CADASTRAL INNOVATIONS AND FINANCIAL CRISIS
The Case of the Netherlands Kadaster

Godfried BARNASCONI and Paul van der MOLEN (the Netherlands)

Key words: Land Administration, Cadastre, Crisis, Innovations.

ABSTRACT

The world wide financial crisis influences the business figures of land administration organisations dramatically, as the decline of the volatility of the real estate and credit market is manifest in many countries. An obvious management response in general is drastic budget cutting. As basic facilities for operational activities (i.c. property registration and cadastral survey) should be provided in any case, budget cuts might severely affect other further-reaching strategic ambitions. This happens precisely in a period where the demand for transparent markets, governance, *e*-government, and location based applications require robust and swift cadastral innovations. Although governments are also cutting down drastically, political support for cadastral innovations in support of these demands is more important than ever. This paper reports about the fragile balance between crisis and ambitions in the Dutch Kadaster, where discussions in the Parliament finally turned out positively. By consequence, strategic ambitions still can be carried through.

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1. INTRODUCTION

The aim of this paper is to explain how the Dutch Cadastre, Land Registry and Mapping Agency (the 'Kadaster') copes with the impact of the global financial crisis with respect to its strategic ambitions. In section 2 we will briefly describe the impact of the global financial crisis on the real estate and credit markt in the Netherlands. Section 3 describes briefly the funding mechanism of the Dutch Kadaster in order to understand the meaning of the business results and it provides the actual business figures showing the dramatic reduction of the financial result, obviously due to the decline in revenue. Section 4 exposes the Parliamentary interference in the revenue part of the Kadaster, in particular with respect to the level of fees (tariffs). The minister used the argument of the indispensable societal benefits of Kadaster to convince successfully the Parliament to endorse a substantial increase of the fees, which increase was -by the way- the fourth since 2007. Section 5 highlights recent innovations, while section 6 explains Kadaster's new strategy (2010-2014), which meanwhile acquired endorsement of the Supervisory Board, the User Board and recently, the minister herself. Realising that the organisational restructuring that is put through since 2006 is expected to show substantial economical benefits in 2010 and the years thereafter, section 7 concludes that all building blocks are now set out, to swiftly support society in an innovative manner. The paper has to be seen as a follow up of the paper on 'Kadaster in times of financial crisis' as delivered to the FIG Regional Conference in Hanoi, Vietnam, in October 2009.

2. THE DUTCH REAL ESTATE AND CREDIT MARKET

The statistics hereafter reveal the dramatic drop in the volatility of the real estate and credit market.In 2005 478,200 transaction deeds and 770,900 mortgage deeds were registered, while the figures are now 452,000 transaction deeds and 546,400 mortgage deeds in 2008 and for 2009 even less: 300,000 transaction deeds and 380,000 mortgage deeds. The transactions in residential homes are included in these figures. Although the level of houseprices remains quite stable the last months, the number of transactions continues to decrease strongly.

