

Improving citizen participation through the use of electronic voting



A sociological report regarding the Citizen Consultation on the “Huerta de la Salud” Park in the Hortaleza district. Madrid





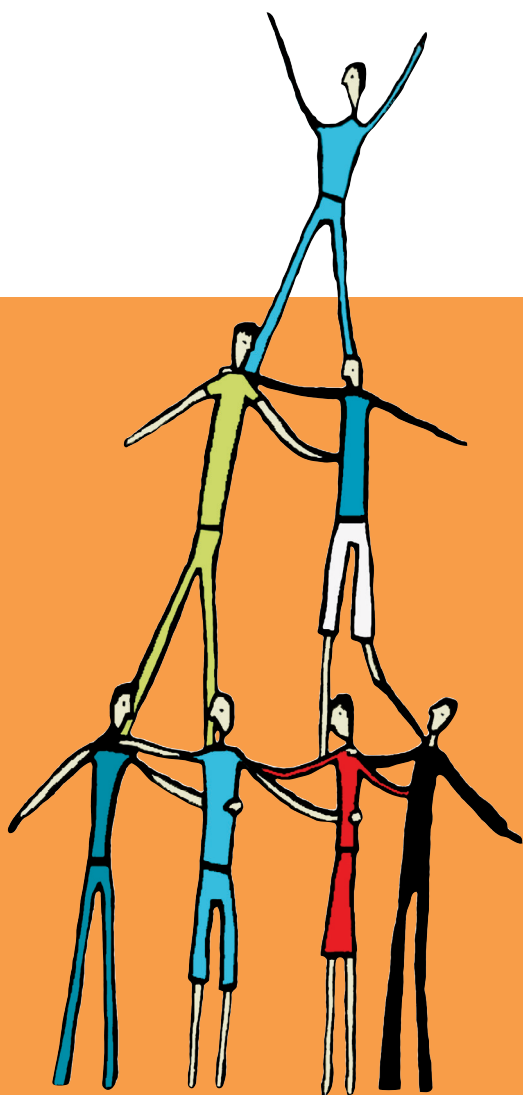
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madrid

June, 2005



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Improving citizen participation through the use of electronic voting.
A sociological report regarding the Citizen Consultation on the "Huerta de la Salud" Park in the Hortaleza district. Madrid

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0. Presentation



The Governing team at the Madrid City Council are developing a new citizen participation programme aimed at facilitating channels which will allow citizens and organizations to have a more active influence on the city's management.

One of the channels put in place as part of this model for citizen participation is the application of New Information and Communication Technologies in the development of participative processes that we believe will not only facilitate a higher level of information from citizens but also a greater involvement in making decisions related to issues in the districts of greatest interest to them.

The *Huerta de la Salud* citizen consultation, developed in November 2004 in the Hortaleza district of Madrid and whose report is published here, is based on the experience gained a few months earlier during June 2004 in the Central District known as *Madrid Participa*. One of the differences of the Hortaleza poll which bears mentioning, is the combined use of classic voting procedures with new technologies, which facilitated a greater participation on behalf of those segments of the population not as yet familiar with these technologies.

I would also like to point out that in the *Huerta de la Salud* poll the participation process that culminated with the placing of votes on behalf of residents began with the creation of a driving team made up of the Areas for Citizen Participation and Innovation and Technology, the Hortaleza Municipal Board and citizen organizations. This driving team was responsible for everything from the organization of the reference material to the definition of the scope, identification of the population to which the poll would be directed and the way in which this would be undertaken, the voting places, the composition of the electoral table, the communication plan for the poll etc. As such, the *Huerta de la Salud* poll represents an initiative of particular importance to the Madrid City Council in that it transforms the culture and work methods of the municipal administration.

This encouraging experience helps to strengthen society by providing citizens with new reasons to participate. The *Huerta de la Salud* poll constitutes a very important contribution to this objective, one particularly difficult to achieve in larger cities, which involves being aware and participating. It is an initiative in which neighbours, citizen organizations and local government authorities have taken part.

Miguel Ángel Villanueva González
Managing Director for the Government area of Economy and Citizen Participation



1. Introduction and acknowledgements¹

There are often claims for more citizen participation channels, particularly in an effort to improve public policy development processes and influence decision making. The availability of new information and communication technologies (NICT) opens up new opportunities in the area of improving democratic systems. Although these technologies have been integrated for some time in the vast majority of other areas of human activity (culture, health, education, social relations...) they have yet to be applied to political decision making processes.

Although it is obvious that the application of these technologies in these areas should be undertaken in a restrained and slow fashion, consolidating each step, it is also evident that it is necessary to begin the process. As we already indicated in another report “*too many technological innovations can lead to serious difficulties during their implementation and generalized use in society. This situation tends to be the result of an attempt to transform society without taking into consideration the internal mechanisms of modernization and evolution.*” (Vid. BARRAT/RENIU, 2004a).

It has not been the case on this occasion where the Madrid City Council has taken another step in the direction of further developing the democratic system through the rational use of NICT. As such the objective of this report is to analyse the citizen consultation undertaken by the Madrid City Council in the Hortaleza district as part of the citizen participation programme *MadridParticipa*.

On the other hand, the authors would like to express their gratitude for the support provided by various people and institutions in the development of the report. Firstly, we should mention the Central Office for Citizen Participation and New Technologies in the Area of Economic Government and Citizen Participation of the Madrid City Council, the Hortaleza Municipal Board, the citizen organizations that participated in the event and the companies SCYTL and Accenture that offered all the necessary support to gather the sociological data needed to elaborate this report.

¹ This report has been supported by the investigative project: “*Electronic voting in Spain: challenges, opportunities and threats for a democratic renewal process*”, financed by the Education and Science Ministry, Ref. SEJ2004-03844JURI.

2. General aspects of the Consultation



2.1. Previous initiatives: MadridParticipa

At the end of 2003, the Madrid City Council began to define an ambitious project related to citizen participation and linked to the approval of the Organic Regulation of Citizen Participation in the city of Madrid. One of the main elements key to the success of the project was the use of NICT in order to facilitate making decisions in conjunction with citizens in Villa and Corte.

