Taxpayer checks data in the system of base registers

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SUMMARY

In the Netherlands a large number of government organisations cooperates at arranging and keeping up a coherent system of base registers with data on persons, companies, real estate, cars etc. New base registers are created and existing base registers are turned into a coherent system.

The use of this coherent system of base registers by governmental organisations is growing rapidly. Investments are made in technical provisions to make the data available for all employees within the government organizations on central and local level. The frequent use should guarantee the quality of the registered data. Each employee within these government organisations, who uses the data and observes that the data is possibly incorrect, communicates this to the administrator of that data.

But of course the correctness of the data can best be checked by the registered person or company. For this reason it is important that persons and companies themselves can monitor whether all registered data are still correct. To make this possible, all citizens should have access to their own data. This is done by giving all individuals in the Netherlands a personal Internet page, on which they have access to all data in the base registers that relates to them. When something is not correct (anymore) he can use this Internet page to communicate with the organisation responsible for that data.

But only a limited number of persons will take the initiative to check registered data and to inform government organisations on inadequacies. It appears however that there is one moment on which the citizen is prepared to check data and that is the moment on which he is asked to pay taxes. Each owner of a house in the Netherlands annually gets an assessed value of its house for taxation purposes. Based on this assessed value he must pay several taxes. The tax bills stimulate the taxpayer to check this assessed value carefully. At this analysis the taxpayer also will look at the various underlying data that influence the appraisal value, such as cadastral data and registered characteristics of his house.

The experience learns that by this annual revaluation and by allowing the taxpayer to react, these taxpayers play an important role in keeping the date within the system of base registers up to date. In this way the taxpayer becomes part of an Internet community that helps government on improving data quality.

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1. INTRODUCTION

In several publications researchers argue that Land Information Systems (LIS) play an important role in the valuation of real estate. The main reasons are that LIS help to:
- assure the completeness of the valuations;
- optimize the quality of the taxations;
- improve the efficiency of the valuation process.

In the Netherlands, where all real estate is revalued yearly for fiscal purposes, it is becoming obvious that the opposite reasoning also applies. Signals from taxpayers may play an important role in optimizing the quality of a LIS. In other words: the valuations for fiscal purposes force taxpayers to strictly criticise the valuations and the underlying data. If parties involved manage to efficiently collect the findings of the taxpayers, these signals are very useful to maintain and optimize the quality of the LIS. Furthermore this process may also lead to a higher level of confidence in the valuation and tax collecting procedures to a decrease of costs for updating the data.

Another method to improve the quality of the LIS in the Netherlands is the introduction of a coherent system of base registers in the Netherlands. All government agencies are required to use the data from the system of base registers. The registration of assessed values of real estate is part of this system. Government agencies are also required to report if they discover errors in base registration.

The article describes how signals from taxpayers in the Netherlands and signals of government agencies are used to keep the quality of the data in the system of base registers up to date. This is useful for the valuation an tax collecting activities, but this is also useful for other government activities using this data.

2. THE SYSTEM OF BASE REGISTERS IN THE NETHERLANDS

To share data the Dutch government has set up a system of base registers or authentic registers. The development of the registers and all resources and tools to use and optimise the data in these registers is part of broader developments in the field of e-government in the Netherlands. These base registers will assure that government:
- will only request for data when strictly necessary;
- offers a rapid and good service to persons and firms;
- can not be misled;
- improves confidence in its work;
- makes no more costs than strictly necessary.

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At this moment there are base registers for:
- persons (inhabitants of the municipalities / the Netherlands; a register of other persons who live in other countries but are important for Dutch government is in development);
- companies;
- addresses and buildings;
- cadastral information
- topography (small scale; the base register for large scale topography is in development);
- vehicles;
- income;
- assessed value of real estate.

These registrations contain the information that is vital for all kinds of activities of the central and local government (municipalities, provinces, polderboards, police districts, regional fire brigades, etc.). For instance the data of all citizens, businesses and institutions are part of the base registrations. A large number of government organizations cooperates at arranging and keeping up this registers. All government organisations are required by law to use the data which is registered in these base registers. In addition to this obligation each employee within these government organizations, who uses the data and observes that the data is possibly incorrect, communicates this to the administrator of that base register. So if a local or central tax collector finds out that a taxpayer (inhabitant) no longer lives on the registered address, this will be reported immediately to the administrator of the register of inhabitants. The responsibility for this register of inhabitants is on the local level (municipality), but for instance the responsibility for the cadastral information is on the central level. But in fact the responsibility for the system of base registers is for all government bodies.

