# Conclusions

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# Chapter 15
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E-voting has evolved quickly in the past two and a half decades. From an acceptance point of view, it has gone from euphoric introduction (in the hope of increasing participation and other electoral improvements), to total rejection (because of security and transparency concerns), to a more balanced approach (giving priority to specific groups of voters) which tries to exploit the advantages that come with technology while acknowledging and mitigating the associated risks. The challenge for all actors involved lies in the fact that the use of high-tech in votes and elections is a disruptive development that raises new questions. Below we list some of them. Ultimately the challenge is to define a clear, systematic approach in treating digitalized information and the paperless environment in the electoral field. Further we propose a few ideas on how to negotiate the turn.

Legislators are faced with the issue of 'parallelism' between traditional and electronically-backed voting methods. What is similar and what is different? Is existing legislation sufficient to regulate electronically-backed voting or should it be completed by an e-voting specific regulation? What should such regulation contain and at what level of detail? Judges face questions related to the division of competences and responsibilities in this area as well as issues such as the legal conformity of technical solutions and the impossibility of proving alleged defects. Implementation authorities on their side need to clarify their room for manoeuvre in introducing e-voting. Issues such as legal conformity of design, operation and control of an e-voting system are at the centre of their preoccupations. Ensuring such conformity constantly over time and finding ways to make e-voting transparent are others.

The introduction of e-voting cannot be assimilated to a simple extension of existing rules to cover the use of electronically-backed solutions. A rethinking of the requirements and procedures is needed, as is possibly also process re-engineering. E-voting, or more generally computers, have so far been used in a very pedestrian way[1] based on the assumption that, if we use a machine to replace the existing process, the machine must mimic the existing process. But one can do better. It is possible to use the power of ICT systems to come up with better electoral processes. Individual verification as introduced by the so-called second generation e-voting systems is an example of that. The authorities should probably start by recognizing that an automated process is very different from a

1 The authors thank Richard Hill in Geneva for bringing forward this argument.

manual process. Indeed, important improvements in business processes have been achieved precisely by recognizing such differences.

Beyond the challenge of integrating ICTs, the discussion around e-voting can also become an opportunity to review, clarify and formalize current electoral legislation and procedures more generally. The quest for transparency is a good example. Lessons learned through the practical use of e-voting in the past years led to the introduction of verifiable e-voting systems. Legislators, however, may take the opportunity (and in some cases have) to analyse and formalize transparency requirements more broadly, for example by ensuring meaningful observation in the context of traditional voting channels as well.

Below we present a few measures that may help the different players to organize work on e-voting.

## The Role of Parliaments

The Constitution and formal laws introduced by parliament enunciate constitutional principles, such as voting freedom, secrecy and equality. Examining the compliance of highly technical secondary regulations to such principles has proven difficult for judges. In this context one should remember that parliaments ensure a democratic oversight, not just through normative initiatives, but also by other means, for example parliamentary control activities such as parliamentary questions, hearings, ad hoc committees. Such an approach allows parliaments to achieve their mission of monitoring electoral management issues. The same happens with other fields where the legal implications of technical developments overwhelm the capacity of traditional parliaments. This type of parliamentary control will be useful to courts when assessing acts and regulations introduced by the executive.

*Recommendation 1: Enhance specific parliamentary procedures linked to the oversight of e-voting.*

## The Election Cycle Approach

E-voting cannot be considered on a short-term basis since it includes several actions that must be performed before and after the so-called election period, which may only encompass a few weeks. E-voting procedures impact the whole electoral cycle:[2] pre-elections, election day, and post-elections. It is therefore more realistic to consider e-voting as a longer-term project intended to improve elections.

2 For an example of the electoral cycle see http://ecycle.idea.int.

Such an approach may require an overall modification of the internal structure of Electoral Management Bodies (EMBs). Timelines, roles, reporting procedures and so on will have to be adapted accordingly.

*Recommendation 2: Promote institutional understanding of e-voting's place in the election cycle. EMBs and courts recognize that e-voting is not something to decide shortly before upcoming elections.*

## The In-house Expertise of Electoral Management Bodies and Courts

If neither EMBs nor courts have developed an internal awareness about the challenges faced with e-voting projects, this will be reflected in their work and decisions. An electoral cycle approach to e-voting becomes difficult if institutional players ignore the real implications of an e-voting initiative. A fair dialogue between vendors and public institutions is impossible if neither EMBs nor courts realize the real consequences that a given commercial proposal entails.

Once the necessity of such a previous institutional capacity building is admitted, it is important to define who provides such expertise. Vendors should not act as the unique information source to provide expertise. Independent experts may be solicited and contradictory opinions should be considered, while recognizing that the final decision rests with the competent authority in line with democratic legitimacy. A plurality of opinions will hopefully inform nuanced and balanced decisions.

*Recommendation 3: Foresee specific institutional initiatives to enhance the general awareness of EMBs and courts on e-voting challenges.*

## The Role of Vendors and Non-Disclosure Agreements

Democratic preoccupations and legitimate commercial interests that underlie the behaviour of vendors, differ. E-voting needs balanced relationships between suppliers and public institutions. Non-Disclosure Agreements (NDA) may constitute barriers when trying to assess such relationships.