The first practical realization of the Project came about with the Citizen Poll MadridParticipa in June 2004, which had been the most important initiative developed to date in the area of electronic public surveys in Spain until the realization of the pilot test of electronic voting in days prior to the Referendum regarding the treaty that would lead to the establishment of the European Constitution.

The results of this first Citizen Consultation made apparent how important these sorts of initiatives are to citizens. Citizens that took part in the poll valued the decision taken by the Madrid consistory very positively, with an average score of 4,7 on a scale of 0 to 5. If this is combined with the general predisposition towards these types of surveys where 3 out of 4 of those surveyed favoured its use, the fact is that the results do support the expansion of such a citizen participation programme.

As such, the participative process was carried out between Thursday the 18th and Sunday the 21st of November, supported by three onsite voting centres where citizens could place their vote in the traditional format (paper) or use computers connected to internet in order to access the remote electronic voting system.

2.2. The Huerta de la Salud Park

On this occasion the objective of the Citizen Consultation proved to be interesting for two reasons: firstly it helped establish the capacity of the different Territorial Councils to propose the realization of participative processes for the discussion of questions related to the quality of life of its citizens. On the other hand it is pre-



cisely this observation that made the Citizen Consultation carried out in the Hortaleza district particularly interesting. In it the possibility of controlling the access to a cultural and social infrastructure area that had suffered repeated acts of vandalism was proposed.

This area, the Huerta de la Salud Park is the result of the restoration of an old recreational estate in the centre of Hortaleza, where a series of cultural and social infrastructures can currently be found which are of particular interest to the district in addition to it being a green area. The services provided in the park include the Hortaleza Municipal Library, the exhibition hall, the elderly centre, the Cultural centre, the Public Internet Access centre (PIAC) and the Technological Expansion Centre (TEC)

Given this situation and after repeated requests to close the park in order to avoid the proliferation of acts of vandalism and uncivilised behaviour, the Hortaleza Municipal Board decided to undertake a public poll with the objective of establishing a time in which to close the park. Nonetheless, one of the main characteristics of this process is the fact that the decision met with the support of different representatives of associations in the Hortaleza district. As such, the Huerta de la Salud Elderly Centre and different Neighbour associations in Hortaleza participated in the project from its design to realization and control of results².

2.3. The voting population

In much the same way as occurred with the Citizen Consultation carried out in the central district, on this occasion all residents above the age of 16 and registered in the area directly affected by the decision were given the opportunity to participate. As we outlined in the report regarding this survey, this decision deserves to be valued positively when the inclusion of residents between the ages of 16 and 18 improves democratic participation.

The limits of the areas which contained the citizens enrolled and invited to take part in the poll were established between the Mar Caspio, Barranquilla, Gregorio Sánchez Herráez Capitán Cortés, streets, the M-40 highway, Avda. de la Estación de Hortaleza, Luis Buitrago and Avda. de San Luis making a total of 21.373 people who were asked to participate in the poll.

² The Neighbours associations involved included: A.VV. La Unión de Hortaleza, A.VV. UVA de Hortaleza, Asociación Juvenil Radio Enlace, A.VV. Portugalete, A.VV. Antonio Machado, A.VV. Cárcavas San Antonio, A.VV. Manoteras, A.VV. Virgen del Cortijo, A.VV. El Bosque and A.VV. Villa Rosa.



2.4. The question

The only question which citizens were asked was as follows:

Do you feel that it would be convenient to close the Huerta de la Salud Park to the public during the following hours?

CLOSING HOURS

- **In winter:** from midnight to 7 a.m.
- **In summer:** from 1:30 a.m. to 7:00 a.m.

MARK YOUR CHOICE

YES



NO



2.5. The voting process

The survey was organized by way of a double procedure, on the one hand a traditional voting method using a physical ballot box and on the other via an electronic procedure thus allowing us to evaluate this last method. It was necessary to make both options available in the three voting centres which were established, and as such voting needed to take place in a *controlled environment* both in terms of confirming the identity of the voter and placing the vote. These voting centres were the Huerta de la Salud Cultural centre, the social area of the A.V. La Unión de Hortaleza and the CEPA Dulce Chacón, each with different opening hours. The cultural centre in some way centralized voting with opening hours 10 a.m. to 2p.m. Thursday to Sunday and 5 p.m. to 9 p.m. Thursday and Friday. The A.V. and CEPA were only open to the public Thursday and Friday from 5 p.m. to 9 p.m.

In this regard we should point out that the existence of different opening hours and opening days could have lead to some confusion among citizens which is why it is appropriate to try to establish voting centres where voting can take place at the same time and on the same days.

a) Credentials

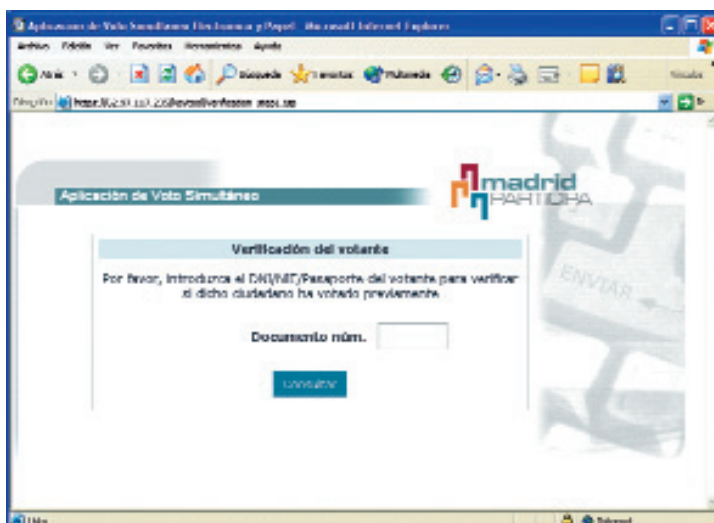
The process of verifying the voter's credentials was undertaken with a double method depending on the chosen voting channel. In the event of the citizen opting for the electronic vote they only needed to indicate their national identity card number (DNI) or Foreigner identification card number (NIE) or passport on the one hand and their date of birth on the other in the identification window which appeared on their computers. With this information, the remote voting system then verified that the person could indeed vote and if they had already voted based on the information of voters who had already voted and which was provided by the City Council.