All government organizations are required by law to use the data within the system. But a large part of the data is also available for private firms and for individuals. For instance firms can use the data to make value added service on the internet or on cell phones (sms-services). But of course not all data is available for private use to prevent the privacy of persons.

Most of the base registrations are linked to each other. This is shown in figure 1. The connections between the different base registrations are the reason why privacy is considered even more a very important issue. By combining data from the base registers, government knows a lot about persons and firms (for instance income, possessions, like real estate (and its value) and cars). This related information is not intended for general use outside government. That's why the protection of privacy is legally regulated. Public authorities and officials have access only to those privacy-sensitive data they really need for their work. For instance, an official responsible for providing parking permits may only see the base registration on vehicles for this purpose. He may not use this information for any other purpose. The Dutch Data Protection Authority (in Dutch: College Bescherming Persoonsgegevens) supervises compliance with this regulations.
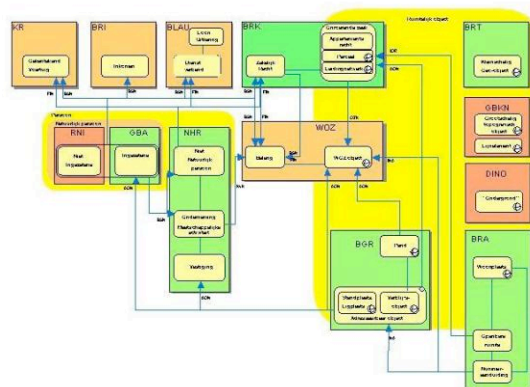
Figure 1: system of base registers

3. THE VALUATION OF REAL ESTATE IN THE NETHERLANDS

One of the base registers in the Netherland is the register of the assessed value of real estate. For this register all real estate is assessed yearly by the Dutch municipalities.

From 2007 all real estate in the Netherlands (more than 8 million objects) is appraised yearly. The appraisal and assessment of real estate by municipalities is regulated in the Act for real estate assessment (in Dutch: Wet waardering onroerende zaken or Wet WOZ).

Originally in 1995 this act requires municipalities to do a revaluation every four year. At that time these assessed values were only used by municipalities, polderboards and the national revenue office for levying a limited number of real estate taxes. In the following years the use of the assessed value for fiscal use was increased by adding other taxes for which the valuation should be used (for instance company tax, inheritance tax). More important however is the fact that government also started to use the assessed value for other purposes. For instance for the activities to prevent fraud with real estate transactions and real estate mortgages the availability of the assessed value is of great importance.

But of course the real estate tax of the municipality and of the polderboard and setting the imputed income of owner occupied houses in the central income tax, are still the most important uses of the Base register of assessed values. In total these taxes generates over € 5 billion (€ 5.000.000.000) each year for these authorities.

In the Netherlands the rates for real estate tax are average in comparison with other (European) countries. The average tax bill, based on the assessed value, for an average house in the Netherlands (assessed value € 250.000) is about € 875. This is shown in de table below. But of course the tax bill can differ, because each municipality and each polderboard can set its own rates.

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Table 1: The average tax bill, based on the assessed value, for an average house

VALUE	TAX	TAX RATE	TAX BILL
€ 250.000	Municipal real estate tax	0,09%	€ 225
	Real estate tax Polderboard	0,03%	€ 75
	Income tax (imputed income owner-occupied house)	0,55% * 0,42%	€ 575
		Total tax bill:	**€ 875**

The 431 municipalities in the Netherlands are responsible for the valuation of real estate. Most municipalities perform the valuation in cooperation with other municipalities or they hire in specialized mass appraisal firms. Because of the development of Computer assisted mass appraisal systems (CAMA-systems) the yearly revaluation is carried at even lower costs per year than the revaluation once every four year, when the Act for real estate assessment was established.

The mayor part of the work for the yearly revaluation and assessment of real estate consists of:
- analysing market data;
- updating object characteristics for the reappraisal;
- verifying the new appraised values before sending to the taxpayer;
- dealing with appeals.