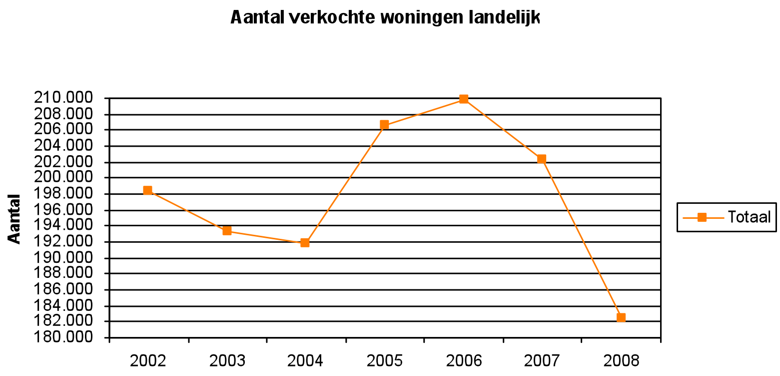

Fig 1 The number of sales of residential homes per year 2002-2008

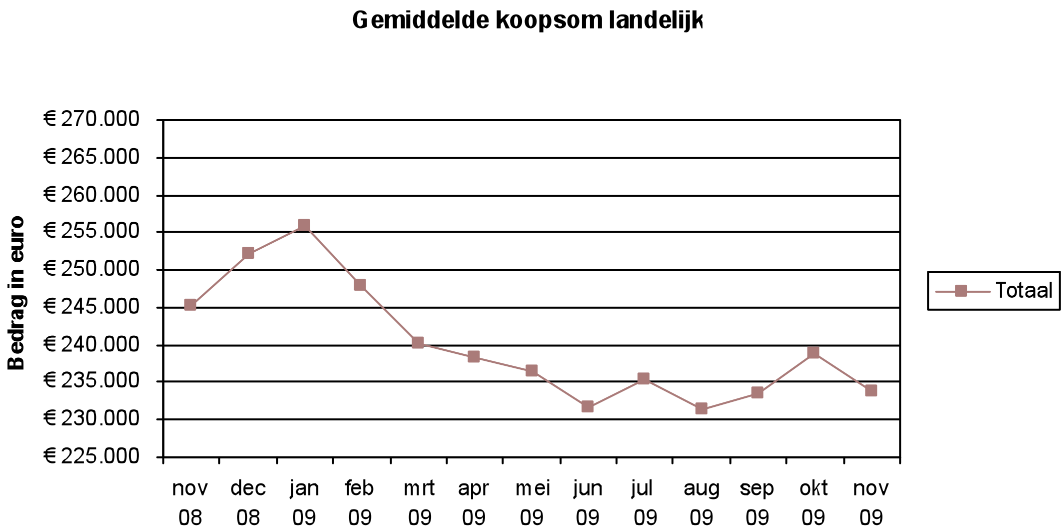

Fig 2 Average purchase price of residential homes per month in 2009

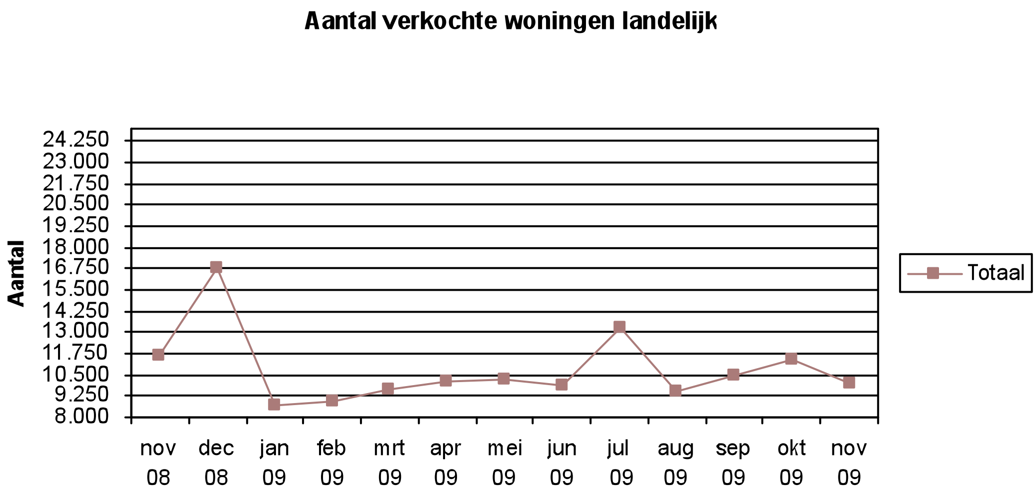

Fig 3 Number of sales residential homes per month in 2009

Fig 4 Procentual development of prices of residential homes 2002-2008

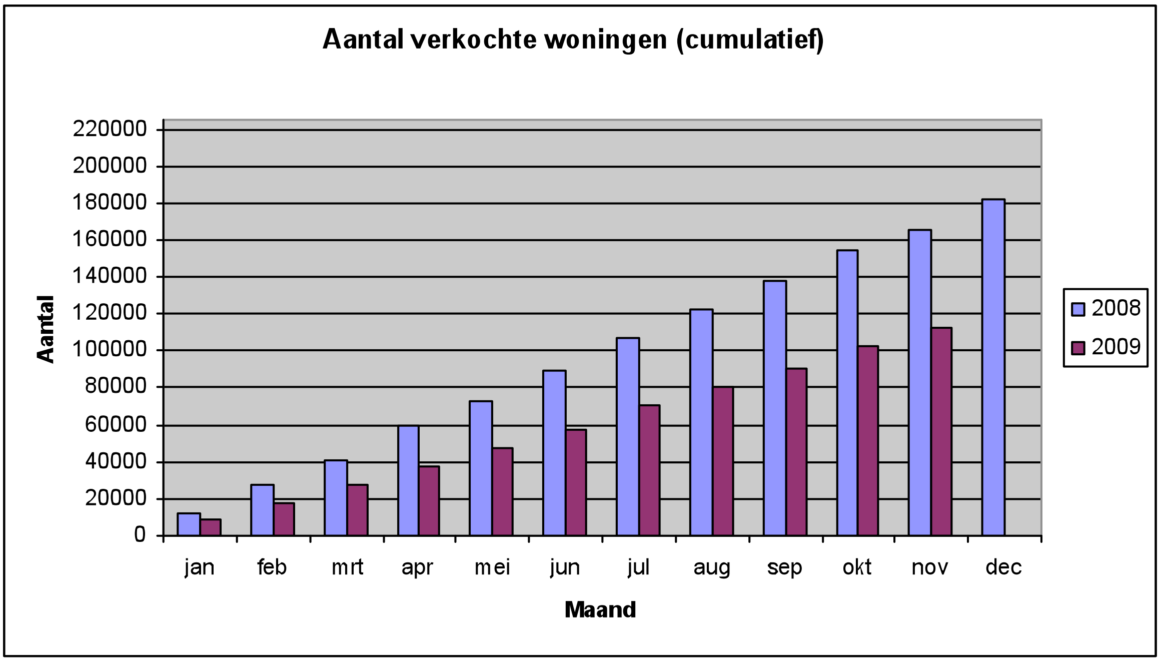

Fig 5 Development of sales of residential homes per month in 2009 compared with the same month in 2008 (accumulation)

	Number mortgages Q3 08	Number mortgages Q2 09	Number mortgages Q3 09	Increase Q3 09 compared with Q3 08	Increase Q3 09 compared with Q2 09
1	71,344	49,418	52,805	-25.99%	6.85%
2	14,849	9,357	8,424	-43.27%	-9.97%
3	3,556	2,439	2,416	-39.65%	-12.01%
4	6,501	3,441	3,123	-51.96%	-9.24%
5	19,856	15,580	16,125	-18.97%	3.50%
Total 1 - 4	**96,250**	**64,655**	**66,498**	**-30.91%**	**2.85%**

	Total sum of mortgaged loan Q3 08	Total sum of mortgaged loan Q2 09	Total sum of mortgaged loan Q3 09	Increase Q3 09 compared with Q3 08	Increase Q3 09 compared with Q2 09
1	€20,048,911,677	€13,100,772,807	€13,907,884,597	-30.63%	6.16%
2	€ 1,589,123,526	€ 966,005,423	€ 878,878,407	-44.69%	-9.02%
3	€ 406,731,222	€ 258,055,365	€ 232,378,048	-42.87%	-9.95%
4	€ 2,119,366,378	€ 1,017,056,642	€ 936,851,143	-55.80%	-7.89%
5	€ 4,940,203,975	€ 3,812,252,903	€ 3,872,073,419	-21.62%	1.57%
Total 1 - 4	**€24,164,132,803**	**€ 15,341,890,237**	**€15,955,992,195**	**-33.97%**	**4.00%**