Screenshot 1. Screen used to identify the citizen. Electronic voting



If on the other hand the citizen wished to vote in the traditional fashion (using a ballot paper and ballot box) then there was a need to verify if they were on the electoral roll and if they had already voted by introducing their DNI, NIE or passport in the computer with the Simultaneous Voting Application (SVA). After authorizing the vote the person responsible for the SVA indicated that person as a voter on the electoral roll which then invalidated any subsequent vote be it through electronic voting in another centre (screenshot 2) or paper.

Screenshot 2. Simultaneous voting application. Verification of the voter

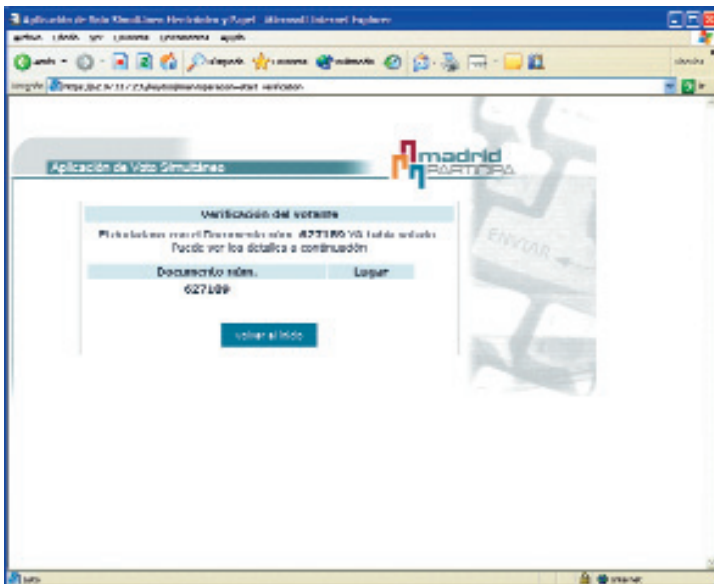




The introduction of an SVA allows us to guarantee that votes will not be duplicated provided that the management of the database containing the voters can be shared by all voting centres. This solution appears to be an appropriate control mechanism for future participative processes where both voting systems can be used.

As such, in the event of a vote being duplicated, the system would provide a message identifying the citizen, the voter status and the channel used to place the vote (screenshot 3). One possibility of improving the system would be to include in such a message the school or centre where the vote was placed in the event of the voter being able to go to the different voting centres, as is the case here.

Screenshot 3. Simultaneous voting application. A citizen who has already voted

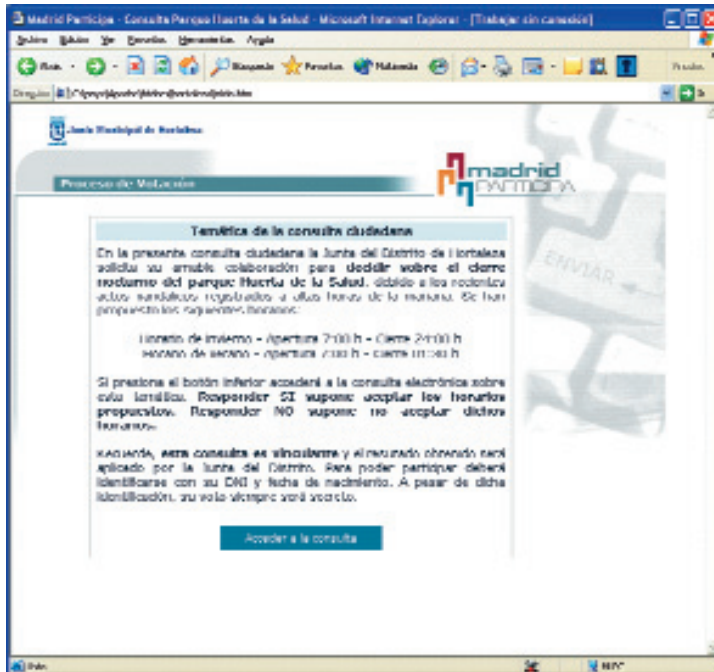


b) Voting

Once the voter has been correctly identified together with their eligibility to vote, the voting process is initiated with a screen that indicates the topic of the survey and a brief guide regarding the meaning of each option (screenshot 4). We feel that these messages should be absolutely coherent with the previous information provided to citizens.

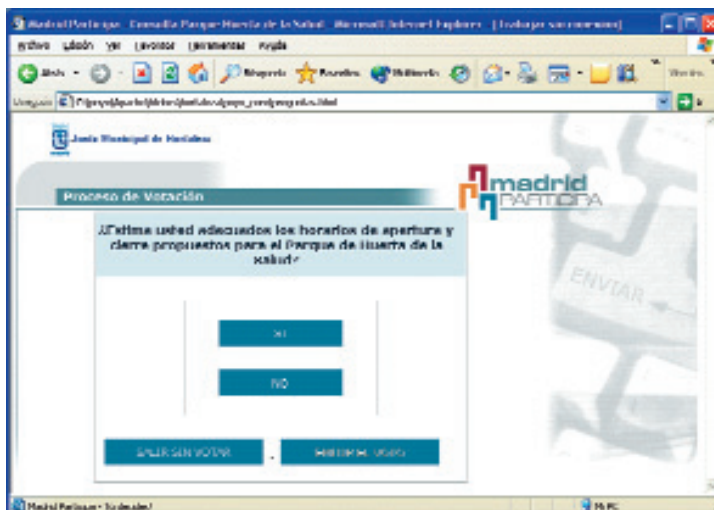
We understand that one solution could have been to reproduce the content of the traditional ballot votes without including a clarification of the meaning of the vote. On the other hand we feel we should point out the binding nature of this survey, but we also believe that the screen with the initial information should be left out given that voters using the traditional process do not have this additional information when voting.

