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Measuring the evolution of online handling of building permits in Europe

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Abstract:
Electronic customer related services of governments have expanded enormously. In many regulatory domains the use of ICT services has become common property. This applies also to the field of building regulations. Main theme of this paper is the possibility to apply online for a building permit. The developments in 18 European countries are being analyzed, with a focus on the Netherlands. The article addresses Dutch and European policies towards online public services in general and towards the electronic handling of building /permit applications in particular. We trace the main trends of *e*Europe policy with regard to the online availability of public services and analyze the progress European countries have made with the availability of online application facilities for building permission. The paper goes into the way progress is being measured and monitored in Europe. Although progress has certainly been made, we cast doubts on the accuracy of the results of the measurements.

Keywords:
Building Control, e government, building permit procedures, Europe

1 Introduction

There are many definitions of the concept of e-government. In this paper the official EU definition is used: "the use of information and communication technologies in public administrations – combined with organisational change and new skills – to improve public services and democratic processes and to strengthen support to public policies" (Empirica, 2006). During the last decade information technology has been the eye catching new ingredient in the relation between citizens and their governments. For several years, European governments have been seeking to provide full online access to government services. The European Union has developed community policy to further develop e-government. The exact reasons behind the policies differ slightly from country to country. In general the key reasons behind e-government have been the wish to increase the efficiency of government operations, to strengthen democracy, to enhance transparency, and to provide better and more versatile services to citizens and businesses (e.g. Flak, 2005).

The overall policy of countries and the European Union is to bring their services on line. This paper focuses on the service 'the application of a building permit'. Why are European countries bringing their building permit procedure on line? What progress is being made in this field and how is this progress being measured? We initially started to research the online applications of building permits in 2003. This paper considers the 15 European countries that where EU-member at that time; Norway, Iceland and Switzerland are also included. The research results are based on information derived from our previous and ongoing European research projects on building regulatory systems,(e.g. Meijer, F. & Visscher, H. 1998 and 2006; Meijer, F., Visscher H. & Sheridan, L., 2002; Sheridan, L., Visscher H. & Meijer, F. 2003).

This paper analyses the state of the art in Europe with regard to online facilities for applying for a building permit. It addresses in Section 2 Dutch and European policies towards online services in general and towards building permits in particular. In section 3 the question is answered how the evolution towards the online handling of building permit applications is being measured. Section 4 compares the availability of online application facilities for building permits in Europe, tracing developments and offering comments in the process. Section 5 places these evolution and measurements in their perspective by looking closer at the situation in specific countries. The paper ends with discussion and conclusions in section 6.

2 Public services online: e-government

Developments with regard to e-government policies are illustrated in this section by the policies of European Union and the Netherlands.

2.1 European Union

Initial key documents were the *e*Europe 2002 Action Plan, which was further strengthened by the *e*Europe 2005 Action Plan (Commission of the European Communities, 2002a and b). The overall objective of *e*Europe was to bring Europe online as soon as possible. According to the European Commission e-government could lead to improvements in customer satisfaction, improvements in the service level (e.g. a seamless and customized service, more flexibility of access in terms of time and channel options, and greater transparency both for customers and governments), greater efficiency, improved quality and supply of information and reductions in costs and process times. It may also reduce obstacles to the internal market and enhance mobility across Europe (European Commission 2003). By 2005, Europe should have modern online public services and a dynamic e-business environment. The Action Plan comprised several (interlinked) tools for attaining the targets: legislation, good practices and demonstration projects. Policy measures should be monitored and steered by *e*Europe benchmarking. A list of twenty basic public services was drawn up for the fifteen 'original' member states plus Norway, Iceland and Switzerland. The indicators covered different domains. The European Commission issued in 2006 the new i2010 e-Government Action Plan. One of the key elements is e-government: by bringing the governmental services online the gap should be closed between the administration and the citizens and businesses.

