The Impact of Technology on Testate Succession in South Africa

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Abstract

One advantage of the Fourth Industrial Revolution (4IR) era is the expedient exchange of goods and services via the Internet. The *Electronic Communications and Transactions Act* 25 of 2002 (*ECTA*) plays a critical role in regulating transactions and communications. However, *ECTA* excludes the provisions of the *Wills Act* 7 of 1953 from its ambit. Inevitably, this creates difficulties for the recognition and/or validity of electronic wills in South Africa. If technology is not acknowledged and applied in the space of testate succession, enhanced 4IR innovations threaten the *Wills Act* with obsolescence. We argue in this contribution that the rapid changes brought about by the 4IR and the exclusion of the *Wills Act* from the ambit of *ECTA* mean that testate succession is not responding to the current impact of technology on people. In this contribution we seek to create a synergy between the two statutes with a view to ensuring the relevance of the *Wills Act* in the 4IR. Ultimately we propose that both statutes be amended to cater for electronic wills. This can be achieved by combining the use of digital signatures and Public Key Infrastructure (PKI) technology. In reaching this conclusion we draw some lessons from the statutory changes in the United States of America (USA).

Keywords

Fourth Industrial Revolution; electronic communications; electronic signature; electronic wills; writing.

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1 Introduction

The formalities for the valid execution of a will have been in place for more than five decades in South Africa. Section 2(1) of the *Wills Act*[1] regulates these static provisions. Over time, however, society has evolved in a number of ways due to technological advancements. Most people have access to the internet and own some kind of electronic device. These electronic devices can be used for various social, economic and legal activities, including communication, entertainment and exchanging goods or services for a fee through online shopping.[2]

In the light of these developments, this contribution interrogates the very real probability that the section 2(1) provisions are now obsolete. In discussing this possible obsolescence, this contribution commences with a discussion of the scope and text of section 2(1). To fully engage with this provision it is necessary to focus on the writing and signature requirements to establish the purpose served by these formalities in making a will. Secondly, we will outline the generic framework of the Fourth Industrial Revolution (4IR) and present evidence of the extent of South Africa's purported legal response to it. For context we are going to limit the purported responses to the 4IR period to issues relevant to testate succession. We then explore the relationship, or lack thereof, between the *Wills Act* and the *Electronic Communications and Transactions Act* (*ECTA*),[3] in an effort to create a legal mechanism that is relevant to the 4IR. Finally, we will outline the reasons for change and make recommendations by drawing lessons from developments in the USA.

2 Requirements for the validity of wills

A testator will draft a will to explain how he wants his estate to be distributed upon his death. Jamneck *et al* define a will as "a document executed in the manner prescribed by law by a person, concerning the disposition of property and other matters within his control, to take effect after his death".[4] Section 1 of the *Wills Act* simply defines a will as "including a codicil and any other testamentary writing". Section 1 does not explain what constitutes a codicil or testamentary writing. The courts have therefore had to clarify the

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1 *Wills Act* 7 of 1953 (the *Wills Act*).

2 Adekunle and Fernandes 2020 *Journal of Open Innovation* 2.

3 *Electronic Communications and Transactions Act* 25 of 2002 (the *ECTA*).

4 Jamneck *et al Law of Succession* 47.

issue of what suffices as testamentary writing. In *Ex Parte Davies* the court indicated that testamentary writing must identify the property bequest, the extent of the interest bequeathed, and the beneficiaries.[5]

Although the *Wills Act* is unclear on the meaning of a will itself, section 2(1)(a)[6] is clear about the formalities necessary for its validity. These requirements can be summarised as follows. It is implicit in these provisions that a will must be in writing; it must be signed by the testator, or a properly authorised person, in the presence of at least two competent witnesses; thirdly, the witnesses must also sign the will in the presence of the testator and each other; lastly, if the will has more than one page, the testator must sign each and every page of the will.[7] These formalities ensure the authenticity of the testator's final dispositions and aim to prevent fraud during and after the execution of the will.[8] The objective is to make sure that the testator leaves a valid will behind when he dies.[9] We submit that this authenticity and certainty are safeguarded by the measures for validity, namely the signature of the testator or any person of his choosing and the presence of at least two competent witnesses who in turn sign the will.

We now consider the writing and signature requirements for a will as central issues in the argument for evolution in the 4IR.