Screenshot 4. Initial screen in the voting process



The information outlined previously is especially relevant in that the screen which allows the vote to be placed does not include the opening hours people are being asked to give their opinion on, as is the case with traditional voting. As such, only the question appears with the two options, placed one after the other (screenshot 5). In this regard we could also argue that the positioning of the two options on the electronic voting page can induce a certain response.

Screenshot 5. Voting screen





It is therefore our opinion that in order to guarantee the impartiality of the process the options should be placed at the same level as they are in traditional ballot papers. On the other hand an observation already made during the Citizen Consultation in the Central district bears repeating and that is the consideration of the colours with which the options are made to stand out such as the selection of certain voting option. If we take into account that there are certain people that have daltonic visual problems perhaps the selection of the colour red to make a decision stand out may not be perceivable to these citizens. In this regard we believe that the initial confirmation of the option chosen should be improved.

We describe it as initial because the voting system does provide a confirmation message regarding the chosen option that allows the voter to confirm their vote or in the event of having made a mistake take a step back in the voting process and change their vote (screenshot 6).

Screenshot 6. Voting confirmation screen



After confirming the final vote, this is encrypted and sent to the virtual ballot box where it will remain until votes are counted. The voter is then provided with a voting receipt, confirming the reception of the vote and made up of a 16 character alphanumeric code that identifies each vote and a control code (screenshot 7). This identifier of the vote which is in no case associated with the voter allows for individual verification that each vote placed has in fact been included in the final count.

Screenshot 7. Voting receipt



Issuing a voting receipt is one of the most controversial points of the current design of electronic voting processes. In this case the ScytL option allows the person to individually verify their vote, by comparing their identifier with a list of identifiers of the votes processed which is made public after the final count. Although this is an interesting solution it is equally true that it requires an independent technological audit that guarantees the coherence of the list received of votes cast with the votes really processed.

c) Results

After four days of voting the results provide some interesting data, both due to the number of votes cast as well as the results of the survey. With regard to the votes cast, it should be noted that the number was greater than those obtained in similar processes undertaken previously, independently of the voting channel used (Table 1).

Table 1. Participation according to voting channel

	N	%o/census	% o/total
Electronic votes	192	0.90%	35.23%
Paper votes	353	1.65%	64.77%
Total votes emitted	545	2.55%	100%



If we compare this with the first votes obtained in the central district as part of the MadridParticipa programme, then the participation in Hortaleza was nearly four times that obtained in June 2004, when only 0.65% of the census participated. Although in these cases the level of participation is not an especially relevant factor, it does allow us to gather an understanding of the interest that citizens may have in these initiatives. In this regard, the first perception values this index quite positively given the topic of the survey and its binding nature.

However, we should also consider that participation in this survey was favoured by the decision to simultaneously use electronic and traditional voting on paper. Given that the coexistence of the two methods will be the process followed for the implementation and generalized use of electronic voting we believe that the Madrid City Council has made the right decision. In this respect, although the number of traditional votes has been higher than electronic ones – almost double, these have also exceeded the numbers obtained in the Central District.

Table 2. Results according to voting channel

	N	Yes	% per channel	No	% per channel
Electronic votes	192	141	73.43%	51	26.46%
Paper votes	353	249	70.53%	74	29.47%
Total votes emitted	545	420	77.06%	125	22.94%

From the results obtained after participation, voters clearly decided to close the park at night with virtual independence of the voting channel used (Table 2). Three of each of the four neighbours of the Huerta de la Salud Park supported the proposal of the Municipal Board, and as such the timetable proposed is already being applied.

In any case, it will be far more interesting to evaluate these results –especially those that make reference to the selection of one voting channel or another– according to the view of those citizens that took part in the poll.



3. Sociological analysis

In much the same way as that undertaken during the legal and sociological report of the Citizen Consultation in the Central District of Madrid within the MadridParticipa programme, the central aspect of the current study is to analyse the opinions of citizens after having taken part in the participative process. Our interests are therefore centered on three lines of work:

- Awareness of peoples' opinion regarding the initiative of citizen participation on behalf of the Hortaleza Municipal Board,
- awareness of peoples' opinion regarding the technology used in the citizens survey, and
- awareness of peoples' opinion regarding the use of new information and communication technologies in political participation processes.

All of this will, in addition, be evaluated in relation to information obtained in the previous investigation given the similarity of procedures. In this case, the inclusion of the opinion of those citizens that chose to use the electronic voting system is also of special interest. In order to obtain this information a questionnaire was drawn up in order to be used on the voting days, entirely onsite³.

3.1. Quantitative investigative methodology

The methodology used to carry out the quantitative study is based on the application of an onsite survey aimed at citizens who took part in the overall poll. The fieldwork was undertaken on the 18th, 19th, 20th and 21st of November.

³ An outline of the poll can be found in the appendix to this report.



The overall percentage of responses to the survey was 43.66% of the participants (238 questionnaires), a sufficiently significant volume to consider the tendencies reflected as representative of the group of citizens that took part in the poll. Nonetheless, its representativeness within the universe of citizens called to participate is insufficient in order to extrapolate these tendencies.

3.2. Sociological profile

Before proceeding to the analysis of the opinions of those surveyed, it is necessary to establish the sociological profile from two aspects, that is considering their socioeconomic characteristics as well as those characteristics related to the use of new information and communication technology (NTIC).

The composition of those surveyed according to gender shows a slight difference in favour of women, although it is true that is not a notable difference with respect to the other data in the census (Table 3). With regard to the composition according to age groups we can observe a significant difference in the age group of 35 to 44 of those surveyed. This lack of participation among those surveyed is more evident among females.

