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BORN-DIGITAL RECORDS AS TRUSTWORTHY ORIGINALS. COMPARING LEGISLATION

Abstract:

Managing digital records exceeds digitizing paper records. Often records are created via computer, are thus born-digital, get printed, signed, posted, scanned and stored in digitized form. The paper "original" of the digitized record is destroyed, the born-digital "original" deleted. Common practice! Legislation changes towards acceptance of born-digital records as original records. Economic and managerial efforts can be made when records-creation, records-management and archives-management are (fine-)tuned or merged, within the context of demands on authenticity and integrity. The objective of this article is to give insight in the present state in several jurisdictions (Dutch, German and Slovene). Hereby especially definitions of "written" and "authentication" serve as objects of comparison, as well as the "original-born-digital-textual-record" as legal proof. This paper will not focus on technical demands, but on possibilities in legislation.

Key words:

born-digital documents, archival legislation, records-management, archives-management

Izvleček:

Izvorni digitalni dokumenti kot zaupanja vredni originali. Primerjava zakonodaj

Upravljanje z digitalnimi zapisi je več kot digitalizacija zapisov na papirju. Pogosto dokumenti nastanejo s pomočjo računalnika in so torej prvotno digitalnega izvora, vendar jih kasneje natisnemo, podpišemo, pošljemo po pošti, skeniramo in shranimo njihovo digitalno obliko. Papirni "original" digitaliziranega zapisa uničimo, izvorni digitalni "original" pa izbrišemo. Pogosta praksa! Spremembe zakonodaje gredo v smeri sprejemanja zapisov digitalnega izvora kot originalov. Ekonomske in upravljavske poteze pa bodo na vrsti, ko se bodo - z upoštevanjem določil o avtentičnosti in celovitosti - ustvarjanje zapisov, upravljanje z njimi in upravljanje z arhivskim gradivom uskladili ali celo združili. Cilj prispevka je predstaviti trenutno stanje v nekaterih državah (Nizozemska, Nemčija in Slovenija), še posebej primerjave definicij "napisanega", "avtentifikacije" ter "izvornega digitalnega tekstovnega zapisa" kot pravnoveljavnega. Prispevek se ne osredotoča na tehnične zahteve, ampak na možnosti v zakonodaji.

Ključne besede:

izvorni digitalni dokumenti, arhivska zakonodaja, upravljanje z zapisi, upravljanje z arhivskim gradivom

INTRODUCTORY REMARKS

Computer created and thus born-digital textual documents are often not seen as the "original" documents when used as legal evidence. Even E-signed documents often do not happen to be born-digital documents supplied with an E-signature, but instead are e-signed digitized documents most of the time. The latter actually means digitized representations of born digital documents that have been printed on paper,

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signed, photocopied and scanned. Digital documents are thus actually re-digitized born-digital documents (sic!). This procedure seems to be a normal practice in many countries, including Slovenia, Germany and the Netherlands, despite the fact that legislation supplies tools that legitimatize a different view on this matter.

The central question seems to be: "Why is it so difficult to admit born-digital documents the status of "original," "real" or "authentic" from a legislative point of view?" Which obstacles have to be overcome to meet these acquirements? In Germany, for example, the obstacle is the legal focus on files (*Akten*) instead of on documents - as a specific form of a record (*Unterlagen*) - in the context of legal proof and trustworthiness. Dutch legal proof seems to be more focused and fixed on the document itself. In other words: Which object is to be signed with a digital-signature: the file or the document? As it seems Slovenia also focuses on the document and clearly relates, for example, the e-signature to e-data and an e-message. In Slovenian archival legislation the document and the archival record are the main objects.

Although there are many similarities between the countries and their specific legislation, for example with respect to E-signatures, some other objects and subjects seem to differ quite a lot. For example in respect to the meaning of the word "written" or "in writing" and the scope of the word "archives." Thus: Is the legal status of a written document in Germany, the Netherlands and Slovenia exchangeable? And when are there any differences in constitutional or administrative legislation compared with civil and/or criminal law? Therefore: Do the demands on the form of documents meet the demands of born-digital documents to accept the latter as "original", "real" and "authentic" documents?