2.1 Writing

It has been stated that testamentary arrangements are done in writing and are contained in a document.[10] However, it cannot be emphasised enough that this is a contextual interpretation. The *Wills Act* does not expressly say that a will must be in written form but an inference can be drawn from the words used in section 2(1) in particular and in other provisions of the *Wills Act*. For instance, the definition of a will in section 1 refers to a will as including "any other testamentary writing". It is clear, therefore, that the writing requirement is justifiable. Additionally, the word "sign" is defined as "includ[ing] the making of initials and, only in the case of a testator, the

5 *Ex Parte Estate Davies* 1957 3 SA 471 (N).

6 Subject to the provisions of section 3 *bis*–
"(a) no will executed on or after the first day of January 1954, shall be valid unless– (i) the will is signed at the end thereof by the testator or by some other person in his presence and by his direction; and (ii) such signature is made by the testator or by such other person or is acknowledged by the testator and, if made by such other person, also by such other person, in the presence of two or more competent witnesses present at the same time; and (iii) such witnesses attest and sign the will in the presence of the testator and of each other and, if the will is signed by such other person, in the presence also of such other person; and (iv) if the will consists of more than one page, each page other than the page on which it ends, is also so signed by the testator or by such other person anywhere on the page."

7 Papadopoulos 2012 *SA Merc LJ* 94.

8 Schoeman-Malan *et al* 2014 *Acta Juridica* 80.

9 Sonnekus 1990 *TSAR* 120.

10 Schoeman-Malan *et al* 2014 *Acta Juridica* 85.

making of a mark", whilst signature "has a corresponding meaning".[11] The words "mark" and "making of initials" imply that something must be written down. The *Wills Act* also provides that the testator must sign the other pages if the will contains more than one page. Words like "writing", "making of initials or mark" and "pages" are evidence that a will must be in a written form and cannot be done orally or in a video format.[12] It is clear from a reading of section 2(1) that the Act's instruction about signatures refers to pages. It can be deduced from this instruction that a will must not be in an audio or video format but in the form of written documentation. It is emphasised that a will must be in written form.

Against this background, one would expect that "writing", as implied by the context of the Act, would be comprehensively defined. Regrettably, though, and despite its apparent importance for validity, the Act does not offer a definition of this term. Section 3 of the *Interpretation Act*[13] provides that:

> In every law expression relating to writing shall, unless the contrary intention appears, be construed as including also references to typewriting, lithography, photography, and all other modes of representing or reproducing words in visible form.

Similarly, section 1 of the *Copyright Act*[14] defines writing as "accommodating any form of notation either by hand or by printing, typewriting, or any similar process".

It is worth reiterating that the *Interpretation Act* requires that the words must be in "visible form" to qualify as writing. Interestingly, the *Copyright Act* uses words like "any similar process" which, we submit, opens up possibilities for using electronic documents. This argument will be explored in detail below.

For our current purposes, Papadopoulos suggests that:[15]

> [t]he main functions served by a written document are *inter alia* to provide that (1) a document is legible by all; (2) that it remains unaltered over time; (3) that it can be reproduced so that each party would hold a copy of the same data; (4) to allow for authentication of the data by means of signature; and (5) to provide a document in a form that would be acceptable to public authorities and the courts.

We submit that the strict enforcement of the formalities is necessary to ensure such protection because the deceased is not present to attest to the originality of his will. A reflection on the meaning of writing in terms of the *Interpretation Act* and the *Copyright Act* in particular underscores the

11 Schoeman-Malan *et al* 2014 *Acta Juridica* 85.
12 Crous *Legal Status of Electronic Wills* 10.
13 *Interpretation Act* 33 of 1957.
14 *Copyright Act* 98 of 1978.
15 Papadopoulos 2012 *SA Merc LJ* 101.

premise that as society and technology evolve we should not avoid questions about the adequacy of formalities from time to time.[16]

Furthermore, the English Club online dictionary defines writing as "the process of using symbols (letters of the alphabet, punctuation and spaces) to communicate thoughts and ideas in a readable form".[17] Wills can be written by hand or typewritten. A document that is typed on a computer will be accepted as a will.[18]

2.2 Signature

The *Wills Act* requires that a will must be signed by the testator or any such person directed by the testator at the end of the will.[19] The testator must sign in the presence of two competent witnesses simultaneously.[20] If the will consists of more than one page, each of the pages other than the last must also be signed by the testator, or by another person anywhere on the page.[21] The Act goes on to provide that if the will is signed by the testator using a mark, or by some other person in the presence of and in accordance with the direction of the testator, a commissioner of oaths must certify that he has satisfied himself concerning the identity of the testator and that the will that was signed is the will of the testator.[22] The definitions of "sign" and "signature" in section 1 have already been discussed above. However, the Longman dictionary defines "sign" as "to write your signature on something to show that you wrote it, agree with it or were present".[23]