Table 3. The composition of those surveyed according to gender and age group

	N	%		N	%		N	%
Gender	238	100.0%	Men	107	45.0%	Women	131	55.0%
Age groups	50	21.0%	16-24	25	23.4%	16-24	25	19.2%
	37	15.5%	25-34	14	13.1%	25-34	23	17.5%
	20	8.5%	35-44	11	10.4%	35-44	9	6.8%
	38	15.9%	45-54	16	14.9%	45-54	22	16.8%
	49	20.6%	55-64	19	17.7%	55-64	30	22.9%
	44	18.5%	> 65	22	20.5%	> 65	22	16.8%

Nonetheless, we should note the fact that among the total number of those surveyed, the participation of young citizens is much greater than in the data obtained from the Citizen Consultation carried out in the Central District. It is precisely this age group that is the most interesting in terms of evaluating the future acceptance of electronic voting because these citizens will be natural users of the system due to their age and their familiarity with NICT.

In terms of other elements that characterize those that were surveyed, 53,4% are married while a little over a quarter (27,3%) are single. The labour situation of those surveyed is largely predominated by wage earners or pensioners (male 36,7% and female 26,6% respectively) and 16,5% are either housewives or husbands. However the most interesting information is that which pertains to the income level which should allow us to explain certain behaviour with regard to the use of NICT.

Table 4. The composition of those surveyed according to their level of monthly income

		N	%
Monthly income	< 800 €	50	29.9%
	800-1,200 €	52	31.1%
	1,200-1,600 €	32	19.2%
	> 1,600 €	33	19.8%

As we have been able to confirm in other reports, the segment that distinguishes the different groups is the level of 1,200 € per month. In the case of Hortaleza 61% of those surveyed have an income level below this threshold while the rest is divided evenly among the other two categories (table 4).

As we have outlined previously, this indicator is used due to the degree of sensitivity when measuring the digital gap in its social aspect. From the data obtained in this respect we can maintain a proportionally inverse relation between income level and the access and familiarity with NICT.

Table 5. The digital divide: income level and ownership of a computer in the home

		Con PC	%	Sin PC	%
Monthly income	< 800 €	26	52.0%	24	48.0%
	800-1,200 €	42	80.7%	10	19.3%
	1,200-1,600 €	21	65.6%	11	34.4%
	> 1,600 €	28	84.8%	5	15.2%
Total	–	117	70.0%	50	30.0%

In this regard Table 5 indicates the impact of this economic variable, albeit from rather incomplete information regarding monthly income. We estimate, however, that below 800 € it is very difficult to find a similar number of computers in the homes of those surveyed as those in the rest of the income groups. On the other hand, in those cases where the person surveyed does have a computer in their home 71% of them have a connection to Internet.

Nonetheless, we should point out that the values obtained are significantly higher than the reference information⁴. As we will see later on, this can be explained by a certain pro-technological bias on the part of those surveyed. However in the daily technological environment, the possession of mobile telephones is at the same level as the average in Spain where 83.5% of those surveyed have at least one mobile telephone terminal⁵.

⁴ Information provided by the National Statistics Institute indicates that 43,3% of homes have some sort of computer, a figure which increases to the 51,5% in the case of Madrid (INE, 2004: 334). On the other hand, TNS-Demoscopia estimates this percentage to be 61,5% for the whole province (Demoscopia, 2003: 39).

⁵ It is obvious that these values are not uniform for all age groups, although in those groups that are between the ages of 16 and 44 it is nearly 100% of those surveyed, in those groups that are between 45 and over 65 the percentage is reduced to around 78%.



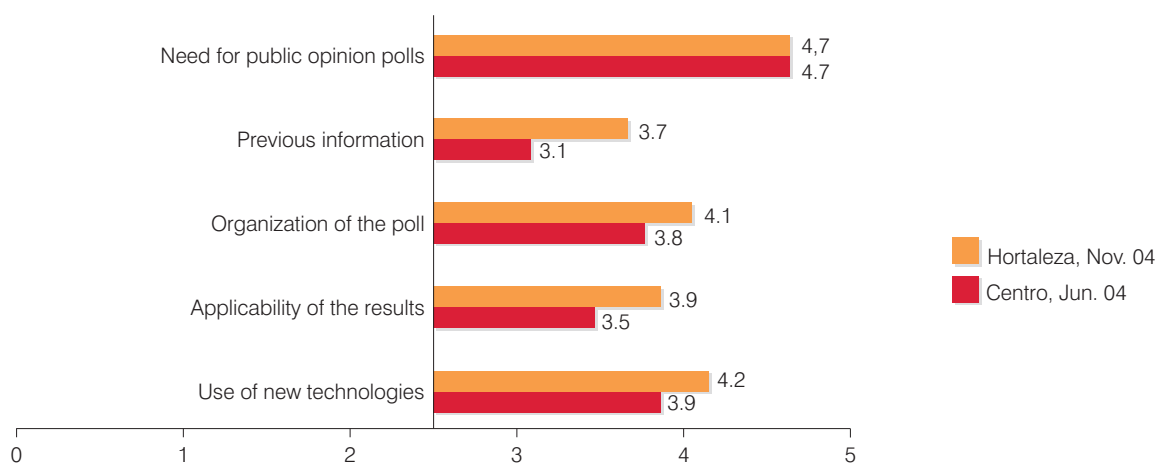
With regard to internet access habits, the majority of those surveyed (66.7%) indicated that they accessed from home and to a lesser degree from their work place (18.7%). Nonetheless in those instances where no computer or internet access was available in the home, those surveyed indicated that they accessed from their place of work (54%) or an Administrative or CAPI Centre (20.8%).

Those surveyed with less than 800 € of monthly income use their computer in much the same way for work-related issues as for sending e-mails, while in those segments with higher incomes the use of e-mail only occurs in 17% of cases.

3.3. Institutional evaluation of the Citizen Consultation

The main interest of this section is the analysis of the evaluation that those surveyed provided with regard to the institutional initiative on the part of the Madrid City Council. With the objective of making the information comparable we chose to use the same methodology that was used to evaluate the institutional initiative of the previous Citizen Consultation in the Central District. As such those surveyed were requested to evaluate different institutional aspects related to the need for this type of Citizen Consultations, the questions and responses offered for consideration or the applicability of the results among others.