Analysing market data
For analysing the market data, the municipalities get all sales prices of real estate from the central Cadastre. These sales prices are compared with the assessed values. Differences between sales prices and market prices are analysed and give information on:
- market developments since the last valuation date;
- special conditions at the market transaction;
- chances of the property since last revaluation;
- inaccuracies in the previous assessed value.
Because for the appraisal of residential property valuation methods based on comparison with sale prices are used, analysing of sales prices is the most important element of market analysis. In addition to the sales prices from the cadastral registration, municipalities also look at advertisements for the sale of houses on the internet. These ads not only give information on the asking price for the property but also makes it possible to check whether the object characteristics registered by the municipality match with the description of the property in the advertisements.

For the non residential property the appraisal can not be done only by using the comparison with sales prices. The number of sales prices is too small for accurate valuation. For that reason municipalities have to collect market data on rent price, building costs etc. for these non residential properties. For these properties the appraised value will be based on capitalisation of rental value or corrected rebuilding costs also using special CAMA-systems.

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updating object characteristics for the reappraisal
Thanks to the improvement of the Computer assisted mass appraisal systems (CAMA-systems) during the last years, the quality of the appraised values is nowadays depending on the quality of the object characteristics used for the valuation. Therefore the activities for improving the quality of these data and keeping these data up to date with all changes to properties are most important for all organisations dealing with valuation.
The object characteristics for valuation can be divided into two groups:
Primary object characteristics like:
- size of the parcel;
- type of the building;
- size of the building;
- building year.
Secondary object characteristics like:
- quality of building and building materials;
- maintenance condition of the property;
- special characteristics of the site of the property (e.g. near water or near a busy road);
- special resources or lack of resources (e.g. no electricity).

The secondary object characteristics are needed especially for the valuation. Keeping these data up to date is therefore the responsibility of the organisation performing the valuations (municipality, cooperation of municipalities or mass appraisal firm). Keeping these data up tot date and improving the quality of these data is mostly combined with the analysis of market data. For instance changes of maintenance conditions are often made just after a transaction and the appreciation of certain site characteristics (property near water) appears when analysing sales prices.

The primary object characteristics however are of a more general use. That is the reason that these primary object characteristics are registered in base registers (building year, size of building and type of building in the base register for buildings and size of parcel in the cadastral registration). So the link between the appraisal of real estate and the system of base registers is not only caused by the fact that the assessed value is also registered in one of the base registers, but also because other base registers are intensively used for the appraisal.

The other reason why base registers are used for the assessment of real estate is the fact that each owner of a property should be informed about the assessed value. Therefore accurate and up tot date information is needed about the ownership of real estate (cadastral information) and about the current address of the owner (person or firm).

The relation between the assessment of real estate and the system of base registers is outlined in figure 2. The links with the base registers for buildings and addresses, the cadastral registers, the registration of persons and companies and the base registration of geometrical data are marked.
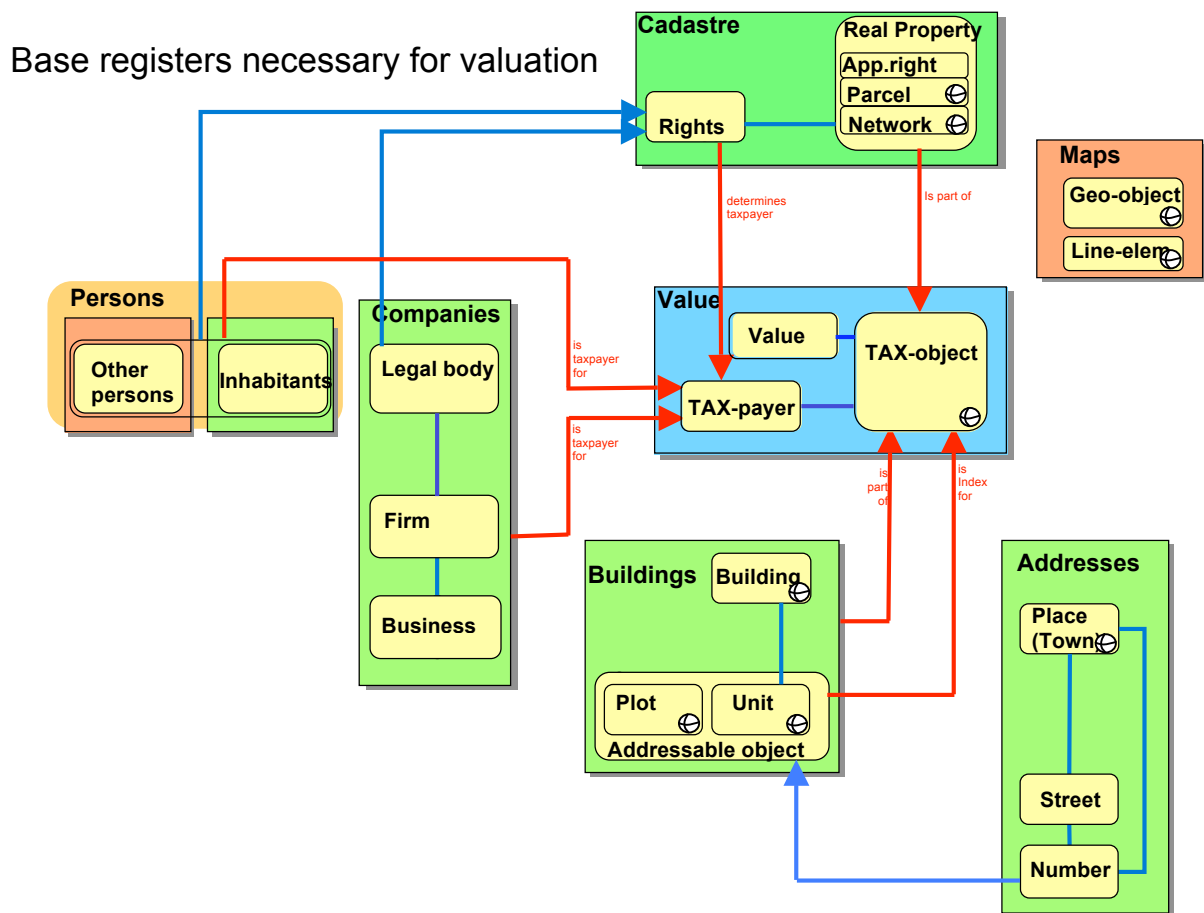
Figure 2: base registers needed for assessment of real estate