The location of the signature was strictly interpreted in *Kidwell v The Master*,[24] where the court ruled that a 9cm gap between the testator's signature and the end of the contents of the will meant that the signature did not constitute a signature at the end of a will, as required by the Act. Heyink endorses Reed's contention that a signature has primary and secondary functions.[25] According to this view, the primary objectives have a bearing on the signatory's identity, and serve as confirmation of one's intention in respect of the document and as approval of the said document.[26]

The two competent witnesses are critical if there is a dispute about the will. They will have to verify that the testator signed the will in their presence. The signature provides a direct link between a will and the testator. Outlining

16 Jamneck *et al Law of Succession* 69.
17 English Club date unknown https://www.englishclub.com/writing/what.htm.
18 Schoeman-Malan *et al* 2014 *Acta Juridica* 85.
19 Section 2(1)(a)(i) of the *Wills Act*.
20 Section 2(1)(a)(ii) of the *Wills Act*.
21 Section 2(1)(a)(iv) of the *Wills Act*.
22 Section 2(1)(a)(v) of the *Wills Act*.
23 Longman Editors *Longman Dictionary* 1697.
24 *Kidwell v The Master* 1983 1 SA 509 (E).
25 Heyink 2014 https://www.lssa.org.za/wp-content/uploads/2019/12/LSSA-Guidelines_Electronic-Signatures-for-South-African-Law-Firms_October-2014.pdf 6.
26 Reed 2000 *Journal of Information, Law and Technology* 17.

a signature's traditional definition and purpose allows us to introduce and debate the use of electronic signatures below.

However, we must first reflect on the fallible nature of human beings. Despite the formalities for validity outlined in section 2(1) of the Act, sometimes a will fails to comply with these formalities. We provide a brief overview of the jurisprudence in this regard.

2.3 Condonation for failure to comply with the formalities for validity

The interpretation and application of the section 2(1) formalities have been strictly interpreted to protect against fraud by beneficiaries.[27] Failure to comply with the simplest formalities has led to the invalidity of wills in some circumstances, even in the absence of suspected fraud or forgery.[28] *Kidwell v the Master*[29] is a clear example of this approach. Clearly, this has the undesirable effect that even if the deceased has taken the initiative to execute a will, his estate could be distributed on an intestate basis due to minor errors.

A remedial mechanism, therefore, became necessary to rescue such estates from being distributed on an intestate basis. This was affected by including subsection (3) within the ambit of the formalities provisions. Section 2(3), which discusses the court's powers, is often referred to as the power of condonation or the rescue provision.[30] Schoeman-Malan argues that the objective of the condonation clause is to ensure testacy in circumstances where it is clear that the deceased intended to have a document as his will even though it did not comply with the formalities.[31]

Section 2(3) affords the court the power to order the Master of the High Court to accept a document which does not comply with the section 2(1) formalities, provided that the court is satisfied that the testator intended the incorrectly executed will to be his last will and testament.[32] Three requirements must be met for condonation: firstly, personal execution or attempt by the testator; secondly, the death of the testator; and thirdly, the court must be satisfied regarding the *animus testandi*.[33]

There is no unanimity on the degree of compliance with the formalities for validity in order to justify condonation. Consequently, both strict and flexible interpretations have been adopted. Magid J in *Webster v The Master*[34] adopted a strict interpretation and held that the section is meant to rescue

27 Jamneck and Williams *Wills and Succession* 258.
28 Schoeman-Malan 2015 *TSAR* 132.
29 *Kidwell v The Master* 1983 1 SA 509 (E).
30 Jamneck *et al Law of Succession* 78.
31 Schoeman-Malan 2015 *TSAR* 132.
32 Jamneck *et al Law of Succession* 78.
33 Paleker 2004 *SALJ* 27.
34 *Webster v The Master* 1996 1 SA 34 (D).

a document executed by the deceased – not someone other than the testator or even his attorney. He further stated that the provision was not intended to validate a document that does not comply with the set formalities of the Act. His reasons included that its purpose was to rectify technical non-compliance, not to give effect to completely unsigned documents.[35] However, Van Zyl J in *Back v Master of the Supreme Court*[36] followed a more flexible interpretation where he rescued a document drafted by an attorney, which was read to and approved by the deceased, who had delayed signing it pending advice regarding the tax implications of the document. Magid J's strict interpretation was rejected in *Webster v The Master*[37] as well.