Graph 1. Institutional evaluation of the Citizen Consultation initiative



The first glimpse at the information provides a clear and precise insight: the Hortaleza Citizen Poll has improved the scores obtained in other polls undertaken to date. In this regard the data appears to show a sustained process of improvement and learning, rather than a really relevant change with respect to the information given prior to the Poll.

In effect one of the negative points of the poll undertaken in June 2004 was without a doubt the scarce communication of the event among the residents of the Central District. The negative evaluation of this aspect appears to have influenced the strategy developed by the City Council which can particularly be observed in the aspect of initial information given. As can be clearly observed in Graph 1, it is this item that has experienced the greatest increase, from 3,1 points in June to 3,7 in November. A more reduced environment both in terms of space and population have certainly facilitated the task of communicating but the topic of the poll itself should also be taken into consideration.

In this regard, the rest of the elements which were evaluated obtained an excellent score. The organization of the poll, the applicability of the results and the use of NICT obtained higher scores. In the first case, this improvement appears to be a result of better information provided while in the second case – the applicability of results – the improvement seems to have been a result of specifying the objective of the poll. Obviously one of the key elements for the success of a participative process is the capacity to involve citizens. In the case of the Hortaleza Citizen Consultation this participation comes not only from the numerous organizations in the district but in our opinion especially from the clear identification of the quality of life topic for the residents of the district. In addition, we should not forget the binding nature of the decision which in no doubt adds value to the poll in relation to other participative process exclusively orientated towards validating the operation of a certain type of technological solution.

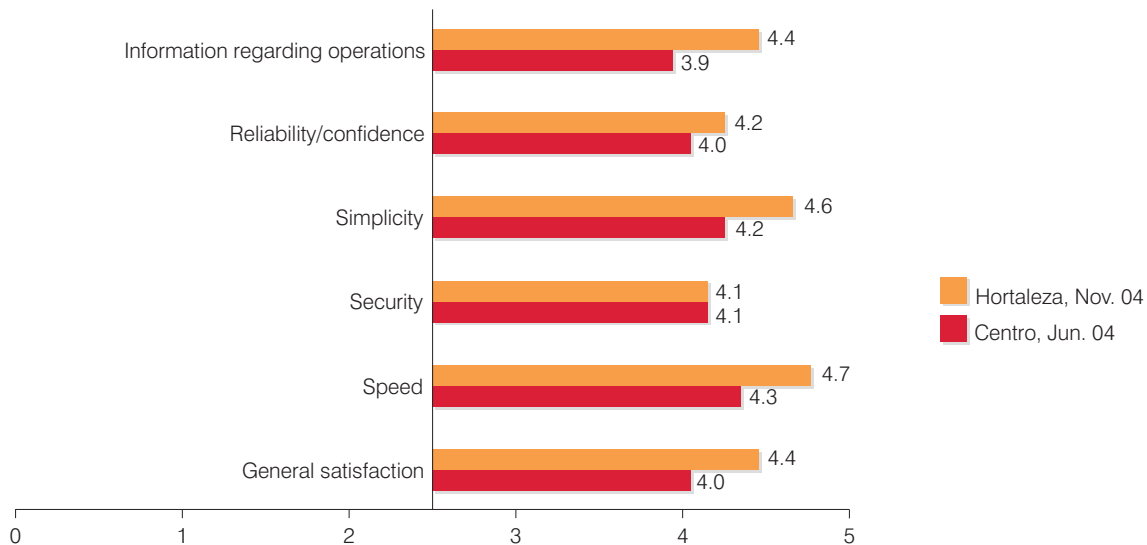
One aspect which should not be disregarded due to its importance for the generalized use of electronic voting systems in the future, is the higher score obtained for the use of NICT. As can be observed if we leave to one side the excellent acceptance of the Citizen Consultation in general terms, it is the most highly valued element with an average of 4,2 points. In our opinion this is due to a decision on behalf of institutional leaders to opt for the coexistence of the two voting systems: the traditional and the electronic. As we have repeatedly pointed out, the key for guaranteeing the success of the introduction of electronic voting systems resides in that this process be gradual and complimentary to traditional voting systems. We should not underestimate the public's desire to be able to choose the way in which they vote, given that although electronic voting has been implemented in controlled environments a significant number of voters prefer the *formality* derived from the use of paper, the ballot boxes made of transparent methacrylate and the interaction with other residents in the polling stations.

3.4. Evaluation of the technology used in the Citizen Consultation

The evaluation of the voting technology used in the Hortaleza Citizen Consultation, who ScytI World Online Security S.A. was responsible for, shows very similar characteristics to the previous institutional evaluation. In general terms there has been a significant improvement due to the introduction of improvements in the voting process. In this regard the use of the Simultaneous Voting Application (SVA) in an effort to avoid the duplication of votes is especially important.



Graph 2. Evaluation of the electronic voting technology used in the Madrid Citizen Consultations



We should recall that the evaluation in Graph 2 only refers to those surveyed who chose to place their votes electronically, a total of 107 voters (which represents 55,7% of the total of electronic votes). Bearing this in mind we can see that the operation of the system is the item whose score increases the most (from 3,9 to 4,4 points)

The excellent scores obtained for simplicity in the voting process (4,6 points), which as we have seen did not require an especially complicated voting methodology and the speed of voting (4,7 points) should also be pointed out. These items also received high scores during the first poll in the Central District, however the substitution on this occasion of an alphanumeric identification key of the voter by the DNI/NIE or passport and the date of birth has certainly made the voting process much quicker.

The results obtained with regard to the evaluation of the reliability/confidence in the system and as such its security, deserve special consideration. With regard to the first item we can observe a slight improvement of two decimal points which appears to indicate a tendency towards the gradual acceptance of electronic voting systems. In any case it would be risky to try to extrapolate future behaviour in relation to the acceptance of these systems but we should not forget that these scores have been given by voters who freely and conscientiously chose to vote electronically. This points to a certain *pro technological* bias that obviously lead to a positive evaluation of the system. It is, nonetheless, also true that this has previously not been an obstacle for obtaining worse scores in all sections in other surveys.