2.2 The Netherlands

For several years now the ICT policy of the Dutch government has been geared to promoting and incorporating information and communication technology in public services, the idea being to improve accessibility and speed. This, in turn, would cut down the paperwork and the administrative costs. Since the mid-1990s a lot of experience has been gained in ICT applications thanks to numerous pilot projects in many municipalities. The aim of the Electronic Government Action Plan (Boxtel van, 1999) was to target the deployment of ICT in such a way that it should give a momentous boost to the quality and service (customer focus), efficiency (cost savings) and effectiveness (reaching the target group) of public services. Three explicit themes were named: good electronic accessibility, improved public services, and better management of internal government operations. The introduction of digital services should 'fill up' the main pitfalls of public services: too supply-driven, too restricted opening times and too long processing times. The government identified many areas where ICT could be used to improve public services, not least permits and subsidies, and information (Boxtel van, 1999). With ICT it would no longer matter where or when people choose to 'do businesses'. The Action Plan stated that the (one- and two-way) services offered by the government should be so interesting that they prod people into action at home or via public terminals. The Action Plan proposed that at least 25% of public services be administered electronically by the end of 2002. This target was later raised to 35% for 2003, 55% for 2006 (Remkes, 2003) and 65% for 2007 (Graaf de, 2003). While higher targets were being consistently set over the years, extra objectives were being formulated at the same time. For example, an extra objective in the 'Contract for the Future' policy paper (Boxtel van, 2000) was that all Dutch municipalities should have a website by the end of 2002. In 2003 the Alternative Government Action Plan (Graaf de, 2003) re-affirmed the existing policy and introduced the additional objective of a 25% reduction in administrative costs for private citizens and businesses by 2006, compared with levels in 2002. The nationwide ICT agenda (Brinkhorst, De Graaf & Van der Laan), which appeared in 2004, clearly pursues targets and objectives on a European as well as a national scale: twenty specific public services should be fully interactive by 2005. More recent policy documents do not set 'firm' targets anymore. The ICT agenda 2008-2011 (Heemskerk, 2008) gives an oversight of all governmental ICT-activities and states that the Netherlands is one of the ICT frontrunners. The aim is to further expand this position by a better use of the available facilities.

3 Measuring progress of e-government:

Although the policy goals are set on a national level, the effects can be best measured on a local level. In most countries municipalities offer the most direct services to businesses and citizens.

To measure how well governments are progressing up the e-government ladder usually a stage model framework is used. In the first stage there is a simple web presence where information can be obtained. In the final stage full online case handling is possible. In most cases e-government is assessed through an index or benchmark that results in a certain score. With these indexes the scores for a services can be compared with another

service, progress can be measured, various services in different countries can be compared, etc. A number of models has been developed and many studies have been carried out using this kind of framework to measure the progress in e-government (e.g. Flak et al, 2005; Baum & Dimaio, 2000: Ronaghan, 2002; Andersen & Henriksen, 2006; Layne & Lee, 2001; Reddick, 2004).

3.1 European Union

To benchmark the progress within the EU, the 20 public services mentioned in section 2.2 are being measured from 2001 on. Of these services 12 are directed at citizens (e.g. income taxes and car registration) and the other 8 are specific directed at businesses (e.g. VAT and public procurement). The survey initially covered the then 15 EU members plus Norway and Iceland. Switzerland joined the survey for the 2nd measurement and the new member states were taken into account from the 5th measurement in 2005 on. A five-stage framework – very similar to the Dutch system - has been defined to measure and compare the results (CGE&Y, 2003):

0: No – relevant – publicly accessible website (score: 0-24%).
1: The information for starting a procedure is available on-line (score 25-49%).
2: One-way interaction: paper forms can be downloaded (score 50-74%).
3: Two-way interaction: electronic intake is possible (score: 75%-99%).
4: The website enables full electronic case handling; no other formal procedure is necessary (score: 100%).

The online availability (or 'sophistication') is determined by the extent to which a service can be provided electronically. The policy indicator for measuring progress that was originally 'percentage available online' (*e*Europe 2002) has since been changed by the EU to the 'number fully available on-line' from the 2nd measurement on (*e*Europe 2005). In the case of the *e*Europe 2005 indicator, 'not fully' and 'fully' available online were added to this framework. In the seventh measurement the existing framework again was extended to include a fifth level of sophistication built around pro-activity and personalization. Thus in 2007 besides the indicators 'fully available online" an online sophistication indicator was measured (Capgemini, 2005, 2006, 2007).

The benchmarking scores show that the overall average of sophistication of the twenty public services has evolved from 45% in 2001 (17 countries) to 76% in 2007 (31 countries). Or in other words a growth from a 'one way interaction' level to a level that is between 'two way interaction' and 'fully transactional'. The overall score of 76% is the average of all the surveyed countries. Austria is the leader of the ranking (with a score of almost 100%), with Slovenia and Malta on the second place with an equal score of 96%. Most of the 'older' Member states score a little above average, while a majority of the 'new' Member states have a score that is below average.