In *Bekker v Naudé* the Supreme Court of Appeal ended the flexible interpretation.[38] The court rejected a request for an order in terms of section 2(3) with respect to a will drafted by a bank official, which was requested by the deceased and posted to him; he died before he had executed it. Olivier JA referred to discussions that supported both the strict and flexible interpretations and then indicated that in his view the strict interpretation was the correct one.

The condonation clause was a reputable intervention to support testacy. However, it is not a time-sensitive intervention in a changing society affected by technological developments. We now investigate how developments in technology have affected testate succession.

3 The Fourth Industrial Revolution (4IR) and the South African legislative response

Societies develop and change continuously over time. The development of technology is a great example of such changes and occurred in a series of industrial revolutions. Vast socio-economic changes characterise an industrial revolution.[39] The first industrial revolution began in the 1700s, with significant inventions being the steam engine and the machinery powered by it.[40]

The second industrial revolution emerged in the 1870s,[41] and featured the development of electricity and new communication methods such as the telegraph and the telephone.[42] Forms of communication such as personal

35 *Webster v The Master* 1996 1 SA 34 (D) paras 41F-42G.
36 *Back v Master of the Supreme Court* 1996 2 All SA 161 (C).
37 *Webster v The Master* 1996 1 SA 34 (D).
38 *Bekker v Naudé* 2003 5 SA 173 (SCA).
39 Mohajan 2019 *Journal of Social Sciences and Humanities* 378.
40 Karvonen *Informational Societies* 9.
41 Mokyr and Strotz 1998 *Storia dell'economia Mondiale* 1.
42 Karvonen *Informational Societies* 9.

computers, the internet, the World Wide Web, and wireless communication technologies characterised the third industrial revolution.[43]

The Fourth Industrial Revolution, termed the 4IR by Klaus Schwab, is currently taking the world by storm.[44] The concept of the 4IR is a combination of many technologies that blur the boundaries between the physical, digital and biological spheres. Despite all these developments, the definition of the 4IR is contested. For the current purposes we endorse the view that the 4IR refers to the arrival of cyber-physical systems that involve new abilities for people and machines[45] and is characterised by the recent rapid technological developments.[46] The 4IR fuses technologies such as advances in artificial intelligence, robotics, the Internet of Things, 3D printing and quantum computing.[47]

The fast-paced breakthroughs of the 4IR, when compared to the previous revolutions, show an exponential rather than a linear pace.[48] The 4IR has led to a decrease in the manual and physical activities due to automation and the digitalisation of processes.[49]

This paper intends to assess how all these changes can affect testate succession. It is no exaggeration to submit that the development of technology has affected all aspects of our lives in one way or another. As a consequence, policymakers need to change their approach in order to be current and legally relevant.[50]

Against this background we now explore how South African policymakers have responded to the technological era to enable society to participate. The legislature enacted the *Electronic Communications and Transactions Act* to facilitate and regulate electronic communications and transactions. The objectives of the Act are, amongst others, to enable and facilitate electronic communications and transactions in the public interest,[51] to eradicate and prevent barriers to electronic communications and transactions in the Republic;[52] to promote legal certainty and confidence in respect of electronic communications and transactions;[53] and to ensure

43 Rifkin date unknown https://www.esi-africa.com/wp-content/uploads/Jeremy%20Rifkin.doc.
44 Min *et al* 2018 *International Journal of Financial Research* 90.
45 Davis 2016 https://www.weforum.org/agenda/2016/01/what-is-the-fourth-industrial-revolution/.
46 Bogdanov 2019 *Perm University Herald Juridical Sciences* 238.
47 Adekunle and Fernandes 2020 *Journal of Open Innovation* 3.
48 Schwab 2016 https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond.
49 Adekunle and Fernandes 2020 *Journal of Open Innovation* 2.
50 Schwab 2016 https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond.
51 Section 2(1) of the *ECTA*.
52 Section 2(1)(d) of the *ECTA*.
53 Section 2(1)(e) of the *ECTA*.

compliance with accepted international technical standards in the provision and development of electronic communications and transactions.[54]