On the other hand we have made reference to the evaluation of the security of the voting system. As we can see it is the only item whose score is identical to that recorded in June. Although the score obtained is on the higher end of the scale from 0 to 5 it is certainly true that security is one of the *weaker points* of these systems

and it continues to be so. This is not so much due to the real insecurity of the systems but rather the need to undertake an additional effort to provide information and communicate the security protocols of these technological solutions.

In our opinion an appropriate strategy to achieve this objective is to combine citizen transparency with a specialized audit. As such, it would be desirable that in much the same way as has been carried out with current poll of the Huerta de la Salud Park and was also done with the Central District within the MadridParticipa programme, in all participation processes which include electronic voting process observation stations should be set up to take responsibility for the integrity of the virtual ballot box.

In addition to the task to divide the cryptographic key necessary to open the ballot box, these recounting authorities act as social *notaries* of great importance when it comes to developing confidence in the integrity and good functioning of the system. In much the same way, the existence of independent observers strengthens the procedural guarantees and, as a result, the public’s confidence in electronic voting systems.

On the other hand, there is a need for a policy on technical transparency that will allow specialists to audit the source code of the voting programme, although the ideal situation would be for any citizen to be able to do so. This has become especially important as a result of the security failures detected by technological analysts from the Electronic Voting Observatory during the pilot test for the European Constitution (OVE, 2005).

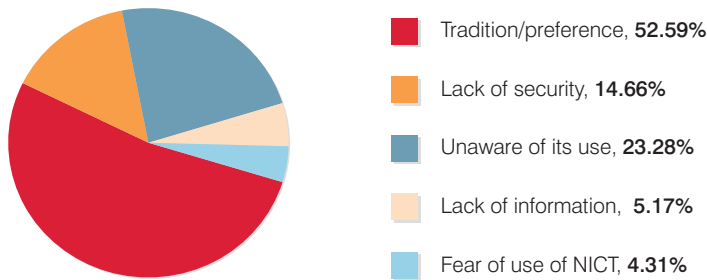
3.5. Evaluation of the use of NICT in participative processes

As we indicated previously, one of the most attractive parts of this report lies not only in the opinions of citizens that have placed their vote electronically but above all those that have preferred to continue using the traditional system. To this end, 131 questionnaires were completed that represent just over 37% of the traditional voters these then being sufficiently representative of this group.

The main question posed to this group made reference to the reasons for which they had chosen the traditional vote while having the possibility to use the electronic voting system. Graph 3 shows that the large majority of those surveyed claimed that the main reasons were tradition or their preference for the traditional system (52.59%). This validates yet again the hypothesis by virtue of which the implementation of electronic voting systems should be undertaken slowly and should very especially be complimented with the use of traditional voting systems. This coexistence of both systems appears to be one of the key positive elements of the public participation process undertaken in the Hortaleza district.



Graph 3. Alleged reasons for choosing the traditional vote as opposed to the electronic



If we look in more depth at the reasons which led residents to chose the traditional voting method, table 5 shows us that the in all age groups the main reason is tradition. It is also interesting to note that the lack of security is claimed as the main motive among the youngest groups, between the ages of 16 and 24, which could largely be considered a reaction brought about by their broader knowledge of the Internet environment.

Table 6. Distribution of traditional voters according to age group

Reasons for traditional vote	Age groups						Total
	16-24	25-34	35-44	45-54	55-64	>65	
Tradition / Preference	60.9%	72.7%	50.0%	50.0%	43.3%	50.0%	52.6%
Lack of security	26.1%	–	10.0%	9.1%	20.0%	10.0%	14.7%
Unaware of its use	13.0%	18.2%	40.0%	13.6%	30.0%	30.0%	23.3%
Lack of information	–	9.1%	–	13.6%	3.3%	5.0%	5.2%
Fear of use of NICT	–	–	–	13.6%	3.3%	5.0%	4.3%

We should also point out the lack of responses related to a fear of use of NICT among the younger age groups from 16 to 44. As we have been able to determine in other studies (BARRAT/RENIU, 2004b) the digital divide in terms of age sits on this generational threshold.

Another aspect which is also intimately related to the choice of using a traditional voting system is the opinion of those surveyed regarding extending the use of NICT in other polls or elections. Table 7 shows that those surveyed would prefer that these be more generally used, 81% indicating that they support this.

Table 7. Attitude regarding the generalized use of NICT in polls and elections

	%	(N)
Yes	81.7	188
No	18.3	42
Total	100.0	230

These values are higher in the case of using NICT in other polls such as the one carried out with regard to the Huerta de la Salud Park as opposed to their use in binding electoral processes. Nonetheless, these positive results are complimented on the one side by the clear preference of those surveyed for electronic voting systems (table 8) as well as the acceptance of their use on behalf of those that voted using the traditional method (table 9).

Table 8. The preferred voting system

Preferred system	%	(N)
Traditional vote	23.5	54
Electronic vote	76.5	176
Total	100.0	230

With regard to the preferred voting system, the socioeconomic data shows that the reluctance to using electronic voting amongst those surveyed is most evident amongst those that have a monthly income which is below 1,200 €. This confirms another aspect of the digital and social divide: the economic capacity of the citizen conditions their acceptance of the use of NICT in politics due to their access and familiarity with these. On the other hand this argument can be contrasted by the fact that above this reference value, the preference for electronic voting is on average 94%.

**Table 9. Support for a more generalized use of NICT in polls and elections.
Those surveyed that voted in the traditional way**

Reasons for traditional vote	Generalized use of NICT	
	Yes	No
Tradition / Preference	42.3%	11.7%
Lack of security	8.1%	7.2%
Unaware of its use	18.9%	3.6%
Lack of information	4.5%	0.9%
Fear of use of NICT	1.8%	0.9%
Total	75.7%	24.3%

In addition, it is very interesting to observe the wide acceptance that a generalized use of NICT has even among citizens that voluntarily choose the traditional vote. Table 8 shows the breakdown of these citizens according to the reasons given for this vote and their position with regard to the generalized use of NICT in participative processes. It is especially interesting to note how only the point of tradition is the discriminatory element when it comes to incorporating NICT into these processes.