Fig 6 Development number and sum loans secured by a mortgage for categories (1) registered as the first mortgage on a property, (2) second mortgages, (3) third mortgages, (4) all others, (5) number of mortgages that were converted into new ones (also included in category (1), so the total is (1)-(4).

3. HOW IS THE DUTCH KADASTER FINANCED

The law 'sui generis' (Kadaster Organisation Act 1994 State Gazette 125) comprised the concept that there should be a structural equity of 30% of the balance sheet-total (exclusive of reserves and provisions, the 'short balance sheet'), and a so called cyclical equity, a piggy bank as a first reponse to bad time. According to the law, the volume of the piggy bank should be negociated annually between the Kadaster and the minister. Today, the structural equity is fixed on 58 million € and the cyclical reserve on 34 million € (letter 31924 XI 10 of the minister to the Parliament 29 June 2009). The mechanism agreed on in 1994 is as follows: when a certain business-year results in a profit, the amount will normally be added to the structural equity. When the equity exceeds the agreed figure, the minister should get a proposal to decrease the fees, to bring back the equity in the next year. When the annual result is a deficit, then the equity gets lower than agreed, and the minister should get a proposal to increase the fees, to raise the equity in the next year The mechanism of steering fees via assessment of the equity is further described by (van der Molen, 2001) and in the earlier mentioned paper for the Hanoi conference.

4. IMPACT OF THE CRISIS ON THE DUTCH KADASTER

The negative development of the national economy and the related decline of the real estate and credit market, cast their shadow on the financial position of the Dutch Kadaster.