As happens in the commercial field, an agreement between two or more parties, when challenged in court, may be found to contain unfair conditions which may be declared void. This approach is intended to protect consumers (e.g. when they take a loan or a mortgage and sign highly technical documents). EMBs are not private players and thus they are subject to different rules, but the agreements that they accept can also contain an inappropriate balance between contradictory interests. Please note that suppliers may encompass e-voting companies as well as other private stakeholders, such as the private firms that carry out certification and audits.

The Finnish experience as well as e-voting implementation in France and the United States, three countries whose approaches are analysed in the book, show that vendors may play a crucial role in disclosing information or, on the contrary, protecting sensitive data on the grounds that their disclosure could endanger other legal goods, such as intellectual property. Norway (not discussed in this book) represents another interesting point of reference on disclosure.

*Recommendation 4: Assess the legal implications of Non-Disclosure Agreements, taking into account the different interests at stake.*

## The Evidentiary Value of Individual and Universal Verifiability

Verifiability appears to be the appropriate way to create a climate of trust between voters, political parties and public institutions. If the e-voting mechanisms themselves allow a broad verification that encompasses both individual and universal verifiability,[3] then the amount of information on the e-voting system that the vendor discloses becomes secondary. The sounder the verifiability introduced in e-voting, the lower the importance of the disclosure arguments discussed above.

Moreover, verifiability could address one of the main problems that we have seen in the case law comparison. Courts regularly require evidence of the alleged problems and that is sometimes difficult to obtain. Sound verification might overcome such a barrier. Given that there are different e-voting platforms and different verifiability systems in use, it is important to clarify the role that proofs obtained through verifiable systems can later play in court.

Verifiability needs to take into account legal and judicial requirements. Again, e-voting is not merely a technical development. It is rather a procedure that should achieve a correct technical performance as well as a proper legal oversight. Furthermore, a perfect technical verification scheme that does not generate legal evidence admissible to be used in court may be more difficult to accept.

*Recommendation 5: Review verification systems from a legal point of view so that their outcome is useful also in judicial procedures.*

## A Multidisciplinary Approach

Finally, it is important to stress the necessity of a multidisciplinary approach to e-voting. A couple of decades ago e-voting began its path as an academic

3 Individual verifiability refers to the ability of an individual voter to verify that his or her vote was received and counted correctly by the electoral authority. Universal verifiability refers to the ability of any voter to verify that all votes were received and counted correctly.

project based on computer science research and most initiatives had (and still have) a technical bias. Less focus was put on legal and social challenges. However, a multidisciplinary approach remains crucial. Social research linked to e-voting for example would be very useful to nuance and balance technical and legal conclusions.

The dialogue between technical, legal and social perspectives still needs major improvements. For sure it is a difficult task because each party has to understand the specific language of the others, but a common meeting point would be very useful for the consistent development of future e-voting platforms. Many inter-disciplinary meetings have occurred where representatives of these three perspectives were able to present their views, but a more systematic approach where each issue is reviewed from the three points of view is still needed.

*Recommendation 6: Always adopt a multidisciplinary approach to e-voting.*

## Outlook

Ultimately, e-voting case law cannot be analysed as an isolated field limited and based only on judicial parameters. As happens in any legal domain, case law is the last legal reaction to a given dispute where many factors are to be taken into account. Case law is not built in a pure sphere. Judges have to solve real problems with legal means, that is to say, with impartial and fair reasoning, but the solution will usually not depend only on abstract approaches. This is why a case law comparison may be extremely useful for future e-voting developments. While specific cases deal with concrete and real problems and the relevant judicial solution obviously takes into account such particularities, comparing different cases provides a broader overview. Local problems receive a new analytical approach that puts them in relation with other similar cases and the overall result helps develop an understanding of how e-voting is deployed in real cases and how the problems are solved by judicial bodies. The six recommendations listed above refer to the influence of different factors on e-voting – political (role of parliaments), administrative (in-house expertise, electoral cycle, NDA), technical (evidence) and social (multidisciplinarity, trust) factors. These factors illustrate the mutual interaction between judicial considerations and extra-judicial inputs.

In the future, e-voting case law will likely have to address new challenges due to the on-going evolution of electoral technology. If the so-called second generation of e-voting solutions incorporate verifiability as a key element and such solutions become generally accepted, further developments will depend on the actual maturity of both e-voting channels and electoral systems as a whole to address new trends in political representation and individual participation. Nobody knows yet the form that this may take. In this case, e-voting will be closely linked to e-democracy, that is to say, a new way to understand the political landscape. E-voting would not be a collateral experiment anymore. It would

enrich the set of ICTs that are reshaping the relationship between citizens and public institutions. Social networks, new participatory processes linked to global threats, the actual absence of national boundaries or similar issues that are already present in contemporary democracies, will also influence e-voting development and thus judicial decisions.

If internet voting is going to be used by a majority of voters in a given country, which is not the case nowadays, new legal issues may arise as e-voting becomes the main voting channel. As for today, the transition from partial pilots to a generalized use is still pending in most countries. When (and if) this happens, case law may have to address new legal questions on risk assessment, the effective use of verifiability tools, the impact of possible negative results (such as proof of manipulation of individual votes) obtained through verifiability methods on the overall voting results, and so on.

In any case, the path is still very long. As recalled in this book, the first stages of e-voting development have shown much more complexity than expected. Dialogue between computer and social sciences such as law and political science must be intensified and challenges faced by both legislation and case law resolved. This book provides a first collection of e-voting case law and a comparative analysis that highlights some of the main lessons that can be drawn from different local and national situations.