On the basis of the 'fully available online' indicator, the 2002 measurement resulted in an average score of 36% for the twenty public services. Since then, the 'fully available online' development of public services in the fifteen Member states has improved to a score of 68% in 2007. For the current 27 Member states the 'fully available on line' score is 59%. The country ranking is strongly correlated with the ranking of the sophistication scores. The range of scores however is bigger, which is most likely an illustration of the fact that it is more complex to achieve the full online status than to

reach a high sophistication score (Capgemini, 2007). A higher score on the sophistication scale can be accomplished by taking gradual steps. A service is considered to be fully available online if it reaches sophistication above stage 3.
There is a considerable gap in the performances for businesses and citizens. Almost three quarters of services for businesses are fully available online against half for citizen services (Capgemini, 2007). Although progress has been made the goal that all twenty services should be fully available online in 2005 was not reached.

3.2 The Netherlands

In the Netherlands progress is yearly being measured (from 2000 on) in the "government.nl.monitor". A continuous and a yearly monitor are available. The continuous monitor gives monthly a ranking of the scores. The yearly monitor is publishes as a book volume. Every year services may be skipped and new ones may be introduced. In the 2007 monitor 26 municipal services where included (22 for citizens and 12 for enterprises. In total some 100 services are part of the monitor. A 5 stage model has been established to measure the service:
0: no information is available.
1: information is available on the website.
2: forms can be downloaded.
3: forms can be filled in and uploaded to the government agency.
4: full case handling is possible.

For every service a maximum reachable stage level is established.
The monitoring results show progressive results. In mid-1996 only 5% of all municipalities (30 in absolute terms) had a website; in 1999 this figure had risen to 30%, and at the start of 2003 almost all municipalities were accessible online (Remkes, 2003). The government's aim to manage 25% of public services electronically by the end of 2002 had already been achieved by the end of 2001. In 2003 almost one third of all public services were accessible online to private citizens and businesses alike (Remkes 2003). The most recent monitoring results show that in 2007 67% of all governmental services are available on websites and can be handled on line (http://advies.overheid.nl/monitor/). So the target that was set in 2003 on 65% has been reached.

4 Progress of online building permit applications in Europe

For the service 'application for a building permission' a five-stage framework has been defined to measure and compare the results (CGE&Y, 2003):
1. No – relevant – publicly accessible website (score: 0-24%).
2. The information for starting a procedure is available on-line (score 25-49%).
3. One-way interaction: paper forms can be downloaded (score 50-74%).
4. Two-way interaction: electronic intake is possible (score: 75%-99%).
5. The website enables full electronic case handling; no other formal procedure is necessary (score: 100%).

Table 1 shows the scores for building permit procedures in the period 2001-2007. Please note that the percentages have been copied from a bar chart and that we only have taken

the countries into account that were member of the EU in 2001, plus Switzerland, Norway and Iceland.

Table 1 Scores for the public service 'building permit procedures'

(Source: CGE&Y, 2003, 2004, Capgemini, 2005, 2006, 2007)

Country	2007	2006	2004	2003	2002	2001
Austria	100	75	52	50	35	18
United Kingdom	100	100	52	23	24	12
France	75	75	75	75	53	50
Norway	75	100	75	50	57	50
Denmark	67	52	52	51	50	39
Italy	52	52	17	5	5	2
Netherlands	52	50	58	50	30	13
Belgium	50	52	52	37	38	32
Portugal	50	25	25	26	27	26
Germany	50	52	31	12	8	7
Luxembourg	50	50	18	11	10	7
Ireland	45	58	48	100	100	88
Switzerland	44	40	52	49	43	-
Sweden	48	65	45	45	43	32
Finland	43	50	50	28	36	20
Iceland	38	35	30	8	11	-
Spain	33	23	15	6	5	1
Greece	18	50	50	28	27	51

The countries in Table 1 are arranged in order of 'sophistication' in 2007. In general one should expect for every country a gradual development through the years in the direction of more sophistication. This is indeed the case for Austria, the United Kingdom (with both a 100% score) and Denmark, Portugal, Iceland and Spain. In France, Belgium, Germany and Luxembourg progress seems to stagnate in recent years. Which could be explained by the fact that progress is getting more difficult in the latter stages of sophistication. The scores for the other eight countries fluctuate yearly and indicate a decline of the online sophistication. Norway and Ireland are especially remarkable in this respect because they had a score of 100% in the past, but somehow managed to loose the lead. These fluctuations in the scores raise questions. What does a 100% score mean; How can the fluctuations be explained; does the score reflects the actual use by applicants of the online possibilities?