The development of deeds of transfer and of deeds mortgage(Annual Report 2008, see www.jaarverslag-kadaster.nl/english):

	Deeds of transfer	**Deeds of mortgage**
2004	444,700	702,900
2005	478,200	770,900
2006	497,700	748,800
2007	488,100	632,500
2008	452,800	546,400
2009 estimation	330,000	380,000

Fig 7 Number of registered deeds of transfer and of mortgage per year

As explained in section 3, the decline in revenue generation in the profit and loss statements leads inevitably to a decrease of the equity (Annual Report 2008, Half-yearly Report 2009, preliminary business figures 2009)

	Business Result (million €)	Equity (million €)
2004	+ 4.7	+92.4
2005	+29.8	+124.8
2006	+3.6	+129.3
2007	-74.6	+58.5
2008	-50.6	+8.4
2009	+ 2.1	+10.1

Fig 8 Development of business result and equity 2004-2009

It should be noted that the equity –as required by the law- was much too high in the years 2004-2006, then in 2007 it met the requirements namely +58.5 million €. This was caused by the mechanism of decreased fees in May 2006 (-10%) and January 2007 (-10%). Unfortunately the much lower fees, just before the outbreak of the crisis, played tricks on us when the impact of the financial crisis became manifest.

The mechanism as described in section 3 (using the level of fees to keep the equity under control), caused the following decisions by the minister on the fees.

1994	1995	1997	1998	2002	2004	2006	2007	2008	2008	2009
-15%	- 30%	-10%	-25%	+20%	+2,25%	-10%	-10%	+5%	+26%	+10%

Fig 9 Change of the level of fees since becoming an independent public body in 1994

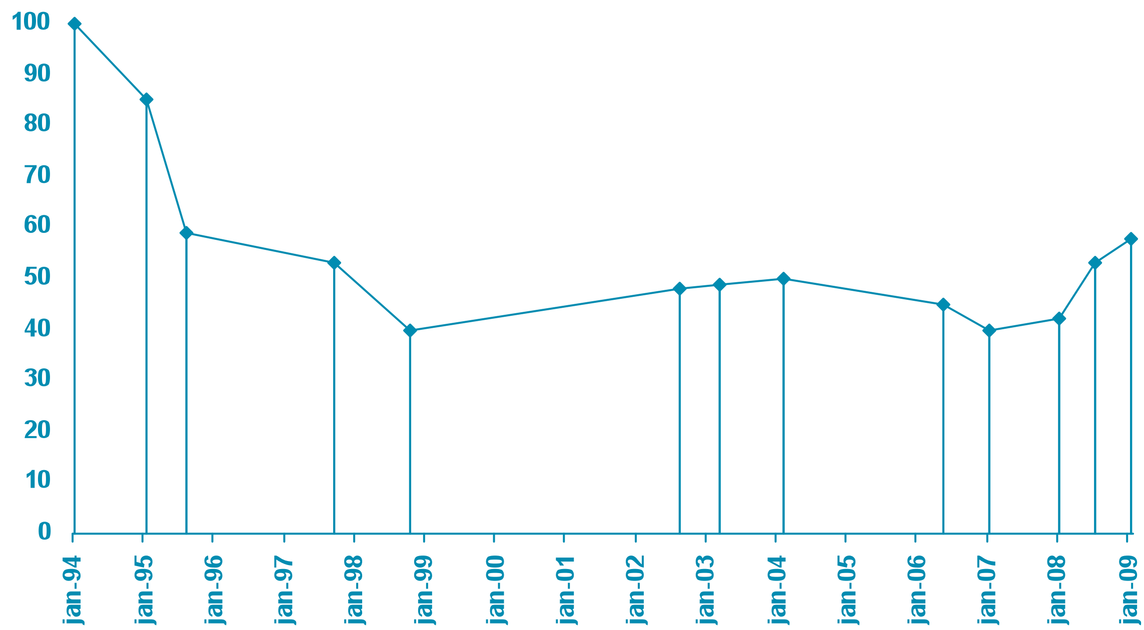

Fig 10 Level of fees compared with 1994 (index 100)

With regard to the equity in July 2009 (-5.6 million €), it became clear that another increase of the fees was due. It was calculated that an increase with 25% was necessary, in order to guarantee the continuity of the agency. Referring to section 3, the equity decreased to -0.5 million € in July 2009 (Parliamentary Minutes 2 July 2009). So, even after two substantial increases of the fees (mid 2008 +26%, January 2009 +10%) the equity was still far from the required equity. As explained, the structural part of the equity should be 58 million € with additionally a cyclical equity of 34 million €, together 92 million €. As the cyclical part is meant to cope with bad times and can be spent, the equity should thus at least be 58 million €. Therefore the increase of fees was considered as necessary.

