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# Tools for global democratic governance

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## INTRODUCTION

Taking "democracy" in its etymological sense, as "people power", democratic governance requires establishing appropriate procedures to ensure that decisions that pertain to collective matters are taken by the set of people who are part of the community.

When it comes to large communities, as a country or indeed the whole of humanity, circulation and processing of information becomes a key problem for generating such collective decisions. Define procedures to make it possible is therefore a crucial issue.

Usually, it is considered that in such large communities the only way to exercise democracy is to delegate representation in a restricted body of representatives through periodic elections. But often such representatives act outside or against the will of their constituents, turning democracy into a fiction that has little to do with "people power". In this representative system, democracy is an exception that is exercised only once every four years or whatever between elections, which also are often distorted by inequality in the possibility of communication of the various proposals or by the same electoral system.

However, the new Information and Communication Technologies enable overcome such limitations, so that citizens can make decisions about public affairs on a daily basis and not exceptionally. Indeed, the effective realization of these possibilities can find political obstacles by those in power. In this paper we will not discuss these political obstacles, but only existing technical possibilities.

## FREE SPEECH AND COMMUNICATION

A precondition for the creation of a collective decision on any matter is that all members of the community can effectively deliver information about the same, and convey your opinion. Free access and use of the Internet is a tool for this. Internet enables indeed overcome the situation in which only a few agents can issue information through the mass media, reducing the vast majority of the population to the role of receptors. Therefore, a real democracy requires full internet access were a basic right guaranteed to all citizens.



But it would be incomplete if the information is not in fact accessible, which requires transparency in the data related to it, and to have the means to locate relevant information on the issue. Therefore, both leakage of information and the use of search tools are essential to democratic governance.

This entails the danger of conditioning of real democracy by those who control the tools for filtering and searching information. Therefore, it is essential on the one hand that these instruments are public, without being monopolized by private companies, and on the other hand that their use can be self-managed by users, preventing from being used as an instrument of government censorship. And of course, net neutrality should be preserved as a prerequisite for freedom of expression, so that there were not slow lanes on the information superhighway for those who can not afford the fast lane, and that all content uploaded to the network can be equally accessible by those seeking access to them.

#### REFERENDUMS

In small groups, the physical meeting of its members can make decisions in assembly. In large or scattered groups, it is necessary to collect the votes of its members in a referendum. But the existence of the Internet permits to do this on a daily and not exceptional basis.

The so-called democracy 4.0 (1), developed under the 15M movement, the Spanish version of the Occupy movement, proposes to combine parliamentary and direct democracy, so that anyone could personally exercise the vote on any issue before the parliament, subtracting the share of the vote of the parliamentarians from his or her constituency.

For example, if an electorate of 40 million of people was represented by a parliament of 400 deputies, and 4 million voted on a question in a certain way, their vote would compute globally as 40 seats, and each deputy would be detracted the 10% of his or her vote.

Naturally, this would require both a full and transparent access to parliamentary debates as the existence of channels through which citizens can express their views on the issues under discussion.

Democracy 4.0 would not replace most of the parliamentary work, but would function as a safety valve in case the representatives tried to act against the will of their constituents.

It should be emphasized that currently Democracy 4.0 is technically possible provided that all citizens are guaranteed access to the Internet, either at home or in public places, which can be identified with a username and password previously validated.

#### PROPORTIONAL ELECTORAL SYSTEM AND OPEN LIST

Assuming the need of a specialized body for the development of laws and rules to be adopted, the election of its members should enable its composition reflects as closely as possible to that of their constituents.



This requires the use of a proportional electoral system, among them the one that provides a better approximation to the exact proportionality is the Largest Remainder system (2).

But on the other hand, to enable citizens to freely elect their representatives, they should be able to be voted on open list.

An election system with open list based on the largest remainder system (3) is particularly complex for scrutiny and assign the seats because the percentage of votes that guarantees to obtain a certain number of representatives depends on the total number of candidatures. So, are obtained at least  $m$  of  $n$  seats if the proportion of votes is greater than  $(rm-1)/(rn)$ , where  $r$  is the number of candidatures. But the current computing capability with computers would enable its realization.

So, assuming that each voter votes an ordered list, seats secured by votes in first position would be initially distributed far as possible with increasing values of  $r$ . Having determined the maximum value of  $r$ , that would be used to distribute seats secured by the votes in the second, third, etc.. positions, given that only would add up the votes cast on ballots that coincided in previous positions, thus properly classified.

The remaining seats would be distributed according to the total score of the candidates not yet elected, with their votes weighted according to the weights of Saint Laguë (ie, divided by twice the position minus one, with successive odd numbers) system wichi with two candidatures is mathematically equivalent to the Largest Remainder system.

#### REVOCABILITY

But a truly democratic governance should allow, in addition to direct intervention in the adoption of rules through democracy 4.0, the permanent revocation of elected representatives.

In the case of single positions or single-member representatives, this is being done in other countries (like the U.S. or Venezuela) by recall referendums. Such referendums are held if enough voters requested it in a signed petition, and whether revocation is approved the election is repeated to replace the revoked person.

But with a computer system may automatically replace the selected even in the case of proportional systems people.

This is possible with a double encryption of the vote that enables the issuer to change it at any time by computer.

Thus the vote electronically issued could remain linked to a stored key guarded by the electoral board, which would not identify the voter, but would allow to amend his or her vote using the part of the key in his possession.

In this case, previous election results should be recalculated, and if the result changes would take place the appropriate substitutions. Naturally, this would only happen if enough voters



changed their vote in response to disappointment over the performance of their elected representatives.

#### STABILITY

A system with a large number of decision makers would reach a stable situation and tend to stay in it, since, in the absence of global perturbations, local fluctuations cancel each other.

However, if the implementation of democratic governance starts from an initial situation in which an elite makes decisions regardless of the interests of the majority of the community, we can expect a phase of instability, that would be temporary until achieve a stable self-government.

Therefore, this temporal instability would be a clear indication of the lack of real democracy, which in the absence of procedures as described in this paper would cause widespread protests and riots. By contrast, with procedures of real democracy protests would be substituted by direct democratic action.

And once restored the correlation between representatives and represented, they learn to consult their decisions and act in the interest of the majority and not in their own interest.

This probably hurt some privileged minorities, but most would benefit.

[1] <http://demo4punto0.net/en/node/16>

[2] <http://www.uv.es/pla/sistelec/comprop2.htm>

[3] <http://www.uv.es/pla/sistelec/restamaj.htm>