Because of this large number of links between the assessment of real estate and the system of base registers in the Netherlands, the taxpayer plays a large role updating the data within this system and improving the quality of the data within the system.

verifying the new appraised values before sending to the taxpayer
The Computer Assisted Mass Appraisal systems (CAMA-systems) are important for the appraisal. But it is even more important that the results of these CAMA-systems are checked thoroughly before the assessed value is sent to the taxpayer. The municipalities do this final control by:
- comparing the assessed values with sales prices (ratio-studies);
- comparing with the previous assessed value;
- consistency check on mutual relations;
- special check for properties that were involved in an appeal for the previous assessment.

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The Dutch Council for Real Estate Assessment (in Dutch: Waarderingskamer) has set up guidelines for this final control. This council also inspects the valuation process and judge whether municipalities make use of these guidelines for their quality control. Only when the several checks have lead to satisfying results, the Council for Real Estate Assessment allows municipalities to send the assessed values and tax bills to the taxpayer.

dealing with appeals
Municipalities estimate the market value of all properties as accurate as possible, using the best possible data. But even this accurate way of working can not guarantee that all assessed values are correctly in accordance with the actual market value. For that reason taxpayers can appeal against the assessed value. Yearly about 3% of taxpayers will appeal, but less than half of these appeals will lead to a lower value. Dealing with these appeals however causes a great amount of work. Therefore municipalities try to diminish the number of appeals by producing the best possible valuations, but also by improving the communication with taxpayers to explain the assessment.

4. FIVE METHODS FOR IMPROVING QUALITY OF DATA

Maintaining or even improving the quality of data in an information system requires more energy than setting up the system. Therefore setting up a system for efficiently improving the quality of data is very important. For improving the quality of data used for the mass appraisal in the Netherlands we distinguish five methods:
1. accurate procedures for registration of changes;
2. regular checks of registered data by surveys, reviews in the field or reviews by using (aerial) photo's, etc.;
3. intensive use of data and examining all problems encountered;
4. giving data to other users under the condition that all (potential) errors are reported;
5. giving registered persons, registered companies or stakeholders the possibility of reporting (potential) errors in the registration of "their" data.

For improving the quality of data within the system of base registers in the Netherland and of data for the mass appraisal in particular all four methods are used. Because the accuracy of the data has a direct influence on the assessed value and on the amount of tax to be paid, taxpayers prove to be a very important group of stakeholders for presenting signals on potential errors in the system of base registers.

4.1 Procedures for Registration of Changes

All changes in the system of base registers should be made very carefully. Therefore it is required to have an official document for all changes made in the registrations (with exemption of the geometrical data in maps).
The official document used are for instance the notarial deed for the transfer of real estate, the building permit for a new property or the official notification of the assessed value as part of the tax bill.