This proposal met very serious criticism in the Parliament. Questions were asked by members of the Liberal Party. A motion was adopted on 2 July and the minister was asked not to agree on the proposed increase.
The debate in the Parliament showed that, without the increase of about 25% by August 2009, the equity would decrease to - 43 million € end of 2009, and -83 million € in 2010. Even with the increase of August 2009, the equity will develop to -22 million € end of 2009 and to -13 million in 2010. As the minister concluded, a normal company would have been bankrupt. 'As he Kadaster is not a 'normal company', nevertheless being a fee-financed organization it still has to run its own business, the increase of the fees was considered as very necessary', so said the minister and she did not meet the endorsed motion.

The remark about bankruptcy was correct. Solvency ratio, current ratio definitely show red figures and the ability of the Kadaster to pay its debts is weak. Normal companies might go bankrupt, at least when banks are not willing any more to provide credit. With a negative equity, banks easily cut off funds and the creditors will then file for bankruptcy. Therefore a main priority was to guarantee liquidity of the Kadaster. We may have mortgaged our offices, which are -as fixed assets- valued at 60 million €. As a public body however, the Kadaster successfully applied for a credit facility of the Ministry of Finance (a current account). The balance sheet 2008 shows that this facility was used to an amount of 17.7 million € (interest rate EIONIA fixing), while for 2008 and extra add-on was agreed of 25 million €. This facility gives the agency sufficient liquidity to be solvent. As the liquidity account end of 2008 showed (annual report 2008), liquidity amounted to 19.5 million €, of which 17.7 came from the current account.

However, pointing to the important tasks of the Kadaster in society, with reference to the developments as mentioned in our –then current- long term strategy plan 2009-2013, the minister could convince the Parliament to endorse her policy. The Parliament forced her however to commit herself to a discussion of the Long Term Policy Plan (although it is de facto an internal Kadaster document), and to refrain from other increases of the fees -at least- until 2011.

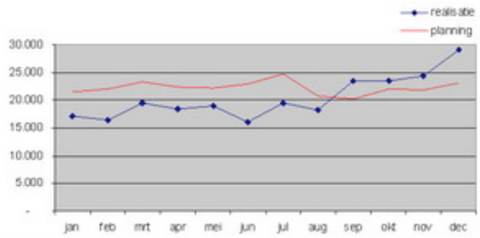

Fig 11 Realisation of income in 2009 compared with planning (in thousand € per month, blue= result, red = planning)

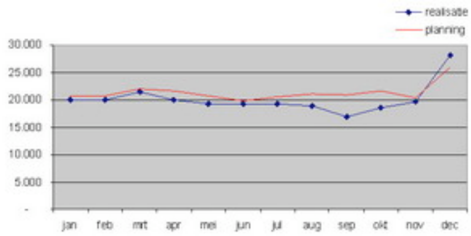

Fig 12 Realisation expenses in 2009 compared with planning (in thousand € per month, blue = result, red = planning).

The effect of the increase of the fees is clearly visible. The revenue starts to rise per Augustus. Meanwhile substantial cost-reductions as result of the earlier mentioned organisational restructuring became visible. Less costs over 2009: 16 million € compared with planning. For the first time in years the result became positive again, +2.1 million €, which amount will be added to the equity.

5. CADASTRAL INNOVATIONS

In the last two decades, the information society has become manifest. Society has new expectations regarding the role of land administration organisations. In the willingness and capacity to adapt to these new expectations, lies the key for our kind of organisations to safeguard a valuable role in society. What are the major areas of development?

The land- and real estate market
Traditionally, land administration organisations facilitate the operations of the market by providing security of transactions. In the nineties, the same organisations published their first statistical data about market prices and transactions, in order to increase market transparancy: Real Estate Barometer Sweden, House Price Index UK, Housing Value Index Netherlands. The provision of such information is booming now.

Governance
Traditionally, the land administration information which is used by governments concerns land taxation, land-use planning and the acquisition and management of state lands. In recent years, new areas of information have emerged for them, such as: new sorts of land rights according to public law, subsurface infrastructure such as cables and pipelines, telecom networks, climate change, water, safety and homeland security.

e-Government services
Governments are aiming at streamlining their services through the introduction of *e*-government facilities. Land administration organisations can assist building online information architectures. This includes providing policies, technical and legal means to make electronic information exchange possible.

Economic activities in general
The demand for location-based information is ever increasing. This economic sector enjoys the attention of many private-sector companies. Nevertheless, the underlying fundament often comes from the national mapping agencies, providing digital topographic datasets and coordinates.

The next paragraphs show how Kadaster has been adopting its role to the new expectations and developments.