As the title of *ECTA* suggests, it applies to electronic communication and transactions. It must be noted here that this contribution focusses on communications. Communication refers to the process by which people exchange information or express their thoughts and feelings, ways of sending information using a phone or computer, and how people express themselves so that other people will understand.[55] Electronic communication means "communication utilizing data messages".[56]

We submit that *ECTA* is a legislative response to the 4IR. However, this Act fails to have a direct impact on testate succession, because in terms of section 4(3)[57] and section 4(4)[58] the *Wills Act* is specifically excluded from its ambit. Whilst the *Wills Act* is an old statute that has not kept up with the changes brought about by the 4IR specifically, the express exclusion of wills from the ambit of *ECTA* means that testate succession cannot evolve. Testators cannot participate in the digital sphere when executing a valid will. This means that testate succession is likely to lag behind other legal developments that the 4IR may have brought about. To bring testate succession up to speed, we indicate below how a synergy can be created in order to enable the execution of a valid will using electronic means.

4 Creating a synergy between 4IR, *ECTA* and the *Wills Act*

4.1 The South African position

4.1.1 Writing requirement

We noted above that the *Wills Act* does not explicitly indicate that a will should be in writing. This essential requirement is inferred from the provisions of section 2(1)(a) of the *Wills Act*. To reiterate, the following are the key objectives of a written document:

(a) Meet the intentions of the testator;

(b) Give effect to such intentions;

(c) Exist for long periods of time; and

(d) Be protected against fraud.[59]

54 Section 2(1)(m) of the *ECTA*.
55 Longman Editors *Longman Dictionary* 1697.
56 Section 1 of the *ECTA*.
57 Section 4(3) of the *ECTA*: The sections of this Act mentioned in Column B of Schedule 1 do not apply to the laws mentioned in Column A of that Schedule.
58 Section 4(4) and Schedule 2 of the *ECTA*. This Act must not be construed as giving validity to any transaction mentioned in Schedule 2.
59 Crous *Legal Status of Electronic Wills* 12.

With these objectives in mind, we explore the meaning of writing through *ECTA* to establish whether an electronically written document can meet them. Our view is that the different yet related definitions of writing proffered in section 3 of the *Interpretation Act*, section 1 of the *Copyright Act* and the English Club online dictionary support the notion that writing can be done in other ways besides the traditional way of using a pen and paper. These definitions make it possible to consider electronic documents regulated by *ECTA*. Section 12 of *ECTA* provides that a requirement in law that a document or information must be in writing is met if the document or information is (a) in the form of a data message; and (b) accessible in a manner usable for subsequent reference. The term "data" means electronic representations of information in any form.[60] A data message refers to data generated, sent, received or stored electronically, including (a) voice, where the voice is used in an automated transaction; and (b) a stored record.[61] Section 11 of *ECTA* states that information is not without legal force and effect merely on the grounds that it is wholly or partly in the form of a data message.[62]

The acceptance of these definitions does not in itself clarify the issue of their application to testate succession, because an electronically written and stored document will not suffice as a valid will unless the testator and the witnesses sign it.[63] To create this synergy, we now engage with the signature requirement through the lens of *ECTA* and modern technological innovations.

4.1.2 Signature requirement

In this section we consider whether a signature on an electronic document can serve the same purpose as a signature on a traditional will written on paper. Section 1 of *ECTA* defines an electronic signature as "data attached to, incorporated in or logically associated with other data and which is intended by the user to serve as a signature". The section defines an advanced electronic signature as "an electronic signature which results from a process which has been accredited by the Authority as provided for in section 37".[64]

60 Section 1 of the *ECTA*.
61 Section 1 of the *ECTA*.
62 Section 11(1) of the *ECTA*.
63 Hirsch 2020 *B C L Rev* 835.
64 Section 37 of the *ECTA* provides as follows: "(1) The Accreditation Authority may accredit authentication products and services in support of advanced electronic signatures. (2) An application for accreditation must– (a) be made to the Accreditation Authority in the prescribed manner supported by the prescribed information; and (b) be accompanied by a non-refundable prescribed fee. (3) A person falsely holding out its products or services to be accredited by the Accreditation Authority is guilty of an offence."

The United Nations has enacted the *UNCITRAL Model Law on Electronic Signatures*, which provides guidelines to help countries draft their own electronic regulating statutes. Article 1 of the *UNCITRAL Model Law* defines electronic signatures as:

> [D]ata in electronic form in, affixed to or logically associated with, a data message, which may be used to identify the signatory in relation to the data message and to indicate the signatory's approval of the information contained in the data message.[65]

The *UNCITRAL Model Law* highlights the purpose of an electronic signature as being similar to that of an ordinary signature which is currently accepted.[66] It affirms identity, confirms knowledge of the contents of that document, and signifies the approval thereof.[67] It can then safely be deduced that an electronic signature on an electronic will serves the same purpose as a signature on a paper will.