5 The meaning and accuracy of the sophistication scores

In order to get answers to these questions and to get a better grip on the meaning of the scores we take a closer look at a small number of countries:

- Netherlands: how realistic is the benchmark score of 52%?
- Austria and the United Kingdom: idem ditto and what does a 100% score mean in reality?
- Ireland: what is the explanation for the fluctuations in the scores?

5.1 The Netherlands

Building Regulations (technical requirements and building permit procedures) in the Netherlands are nationwide uniform. Municipalities are responsible for building control and the issuing of building permits. Since some years it is possible to access building control departments online. The websites provide or refer to information on all aspects of the application procedure. Through a question-and-answer procedure it can be determined which permit is required. Application and other forms can be downloaded and printed. It is also possible in most municipalities to track the progress of the application and to make an electronic appointment with building control inspectors. Full electronic case handling is still not possible, but the actual implementation is merely a question of time. How this actual situation relates to the Dutch score in the European benchmark studies is questionable (see table 1). The lion's share of the Dutch municipalities did (in 2007) operate already on level 3. A score of 75% instead of 52% seems to be a better reflection of the actual situation at that time.
The Dutch government is going to introduce in 2010 the 'environmental permit'. This permit combines and replaces some 25 regulations and permits concerning the physical surrounding that are currently in force (e.g. building permit, demolition permit, and environmental permit). In stead of a range of permits that sometimes are necessary, one permit suffices in the near future. In 2010 one 'digital office window' will be introduced where the environmental is permit can be handled online. Municipalities can make use of the central server organization.

5.2 Austria

Austria is a federal republic which consists of nine provinces. Until 2008 there where no uniform Building Regulations in Austria. The past decennia regularly attempts have been undertaken to establish one set of model Building Regulations for the whole country. In 2008 the efforts finally paid off. A news harmonized set of technical requirements was introduced. Since then four out of nine Austrian provinces have already taken over the new building regulations (Mikulits, 2008). Harmonization of the building control procedures however where were excluded. Online building permit application is in essence a procedural service. This means that there are still 9 different procedures in the nine provinces. Our current research project shows (based on the situation in Vienna and Styria) that information and paper forms can be downloaded. A recent visit to the websites of various Austrian cities confirms this. So the application of building permission in Austria at this moment operates on level 3 of the European measurement framework. The 100% score in the 2007-benchmark seems far too high.

5.3 United Kingdom

There is not one set of building regulations that covers the whole UK. England & Wales, Scotland, and Northern Ireland each have their own – albeit similar – systems of rules and regulations. Every constituent country has established its own procedure. So the first question that should be answered is what does the EU benchmark figure for 'the' UK relates too?

5.3.1 England and Wales (and Northern Ireland)

In England & Wales planning and building regulations are nationwide uniform. Applicants can choose between Local Authority Building Control or Approved

Inspectors to check their building plans. Within Northern Ireland building control is entirely administered and enforced by local authority district councils. Since the early 2000's the effort was aimed to further digitize the planning permission and building permit process. Again, government policy is the driving force: all local authorities were expected to *e*-enable their services by 2005. The planning portal was ready first. The submit-a-plan-website, where applications for a building permit can be submitted, was launched in 2003. The English system seems very similar to the proposed digital server concept in the Netherlands. According the summit-a-plan website all local authorities in England, Wales and Northern Ireland are now listed for making electronic building control applications. A 100% score for England and Wales (and Northern Ireland) seems to be in order. That does not mean that all building permits in England and Wales are being processed electronically. Our current research project shows (information from the end of 2008) that at that time roughly half of the councils had signed up to take electronic applications. It was estimated that only a relatively small fraction of all building permits was issued online.