The evolving role in the land- and real estate market
For the professional user Kadaster provides monthly real-estate statistics and quarterly mortgage statistics. Regular reports about their market share are available for notaries, real-estate agents and mortgage banks. Land- and real estate price monitors are available regarding various categories of immovables, such as residential houses, business real-estate, agricultural parcels, retail real-estate and the lease market. In many of these reports Kadaster combines its own data with specific datasets of third parties, such as DCA Service Centre for Rural Market or DataLand (a cooperation of all Dutch municipalities to provide access to all their data). Kadaster also offers tailormade solutions, such as specialised land monitor systems for real-estate management companies.

The Kadaster 'House report' combines data of various data suppliers, on the fly, with regard to one particular house. Doing so, it provides for a report comprising all cadastral data, municipal data, maps and aerial photographs, fish-eye pictures, environmental data and land-use data.

For citizens, Kadaster's main focus has been to make access to data much easier, mainly through web services. Of course, cadastral information is available through the corporate website of Kadaster, www.kadaster.nl. In addition, cadastral data have been made available through the websites of several organisations which provide property information. For instance, www.geoz.nl combines Kadaster data with municipal data of DataLand. The website www.boerzoektgrond.nl combines Kadaster data with information of Stivas, an organisation representing farmers searching for suitable land plots to acquire. The website www.boerderij.nl comprises land transaction information for farmers. The two sites www.woningwizard.nl and www.woningquote.nl estimate the value of a property and provide price information through an sms-service. In an attempt to improve the visualisation of cadastral objects, Kadaster started a cooperation with Cyclomedia Ltd, to combine cadastral information with 360^o-photographs.

Kadaster has also been creating awareness by attracting citizens offering free information. Through the website www.vindjeeigenhuis.nl ('find your own house'), citizens have free access to a limited set of data of their own house. Citizens can ask for a calculation of the value of a house, based on the purchase price in the past and the development of the price index since. Paid services aimed at private home owners include: an sms service providing information on the most recent purchase price and transaction date when sending an sms message comprising zipcode and house number. Kadaster's Purchase Price Line hosts a computer for giving purchase prices, receiving 9000 calls per month.

The evolving role in governance

Kadaster has supported the Dutch government in its policy making by increasingly providing specific information and products. For instance, 'Neighbourhood Monitors' monitor the social development of weak neighbourhoods, using indicators such as house transactions, mortgages, foreclosures and seizures. Kadaster participates in projects such as 'Geodata Infrastructures in Disaster and Crisis Management' and creating online portals such as 'Public Services Mapped' and a new national geoportal. Kadaster's skills in creating spatial data infrastructures allowed for the provision of so-called 'Information Fundaments'. In addition, Kadaster has developed a colour 'hot spot' map showing the areas where house prices fluctuate.

Cadastral ownership information has been applied in new ways. In areas where the government intends to implement a certain land use (for instance: town development or water management), Kadaster provides reports and maps showing the status of land ownership. The government also receives reports about the distribution and strategic positions in property ownership ('Who owns the Netherlands'). The Land Mobility Report gives detailed information about the number and nature of transactions in rural areas. A 'Trackplanner' makes it possible to optimize trackdesign with respect to impact on landownership and use.

Kadaster has also provided new sorts of information. For instance, it provides for the information exchange regarding underground cables and pipelines, in order to prevent excavation damage. Recently, the 10,000th network operator registered. The corresponding online portal went live in November 2009. In 2009 300,000 excavation information requests were received (analogue or digital). Furthermore, Kadaster has been providing access to energy labels obligatory to houses since 2008.

The evolving role in *e*-government

In the Netherlands, the policy for implementing e-government is laid down in the intra-governmental National Programme. The main access to electronic government service is through the portal www.mijnoverheid.nl ('my government'). The portal integrates information from various government sources, one of which is Kadaster. It personalises the information for citizens and companies. It is operational since spring 2008.

In June 2008, the Dutch government announced the adoption of a strategic document regarding geo-information, called GIDEON. It is to be implemented in the years 2008-2011. Kadaster played a substiantial role in the development of the document. One of the elements is the creation of a national geo-information portal, providing easy *e*-access to all geographic and topographic information. In another initiative, 'Public Services Mapped', several ministries and Kadaster cooperate to boost innovations in the access to all geo-information datasets. In this respect, remote access to cadastral data as a web service (XML) is already provided for a number of standard land information products. As web services are considerered a trend, Kadaster invests in improved web services for cadastral maps, topographic maps and purchase price indexes.

