereon.

The real estate transaction process is very complex. Many participants are involved with different intentions what makes procedures not easy. **Transparency, efficiency and security are the key principles** for establishing and running a real estate transaction system successfully. In Germany the system consists of cadastre, land registration, notaries and public appointed surveyors. They cooperate closely and fulfil the task of securing ownership what is crucial for any economic development. Investments would be inhibited without it.

Very often misuse of power can be witnessed when it comes to land. Fraud, forgery, bribery and nepotism are some of the problems. Transparency and security of the system and all processes are extremely important. Considering a global business network a lack of transparency and security will be a serious disadvantage for competition. If transparency and security is guaranteed competitiveness and probability of transactions can be increased. Defining standards and guidelines are essential steps towards more transparency. But a fully transparent and secure market

[13] German real estate market report (2009): Immobilienmarktbericht Deutschland - Arbeitskreis der Gutachterausschüsse und Oberen Gutachterausschüsse in der Bundesrepublik Deutschland (www.immobilienmarktbericht-deutschland.info)

[14] IMMOBILIENVERBAND DEUTSCHLAND IVD (2010): Bundesverband der Immobilienberater, Makler, Verwalter und Sachverständigen (www.ivd.net)

only exists in theory. Efficiency is also crucial. Without high efficiency the system will fail in practice. User will not accept it. Thus it is important that at least the key principles are guaranteed and continually be improved.

Most of the industrial countries have installed cadastre and land registration systems. These systems usually differ from country to country and have a long history of establishment. But even in high developed countries regulatory mechanisms, who are supposed to build trust and reliability, fail or cannot cover all contingencies as the credit crisis has shown. But when it comes to emerging economies and developing countries situation looks even worse. Even basic conditions usually do not exist. Deficits are on a high level and land must be considered as dead capital since no formal system exists.

The foundation of transparency, efficiency and security in the property market lies in a national legal frame. A political will is a fundamental precondition for building trust and reliability. It must be clear that all commitment of installing a successful property transaction system can only survive if legal regulations exist. Through ownership on real estate people’s awareness for their rights and responsibility will be strengthened.

It is very important that country specifics characteristics are taken into account. Just adapting a system that works just fine in one country does not mean it will work in another. Organisation should always follow the task. The tools (e.g. as cadastre and land register) are available and well known in countries like Germany. But this valuable knowledge needs to be brought on-site. It is essential that the tools flank and if necessary support the system. Different disciplines and participants have to be brought together, form cooperation’s and work together successfully hand in hand.

The international symposium organized by ZENIT last October pointed out the key principles and best practices that are necessary for installing a functional and effective property transaction system. With reference to the German system the important criteria were emphasized and presented. Especially for societies who are just about to build up a real estate market information system in their own country this is very interesting. They can learn from Germany's experience.

With the digitally-savvy generations coming of age, the manifestations of the rapidly evolving technological changes across all aspects of our lives pose fascinating challenges and opportunities alike in the end-clientsâ€™ digital ecosystem. Transaction banks in the region have been largely perceived to be focused on improving existing solutions internally. This internal focus may not suffice in addressing the end-clientsâ€™ demand for digital functionality and cost-efficiency moving forward.Â Digital Transaction Banking Opportunities & Challenges 3. Digital-led changes in end-client ecosystem.Â Banks in different regions possess varying digital capabilities and maturity of transaction banking solutions, resulting in the need to adopt different digital strategies. Digital trade is not in and of itself new. Digitally enabled transactions, be they in relation to goods or services, have been part of the landscape for many years and often raise the same, or similar, issues as non-digital transactions. This is because digital trade is not just about digitally delivered services, but also about increased traditional â€“ including supply-chain â€“ trade in goods and services enabled through growing digital connectivity.Â Successful firms in the digital age combine adoption of new technologies with access to global markets, so trade policy needs to be seen in the context of a range of other policies which also matter for the shared benefits from digital adoption to materialise. And we need to talk about data. See John Perry Barlow, Intellectual Property, Information Age, in Copy Fights: The Future of Intellectual Property in the Information Age 37, 39 (Adam Thierer & Wayne Crews eds., 2002) (remembering Jack Valentiâ€™s attitude).Google Scholar. 2. Some commentators describe this situation as a sort of â€œparacopyright.â€ See H.R. Rep. No. 105â€“551, pt. 2, at 24â€“25 (1998); Netanel, supra note 119, at 24; David Nimmer, A Riff on Fair Use in the Digital Millennium Copyright Act, 148 U. Pa. L. Rev. 673, 686 (2000); Melville B. Nimmer & David Nimmer, 3 Nimmer on Copyright 12A.18[B] n.15 (2003); See also Seve A digital transaction is a seamless system involving one or more participants, where transactions are effected without the need for cash.Â It is inevitable that financial institutions would have to increase the number of digitized services and offerings, given a rise in the use of automated services. Implementing technology in the financial industry is a necessity for the survival of businesses as customers seek lower-cost alternatives to traditional financial services. Fintech companies have led the revolution in transforming the financial sector by digitalizing the end-clientâ€™s transactional eco-system. Digital transactions involve the execution of multiple transactions by multiple companies, all completed in the span of a few