5.3.2 Scotland

In May 2005 a new building regulatory system has come into force in Scotland. In the new system 'verifiers' (= local authorities) are responsible to carry out building control. In the future it could be possible that private parties could also play a role as verifier Suitably qualified design professionals can become approved 'certifiers' of structural design and approved 'certifiers' of construction. The verifier is not allowed to check work done by a certifier. Full electronic handling of permits is possible in Scotland. However our current research shows that the percentage of construction plans that are handled electronically is low.

All in all it is fair to say that the 100% score for the UK is justified. Electronic handling is in principle possible. However the actual number of permits that is actually process completely online is far from 100%.

5.4 Ireland

Although Ireland has nationwide building regulations based on a Building Control Act, the Irish system differs slightly from other European building control. Ireland applies a system of planning permission, commencement notices and fire safety certificates. Goals have been defined for online access to planning application and development control processes, including commencement notices. In 2004 online inquiry facilities were available for planning permission in 60% of the major local authorities (Hanafin, 2004). At this moment it is possible to apply for certain planning applications online in the major local authorities. Similar developments are taking place in commencement notices and fire safety certificates. It is possible to download forms and information on a large scale. In some municipalities it is also possible to track the (planning) procedure. A full-scale intake, case handling, decision and delivery of a standard procedure to obtain a fire safety certificate via the web is not possible. The 2007 score seems to reflect the actual situation. It is however unclear where the 100% scores for 2002 and 2003 are based upon (Table 1).

6 Discussion and conclusions

There are many potential advantages of the online handling of building permits. Positive cost and time effects and a further streamlining of procedures can be expected. The system eliminates sending layers of papers and it is available around the clock. The heaps of paper in municipalities' archives can largely be replaced by one electronic archive. Progress of applications can be tracked online. Building inspectors will be able to take electronic plans and documents out on-site. Drawings can be viewed on screen and redline comments can be made. A nationwide uniform building control system (as is the case in the UK and Norway and the Netherlands) is an important additional factor to facilitate the introduction of online building permit procedure. The same rules apply everywhere (e.g. technical requirements) and the building control authorities work along the same procedures. This enables the development of a central web server where local building control offices can register.

A reliable measurement tool is indispensable to compare progress in Europe with regard to the online availability of building permits. It is however essential to be crystal-clear what exactly is measured and how it is measured. There are differences in the building control systems of European countries. In some countries the planning permit is an essential instrument and a 'building permit' is not being issued. In order to understand the possibilities and impossibilities of electronic handling of building permits one has to have an elementary notice of the building regulatory system in a country. The first step is to define exactly what service is being measured. Furthermore it should be defined precisely what a score for a country exactly means. As building permits are often granted at municipal level, the question arises how the scores should be interpreted. What score does a country get where half of the municipalities operate on level 3 en the other half on level 4? Besides that percentages suggest accuracy and exactness, but do they reflect the actual situation? A closer look at four countries has casts some doubts on the actual value of the European benchmark scores. Furthermore it has put a 100% score in its right perspective. A 'staged benchmark framework' is certainly useful to show online progress on a general certain level. Important questions remain unanswered.

The main problem is that this European measurement tool does not give information about the use by the target groups and can not be related to the other main goals of e-government. As in the Netherlands from the start of the European benchmark on hardly any information was gathered about functionality (is anyone using the services?) and content of the websites (is the quality adequate?). To asses progress in a 'sensible' way important questions should be addressed as are the services actually adopted by the people/businesses they are aimed at and are the goals (in terms of less time costs, etc.) actually realized. As stated the European benchmark was until recent years aimed at surveying if there is a website available for the relevant service and if yes what possibilities are offered for its use. In the 2007 EU measurement a pilot was executed to measure user centricity. Besides that information has been gathered on a yearly base (since 2005) about e-government usage by individuals and businesses. These data showed that around 30% of all individuals in the 27 Member States have used the internet in 2007 for interaction with public authorities. For businesses the comparable figure is 65% (Eurostat-a and Eurostat-b, 2008). Interaction is defined as "having used

the internet for obtaining information, or downloading forms, or filling in web-forms, or full electronic case handling". It stays unknown what percentage of a service is actually handled via the internet and if the intended goals are realized.

Although all European countries work on the introduction of online permit handling, progress is slow. Drawback of the current monitoring system is that information is missing if the intended goals are being reached. Important subjects for future research will be the fine-tuning of the assessment method by which progress can be compared and a nearer analysis of the actual contents and practical effects of the online building permit services.

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