An increasing worry in society concerns the lack of transparancy on public rights on land ('public restrictions'). For this reason, the government decided that Kadaster should register public rights when imposed by the central government and water boards. All 440 municipalities should maintain their own register. Kadaster provides a web portal for access to both data sources.

In 2000 the government realised that the introduction of *e*-government was not possible without a severe restructuring of its own information architecture. Key registers are the core of this architecture. These registers are defined by law as the unique source of a particular piece of data, obligatory to be used by all government bodies. Kadaster is responsible for the key registers Cadastre and Topography and maintains the IT-system that provides access to the municipal key register of Buildings and Addresses.

The evolving contribution to economic activities at large

Many economic activities have a location reference. When administrative data are linked with coordinates, it is possible to visualise the information on maps, providing useful information for all involved. Kadaster provides such service. Kadaster's object-oriented 1:10,000 Topographic Map enjoys much demand by a myriad of users, including the recreational mapping industry. Kadaster is investing in a new service called Location-Based Information Supply. Kadaster will be able to connect to a PDA, identifying its location automatically, supplying cadastral map data on which the PDA-user can click for more location information. Together with company GlobeAssistant, Kadaster develops an i-Phone application for access to cadastral information.

6. NEW BUSINESS STRATEGY 2010-2014

Kadaster's business strategy, which is currently under implementation, is earlier discussed in my paper for the FIG Regional Conference in Accra, Ghana , 2006 ('Redesign Land Administration Strategy for Good Governance', plenary session number 1).
This paper pointed out that on the basis of a modernization of the operations which pushes back the frontiers and ensures for the Kadaster's acquisition of a powerful position, the strategic sub-objectives were summarized as follows:

- The investigation regarding evolution towards a (more) positive land registration system.
- The introduction of a 3-D land register (inclusive of cables and pipes)
- The ambition to adopt the role as a centre for a range of authentic registers
- The provision of a more complete insight into the private-law and public-law status of registered property, inclusive of the relevant juristic facts.
- The acquisition of a substantial role in the organization of the information needs of the chain in the real-estate market.
- The provision of an appropriately-linked set of topographic and geographic datasets which are object-oriented and mutually consistent with respect to changes.
- The fulfilment of a pivotal role in the geometric infrastructure (*x, y and z*)
- The role as a prominent partner for the EU in the harmonization of registered-property law, land registration, and cadastres.
- The development of flexible land-planning instruments suitable for use for a variety of societal spatial objectives.

As said earlier, every year Kadaster publishes its rolling strategic document for the next 5 years (Long Term Policy Plan), which needs approval or support of the Supervisory Board, User Board and minister. Since 2005, the Long Term Policy Plans elaborate the one as presented in Ghana. According to the management decision those days, in 2010 Kadaster would renew the long term strategy fundamentally. This was done during 2009, and recently the minister approved the new plan 2010-2014. Of course strategic plans never are a discontinuation of earlier plans. Also the Plan 2010-2014 builts on the ones before. However, the Executive Board took some more distance from the technical policy aspects ('what to do') and focussed more on the organisational aspects of the work ('how to do').

The Plan distinguishes 7 different strategic themes, that cover the workfield of the Kadaster.

- Theme 1: Kadaster's main role of **dataacquisition and datamanagement**, aims at satisfying optimally the needs of our customers. This requires not only the delivery of services, but also how we acquire and manage our data. As the Kadaster is a 'unified' type, these datasets concern both registered information and geo-information. Further optimalisation will comprise even better reliability and completeness. The continuity of the service must be 100% guaranteed, which is a standing goal. The goals of developing a 3D approach, parcel subdivision prior to the property transaction using maps and images, interoperability of our datasets with others', remain priority. 'New' is enhancing the cooperation with partners, whether from public or private sector, introducing sourcing, may be certification of vendors, and a flexible balance between internal and external capacity.