On the other hand, over half of those who indicated that the main reason for having chosen to vote in the traditional fashion was their perception of the lack of security in the electronic voting system supported extending the use of NICT. In summary, the information in table 8 appears to support yet again the theory according



to which the implementation of an electronic voting system in the Spanish society will largely depend on the simplicity of the electoral process.

All of these values are further reinforced when we consider the choice of the election form with regard to the acceptance of a more generalized use of NICT (table 10). As can be seen the percentage of those citizens that even having used the traditional voting method support the use of electronic voting in the future is well over half.

Table 10. Acceptance of the use of NICT according to type of vote cast

Type of vote used	Extending the use of NICT		Total
	Yes	No	
Traditional vote	76.6%	23.4%	100.0%
Electronic vote	87.7%	12.3%	100.0%
Total	82.1%	17.9%	100.0%

This allows us to be rather optimistic with regards to these types of electronic voting systems here within the public participation programme of MadridParticipa. As occurred with the first initiative undertaken in the Central district of the city this information allows us to gather an understanding of the public's support for the use of electronic voting systems in the future (table 11).

Table 11. A future scenario regarding the use of electronic voting systems

Would you use an electronic system in...		
...a citizen consultation?	...a binding election?	
	Yes	No
Yes	72.7%	11.9%
No	2.6%	12.8%

This information cannot be more encouraging; from all of those surveyed only 12,8% did not support the use of these systems and only a little under 12% would not use them in binding elections. This value means that half of those surveyed indicated their preference for a traditional voting system which clearly indicates the support for the coexistence of both voting systems.



4. Conclusions: improving citizen participation

The second of the studies undertaken as a result of the implementation of the MadridParticipa programme in the Huerta de la Salud Park has allowed us to confirm some tendencies outlined in our previous report (BARRAT/RENIU, 2004b).

Firstly, we have been able to establish the inefficiency both in academic and political terms of evaluating these types of initiatives from a perspective purely centred on participation values. In our humble opinion, these initiatives should not be evaluated so much in quantitative terms but rather in qualitative terms. As such, the effort to get closer to the public opinion is a true reflection of this interest. It will be as a result of the knowledge obtained from the evaluations provided by the participants that we will be able to refine these mechanisms for political participation.

Secondly we have been able to confirm once again the importance of the digital and social divide. The socio-demographic and socio-economic profile of those surveyed combined with their evaluation and perception has allowed us to gather a better insight into the importance of economic variables for the understanding of certain attitudes of a potential reluctance towards the introduction of electronic voting systems.

Thirdly, we have been able to observe a positive evolution in all aspects measured from the institutional evaluation of the organization of the polls to the evaluation of the technology used as well as the opinion regarding the future use of electronic voting systems. This can be basically attributed equally to three reasons which are also complimentary. Firstly, an improved management on the part of the responsible institution –the Madrid City Council– due to the experience acquired in the Citizen Consultation held in the Central District. Secondly, the greater specification of the objective of the poll –the closing hours of the Huerta de la Salud Park– with a much clearer connection for potential participants. Thirdly, and not least important, the decision to offer two voting channels, both the electronic and traditional ones.

It is precisely this decision, the offer of two voting systems, that makes the report that much more relevant, given that we have been able to compare different perceptions from the same group of voters. We believe that this decision is very important if there is a true desire to consolidate electronic voting systems. As the data indicates, residents that chose to use traditional voting systems –basically due to preference and/or tradition reasons– value very positively the implementation of electronic voting and support its wider use.



Finally, we believe that we should especially point out the low impact of arguments related to the security of electronic voting systems of the fear of use of NICT, contrary to certain unfounded arguments. As we have outlined, insecurity is only the third of the arguments used to adopt a traditional voting channel –quite a distance behind tradition and the lack of information–, while the fear to use electronic voting technology is particularly insignificant.

In summary, we believe that this has been a phase which has allowed residents to familiarize themselves with electronic voting systems, improving as such the level of participation of residents in adopting decisions related to their district.



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Appendix

Questionnaire from the Citizen Consultation



Questionnaire from the Citizen Consultation

1. Gender

Male Female

2. Age

3. How would you evaluate the following aspects of the Citizen Consultation?
(0 means very poorly and 5 very well)

	0	1	2	3	4	5	Na
3.1. The need for these types of citizen consultations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2. Information given prior to the poll	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3. The organization of the poll	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4. Applicability of the results of the poll	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.5. The use of new instead of traditional technologies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. You voted via...

...a traditional ballot box? ...the internet? (*go to question 5*)

(only for those that have voted via the traditional channel; DO NOT SUGGEST)

4.1. Could you please tell us why you chose not to use the Internet to place your vote?

Tradition/I prefer it Lack of security I don't know how to use it
 I don't have any information about it/ I didn't know Afraid to use these technologies

(After the response, go to question 7)

5. How would you evaluate the following aspects of the electronic system used? (0 means very poorly and 5 very well)

	0	1	2	3	4	5	Na
5.1. Information regarding system operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2. Confidence in the voting system used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.3. Simplicity of voting procedure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.4. Security of the voting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.5. Speed of the voting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.6. Level of general satisfaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Which system do you prefer: the electronic or traditional system used?

- Traditional system Electronic system

7. Do you believe that there should be a broader use of new technologies in other polls or elections?

- Yes No

8. In a future citizen consultation, would you use a system like this again? Yes No

9. In future elections, would you use a system like this to place a binding vote?

- Yes No

10. Do you have a mobile telephone? Yes No

11. Do you have a computer at home? Yes No (go to question 14)

12. Do you have internet access at home? Yes No

13. Where do you usually connect from...?

- Home Work University Cyber café Civic Centre Another place

14. Marital status

- Single Married Widow Separated Divorced De facto relation

15. Labour situation

- Self-employed Wage earner Retired / Pensioner House wife or husband
 Student Unemployed

16. Could you please tell us what your monthly level of income is?

- Less than 800 € Between 800 and 1,200 € Between 1,200 and 1,600 € Over 1,600 €