4.2 Surveys and Reviews in the Field or by Using Photo's

The administrator of the data has the first responsibility to guarantee and to maintain the quality of data. This administrator has to perform reviews on a regular basis.
Nowadays a lot of these reviews can be made using automated techniques. For instance the comparison between registered buildings and recent aerial photographs can be done by the computer. Also a lot of consistency checks can be done by the computer.
Even more important is to limit the number of reviews to the data which have not been checked recently.
For instant it can be important to check the quality of data on buildings once every five year. But a building that was surveyed only two years ago because of a building permit or because of an appeal against the assessed value, does not have to be reviewed again.

4.3 Intensive Use of Data and Examining All Problems Encountered

The yearly revaluation makes intensive use of data within the system of base registers. By using these data for instance when analyzing the market data and by comparing the data in the base registers with characteristics mentioned in advertisements when the property is sold a lot of potential errors in the base registers are detected.
Because all property in the Netherland is assessed yearly, these activities give a lot of information on potential errors in the base registers. The activities for the yearly revaluation will result in the most intensive use and check of data on real estate.

4.4 Reporting Signals of (Potential) Errors by Users of Data

The system of base registers should be used by all government agencies in the Netherlands. The frequent use should guarantee the quality of the registered data. Each employee within these government organizations, who uses the data and observes that the data is possibly incorrect, communicates this to the administrator of that data.

So not only the activities for the yearly revaluation will help to improve quality of the data on buildings, but also a lot of other activities will help to continuously improve these data.

But not only the data used for the appraisal will improve because of this system. Also the assessed value is part of the system of base registers. Users of the assessed value, for instance polderboards, the national revenue office, but also a notary can report signals about potential errors in the assessed values. Reporting of signals of potential errors is compulsory for all government authorities. The administrator of the data is required to investigate, within a certain amount of time, if the presumption (there is an error in the data) of the other public organisation is correct.

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4.5 Signals of Registered Persons, Registered Companies and Stakeholders

The correctness of the data can best be judged by the registered person or company or the person or company that has a strong interest in the registered data. This method of checking data by stakeholders corresponds to the basic idea of the book "The Wisdom of Crowds", written by James Sorowiecki. In this book the author argues that information which is known in groups in many different situations can be used as a very powerful instrument.

To check the information it is important that persons and companies themselves can monitor whether all registered data are still correct. To make this possible, all citizens should have access to their own data. In the Netherlands this is done by giving all individuals a personal Internet page, on which they have access to all data in the base registers that relates to them. When something is not correct (anymore) he can use this Internet page to communicate with the organisation responsible for that data.

But only a limited number of persons will take the initiative to check registered data and to inform government organisations on inadequacies. It appears however that there is one moment on which the citizen is prepared to check data and that is the moment on which he is asked to pay taxes. Each owner of a house in the Netherlands annually gets an assessed value of its house for taxation purposes. Based on this assessed value he must pay several taxes. The tax bills stimulate the taxpayer to check this assessed value carefully. At this analysis the taxpayer also will look at the various underlying data that influence the appraisal value, such as cadastral data and registered characteristics of his house.

The experience learns that by this annual revaluation and by allowing the taxpayer to react, these taxpayers play an important role in keeping the data for the appraisal but more in general the data within the system of base registers up to date. In this way the taxpayer becomes part of an Internet community that helps government on improving data quality.

5. CONCLUDING REMARKS

The quality of the data in any Land Information Systems (LIS) can be considered as an important condition for using these data. In the Netherlands the most important LIS are now part of a system of coherent base registrations. Legal rules force government agencies to report if they identify (potential) errors in the data of other government agencies. These reports are an important feedback to improve data quality.
But in practice there is an other more powerful feedback. The feedback that is given by the registered persons, the registered companies or the direct stakeholders for the registered data gives even more information on errors and changes in the registered data. By stimulating persons or companies to give this feedback government can improve the quality of registered data in an efficient way.

Experiences show that modern techniques in combination with financial interests can stimulate taxpayers to critically judge the assessed value as well as the underlying data

provided by the local government. If government agencies can manage to use this signals to improve the quality of data, it will raise the trust of taxpayers in the government.

So we now see a development from "setting up a land information system to collect taxes" toward "levying taxes to improve the quality of the land information system".

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BIOGRAPHICAL NOTES

CONTACTS
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