- Theme 2: Kadaster's main role as **supplier of services**. While in the field of 'dataacquistion and datamanagement' the managerial focus is on quality, in this theme the focus is on being a good service-provider 'New' is that datasharing and dataintegration will be paramount, which will be accompanied by professional and tailor made advisory services. Kadaster will develop more alliances with other serviceproviders than was done earlier. A beter dialogue with existing and potential partners should direct the way forward, safeguarding the same level playing field for the distinguished actors (to stay away from current irritations between public and private sector about 'who is doing what').
- Theme 3: Kadaster's main role as **datasupplier**. 'New' is the focus on the shift from geo-data to geo-information, which requires better datasharing and dataintegration, and the use of new technologies. The customer should be serviced in a tailormade manner, providing all relevant geo-information necessary for the customer's specific business process. This demands also for robust web-portals, where customers may have access to data from different sources.
- Theme 4: **Innovative attitudes and skills**. Kadaster can only remain of value for society, when it is able to respond to developments and changes in society in a meaningful way. 'New' is the awareness that 'open innovation' and 'partnerships' need a proper embedding in the organisation, which must encourage 'out of the box'-thinking and stimulate creativity. Kadaster is organised in a professional way, with ISO-certified procedures and decision mechanisms, which makes it sometimes difficult for 'innovations' and 'creations' to survive in the formal fabric. The Board will create more possibilities here.
- Theme 5: Kadaster and **partners**. Until today, Kadaster tends to operate on its own, with as such a good results (high customersatisfaction). 'New' is that the Executive Board believes that the way forward demands better cooperation with public and private parties, much more intensive than ever before. The crux for a good future is 'working in partnerships' for achieving added value in geo-services and geo-information provision.
- Theme 6: Kadaster wishes a **strategic dialogue** with partners. Of course Kadaster always operated in an environment of public and private organisations, but ''new' is that the opinion of those organisations will get an important role in the decisionmaking process, when it comes to making choices to develop new products and services whether alone, in partnership, or even not at all, because another party is more eligible or determined to perform. Kadaster wants to be transparent in its business considerations and decisions, aiming at more benefit for society and a better relationship with our stakeholders. So far, these relationships did not always remain without tension. Therefore Kadaster believes that such a strategic dialogue must have an equal, open and with engagement.
- Theme 7: Kadaster and its **funding**. My paper for Hanoi (mentioned earlier) revealed that the financing mechanism should be reconsidered, as one of the lessons learnt from the financial crisis. Another issue that was brought forward there was the desire

for more cost-flexibility, so that downscaling and upscaling along with the market trends is more easy than it is now. Internally, the mechanism of fee-based funding and equity steering has proven to work well when the market is not that much volatile (1994-2006), but showed serious weaknesses in times of crisis (2007-2009). Re-consideration will most likely focus on (1) the participation of the government in the funding, instead of being 100% dependent on fees and (2) the level of the cyclical part of the equity. An improved cost-flexibility likely brings us to a better balance between what we do by ourselves, and what we ask the private sector to do for us. Already now we have strong partnerships with companies like Intergraph, CapGemini, Cyclomedia and various others. The cooperation with the private sector should develop to a higher volume. Traditional patterns should be discussed: we still do the cadastral surveying by our own land surveyors, while many other countries involve the private sector substantially, even up to the level of licensing to carry out a public task.

7. CONCLUSIONS

The financial crisis caused financial problems for the Dutch Kadaster. Negative business results during 2007 and 2008 caused a substantial negative equity and a potential lack of liquidity. As this continued in 2009, and recognising the fee-based funding mechanism, some increases of fees were implemented in 2008 and early 2009, but a most substantial proposal of +25% per 1 August 2009 met serious criticism in the Parliament. The minister, politically responsible for Kadaster, was called to the Parliament quite a few times to be accused of raising fees while the market was in decline. However, pointing out the important task of Kadaster for developments in society and explaining that the funding mechanism was endorsed in 1994 when the Kadaster was established as an independent public body (a legal body ‘sui generis’), she could convince the Parliament to not obstruct the proposal. The minister pointed to the new Long Term Policy Plan 2010-2014, and stipulated that the ambitious plans really must go on seen the benefit for society. Since August the revenues increase again, and for the first time in years the financial result over a month (November 2009) was positive, so that building up the required equity (58 million €) has at least a beginning. Now that the increase of the fees and the Long Term Policy Plan 2010-2014 are both endorsed by the minister, the new strategy 2010-2014 of ‘better working with partners’ can become reality. As the Executive Boards says: ‘we cannot act alone any more and we do not want to act alone any more’.

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Biographical notes
Godfried Barnasconi is member of the Executive Board of the Dutch Cadastre, Land Registry and Mapping Agency (the 'Kadaster')
Paul van der Molen is director of Kadaster International (the international department of Kadaster), and holds a chair in land administration and cadastre at the Faculty for Geo-information Science and Earth Observation (ITC) of the Twente University in Enschede (NL)

CONTACTS
Godfried Barnasconi, member Executive Board
Paul van der Molen, director Kadaster International
Kadaster International and ITC
PO Box 9046
NL-7300 GH APELDOORN (the Netherlands)
E-mail:
godfried.barnasconi@kadaster.nl
paul.vandermolen@kadaster.nl