It is worth noting, however, that an electronic signature can be encrypted to prevent any changes after the document has been signed electronically. In essence, it protects the contents of a document from being altered after the testator has signed the document.[68]

We agree with the view that the definition of "electronic signature" is broad enough to include digital signatures (not defined or mentioned in *ECTA*) and advanced electronic signatures.[69] According to Smedinghoff:

> Digital signatures are one of the most promising information security measures available to satisfy the legal and business requirements of authenticity, integrity, non-reputability and writing and signature.[70]

We submit that it is clear that electronic signatures and digital signatures are intended to secure the authenticity of a document and can be used interchangeably. Proceeding from the definition, scope and purpose of electronic signatures, we now discuss their creation and consider their reliability.

4.1.2.1 Digitised signature

A digitised signature is a manuscript signature that has been read by a computer and transformed into digital format.[71] A signer may create a digitised signature by scanning a manuscript signature that will produce a

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65 *UNCITRAL Model Law on Electronic Signatures* (2001).

66 Article 7 of the *UNCITRAL Model Law on Electronic Commerce* (1996).

67 Article 1 of the *UNCITRAL Model Law on Electronic Signatures* (2001).

68 Heyink 2014 https://www.lssa.org.za/wp-content/uploads/2019/12/LSSA-Guidelines_Electronic-Signatures-for-South-African-Law-Firms_October-2014.pdf 17.

69 Heyink 2014 https://www.lssa.org.za/wp-content/uploads/2019/12/LSSA-Guidelines_Electronic-Signatures-for-South-African-Law-Firms_October-2014.pdf 15.

70 Smedinghoff *Online Law* 23.

71 SIGNIX Knowledge Base 2021 https://signix.helpscoutdocs.com/article/107-what-is-the-difference-between-a-digital-signature-and-a-digitized-signaturee280a8.

digital image of the handwritten signature or by writing the signature on a particular computer input device such as a signature pad.[72]

4.1.2.2 Digital signature and public key infrastructure (PKI) technology

These digital signatures are based on asymmetric encryption that uses two keys (which are large numbers produced using a series of mathematical formulae applied to prime numbers), which are related to one another by algorithmic functions.[73] One key can be derived from another, but it could take more than five hundred years to derive one key from the other if it is 2 048 bits long.[74] Of the two keys, one is private and the other is public. The public key is accessible to people who wish to authenticate the identity of the person using the private key or decrypt messages encrypted using the private key. However, the only person who can access the private key is the person to whom it was issued and who used it to sign.[75]

In addition to the two keys, the "hash function" can secure the protection of electronic signatures.[76] This mathematical process compresses the electronic message into a message digest or "fingerprint" represented by a hash value. The hash is significantly smaller than the message but is substantially unique to it, and any alterations to the message will result in a different hash value. The different hash value lets us detect when the original message was tampered with. A small act of inserting a spacebar would change the hash value significantly and would allow the parties to a message signed using mechanisms incorporating a hash function to establish whether or not the integrity of the message has been compromised.[77]

It is clear from the preceding text that digital signatures may be very beneficial to users. These benefits include safeguarding the confidentiality,[78] authenticity[79] and integrity of the information.[80] Only the unintelligible ciphertext in transit can be seen and cannot be decrypted. It is

72 SIGNIX Knowledge Base 2021 https://signix.helpscoutdocs.com/article/107-what-is-the-difference-between-a-digital-signature-and-a-digitized-signaturee280a8.

73 Heyink 2014 https://www.lssa.org.za/wp-content/uploads/2019/12/LSSA-Guidelines_Electronic-Signatures-for-South-African-Law-Firms_October-2014.pdf 20.

74 Heyink 2014 https://www.lssa.org.za/wp-content/uploads/2019/12/LSSA-Guidelines_Electronic-Signatures-for-South-African-Law-Firms_October-2014.pdf 20.

75 Heyink 2014 https://www.lssa.org.za/wp-content/uploads/2019/12/LSSA-Guidelines_Electronic-Signatures-for-South-African-Law-Firms_October-2014.pdf 20.

76 Heyink 2014 https://www.lssa.org.za/wp-content/uploads/2019/12/LSSA-Guidelines_Electronic-Signatures-for-South-African-Law-Firms_October-2014.pdf 20.

77 Heyink 2014 https://www.lssa.org.za/wp-content/uploads/2019/12/LSSA-Guidelines_Electronic-Signatures-for-South-African-Law-Firms_October-2014.pdf 20.

78 Nelson and Simek 2016 *Montana Lawyer* 18.

79 Nelson and Simek 2016 *Montana Lawyer* 18.

80 Schellekens *Electronic Signatures* 25-26.

computationally impractical to forge a digital signature to decrypt the encrypted message within a reasonable period.[81]

Using the hash function, an electronic signature would allow the person to decrypt the communication to detect if the communication in the form of an electronic document has been tampered with. Van Staden and Rautenbach are of the view that if science and technology can be used to fulfil the writing requirement, then legislation should be amended so that it does not prevent electronic wills from being accepted.[82]

How then can these developments of the 4IR be applied to testate succession? We answer this question in the discussion that follows.

4.2 Practical incorporation of 4IR innovations into testate succession

This contribution will now attempt to create a synergy between the 4IR, the *Wills Act* and *ECTA*. We will first analyse how each statute fails to respond to the 4IR. We submit that the *Wills Act* is unresponsive to 4IR because it does not assist modern testators in understanding what exactly is required of them to fully benefit from this statute in a changing world. They must assume that a will should be in writing from other words used in the statute, and this implication tends to be understood in the narrow sense: this means pen and ink on paper.

It is submitted that members of society can use computers and other smart devices to execute their wills electronically. In fact, computer applications software such as Microsoft Word enables a user to create a written document. However, at present, the documents are usually printed out and signed by pen for the valid execution of a will. These smart devices can create and store the information without printing.

Resources are available to facilitate the execution of a will that is not handwritten or printed out. *ECTA* shows that in theory section 2(1) of the *Wills Act* can be fulfilled electronically, facilitated and regulated by *ECTA*, if its scope is permitted in testate succession. A testator can use a computer or smartphone to draft a will. This use meets the writing requirement in *ECTA* read together with the *Wills Act*.[83] Then the electronically generated and stored will can be signed by both witnesses using digitised signatures. The testator can seal the document, using his digital signature with a hash function using his public key. The testator can send it to a legal practitioner or any trusted person who will decrypt it using the testator's private key upon his death.

81 Reed *Internet Law* 185.
82 Van Staden and Rautenbach 2006 *De Jure* 592.
83 Hofmann 2007 *SALJ* 262.

When all the formalities have been complied with, the issue of storage arises. To secure the electronic will the legal practitioner or trusted person can use a database, defined as an organised collection of electronic software or tools that is used to store information.[84] Alternatively cloud storage can be used. Cloud storage is a computer model that stores data on the internet using a cloud computing provider such as Microsoft. This kind of storage allows for anytime and anywhere data access and recovery.[85]

It is submitted that the two statutes combined could benefit society more than when they apply separately. Resources and authentication processes and signatures are available that offer similar if not more protection than a traditional signature. Reform is therefore necessary to avoid obsolescence. This reform can be encouraged by the initiatives taken in other jurisdictions such as the USA.

4.3 Lessons from the USA

The formalities to be complied with for the execution of a valid will are not unique to South Africa but are common in the legislation of other jurisdictions. In the USA the Uniform Law Commission has unveiled a new legislative product, the *Uniform Electronic Wills Act* (*Uniform Act*). Promulgated in 2019, the *Uniform Act* offers a mechanism for formalising wills that testators create on a computer or other portable device and never print out on paper. In terms of this legislation a testator can execute a will by signing it electronically, in either the physical or the virtual presence of witnesses. The testator can then store the will on a data file, or with a firm offering electronic will storage services, until the time when it matures.[86]

The *Uniform Act* defines an electronic will as a will executed electronically in compliance with section 5(a).[87] Section 5 addresses the execution of an electronic will and reads as follows:

> (a) Subject to Section 8(d) [and except as provided in Section 6], an electronic will must be:
>
> (1) a record that is readable as text at the time of signing under paragraph (2);
>
> (2) signed by: (A) the testator; or (B) another individual in the testator's name, in the testator's physical presence and by the testator's direction; and
>
> (3) [either: (A)] signed in the physical [or electronic] presence of the testator by at least two individuals [each of whom is a resident of a state and physically located in a state at the time of signing and] within a reasonable time after witnessing: [(A)] [(i)] the

84 Njotini 2013 *PELJ* 455.
85 Njotini 2013 *PELJ* 461.
86 Hirsch and Kelety 2020 *Probate & Property* 1.
87 Section 2 of the *Uniform Electronic Wills Act*, 2019 (the *Uniform Act*).

> signing of the will under paragraph (2); or [(B)] [(ii)] the testator's acknowledgment of the signing of the will under paragraph (2) or acknowledgement of the will[; or (B) acknowledged by the testator before and in the physical [or electronic] presence of a notary public or other individual authorised by law to notarise records electronically].

The comments under section 5 make it clear that it does not abolish the Uniform Probate Code 2-502, which requires a will to be in writing. The drafters indicate that "[a]ny reasonably permanent record is sufficient". The *Uniform Act* requires that the provisions of an electronic will be readable as text and not as computer code, for example, at the time the testator executed the will. The *Uniform Act* incorporates the requirement of writing by requiring that an electronic will must be readable as text.

The drafting committee of the *Uniform Act* elaborated upon the concept of writing by considering the Ohio case of *In re Estate of Javier Castro.*[88] where the court was confronted with an electronic will. Mr Castro wanted to make a will in hospital after he refused a blood transfusion. At the time Mr Castro had neither a pen nor paper. He used a Samsung "S Note" application, where one can write with a stylus, to create the will. He signed the will on the tablet, both his brothers signed, and a nephew signed as a third witness. The tablet was password-protected. The relevant parties testified that the printed paper copy was the exact version of the will that Mr Castro had signed on the tablet.

The questions that the court had to answer were whether the will was in writing; whether it was signed; and if it was the last will and testament of Mr Castro. However, under the *Uniform Act* these questions are not whether the writing exists but whether the testator signed the will and the witnesses attested it according to section 5. It should be noted that the decision to retain the writing requirement means that electronic wills cannot be made using audio or visual recordings.

In *Castro* the testator signed his name as an electronic image using a stylus. A signature in this form is a signature for the purposes of the *Uniform Act*. The definition of "sign" includes a "tangible symbol" or an "electronic symbol or process" made with the intent to authenticate the record being signed.[89] Thus a typed signature would be sufficient if typed with the intent that it be a signature. A signature typed in a cursive font or a pasted electronic copy of a signature would also be sufficient if made with the intent that it be a signature. As e-signing develops, other types of symbols or processes may be used, with the critical element being that the testator intended the action taken to be a signature validating the electronic will.

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88 *In Re Estate of Javier Castro* (Lorain County Court of Common Pleas) (unreported) case number 2013ES00140 of 19 June 2013.

89 Section 1 of the *Uniform Act*.

Section 5(3) permits witnesses to be either physically or electronically present. This provision allows for the possibility of executing a will online. Thus online presence, through webcam and microphone, will be acceptable when the question of the presence of witnesses arises. The witnesses must sign within a reasonable time after witnessing the testator signing or acknowledging the will's signing.

5 Conclusion

Technological developments have moved society into a digital sphere. Evolution and innovations in this era have introduced new ways to communicate. This contribution has established that a will is a document that communicates a testator's wishes regarding the distribution of his assets upon his death. We have indicated above that society has moved through three different industrial revolutions to arrive at the present 4IR. This current revolution threatens the *Wills Act* with obsolescence. Therefore, for testate succession to be responsive, we propose that *ECTA* play a central role in data communication through a will. In exploring this role, we argue for the use of PKI technology. It is argued above that resources are available but the static legislative framework is a hindrance in advancing the law that governs wills into the digital era. The USA has promulgated the *Uniform Act* 2019, which regulates electronic wills. It is clear then that electronic wills are a possibility that the South African legislature must heed. Electronic wills can become a reality by ensuring a synergy between the *Wills Act* and *ECTA* by amending both Acts or introducing new legislation.

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List of Abbreviations

4IR	Fourth Industrial Revolution
3D	three-dimensional
B C L Rev	Boston College Law Review
ECTA	Electronic Communications and Transactions Act 25 of 2002
PELJ	Potchefstroom Electronic Law Journal
PKI	public infrastructure technology
SA Merc LJ	South African Mercantile Law
SALJ	South African Law Journal
TSAR	Tydskrif vir die Suid-Afrikaanse Reg
UNCITRAL	United Nations Commission on International Trade Law
USA	United States of America