LIMITING THE SCOPE OF THE SUBJECT

The subjects that matter in this case can only be touched lightly. They concern some aspect on the present state of play regarding digitization. It goes without saying that I will focus present way in how we cope with a digital work-flow in general. Perhaps even more important: how could a digital work-flow look like when actions that matter, are integrated in the organizational context of public or private administration. What opportunities are provided by legislation already and what are the documentary demands? I will try to compare aspects of Dutch, German and Slovene legislation on this matter.

Herewith I will draw attention to (E-)signatures and the "status" of born-digital documents. The meaning of the words "in writing" seems to be very important in this case. Since: What is it, that we call "written"? Should indeed all "written" documents be created with feather and ink on a certain information carrier like parchment or paper? Are there any alternatives? And what way does legislation already direct us to?

Then of course the consequences of all this for us, archivist, when we consider born-digital documents as being "original", "real" and "authentic" records. What need we do, to model archival management and archives policy to meet the requirements?

We need light, if it only were that the most secure steps are not made in the dark. Where it comes from does not matter: from the West, the East, the South. Does the administration and registry shed light into the archives or vice versa?

In accordance with born-digital documents I need to limit myself. We all know that archival records may have any kind of form and any kind of shape. Archival records do not necessarily need to be textual documents. Pictures and schemes can be archival records as well. The same is due for objects. Nevertheless, I will focus on textual documents solely. The one and only reason for this limitation is that legislation does not supply any demands on non-textual born-digital or digitized documents. Except within the context of copyrights.

The question if, as it is called, we are "going digital" is a non-question. We have been digital for a long time. Since the moment we started creating text-documents "with the little help from our friends" called computers. The point is though, we are not always aware of the fact that we create born-digital documents.

A "NORMAL" WORKFLOW

For some time now we digitize original non-digital documents. In short: we create a document and sign it. Making a copy or Xerox is a daily task. The same is due for sending the "original" in a nice paper envelope to the receiver of the message. But then: we scan the copy and eventually destroy the document that has been scanned. The digitized document, i.e., a certain representation of the "original", is to be stored in some kind of digital repository. The point is that we do exactly the same with born-digital documents. One can question if this is wise.

The legal basis of digitized documents is increasing. I do not see any problems here, and let this issue for what it is since digital documents, if provided by an e-signature, can now serve as legal proof.

We know that e-data (processing and interchange) over the last few years has taken a foothold in the execution of many processes. Apart from via computer created documents: Who does actually still write with a feather on handmade paper? Have we not used computers for a long time since creating documents? So, are not our documents then already born-digital? Does this not actually mean that for some time now our born-digital documents should be considered "originals?" And the answer from the legal point of view is: Yes indeed it is in the Netherlands, it seems in Slovenia, but in Germany it does not ... yet. I will come back to this later.

So, although we create born-digital documents, obviously we are not completely ready to implement the effects of it in the work-flow and administration yet. Implementing though is one thing, accepting is something completely different.

Unfortunately most of the time we create documents digitally. Print them on nice paper and sign them. To be posted, the representation of the document needs to be folded and enveloped, and off it goes. A copy or Xerox of the born-digital document often digitized or scanned seems the last phase in this flow.

Would it not be rational, besides logistically and economically interesting, to change our living memory? Even going one step further … why printing? … Have we neglected the presence of the phenomenon that we call e-mail? In some countries obviously we did, in others not. Theoretically speaking all countries that accepted the European Union demands and regulations on E-signatures have implemented communication via e-mail. In practice though we keep on printing and sending the old way.

Even more interesting. Why digitize or scan a print or representation of a document that has been created digitally? Ok, the formal and obvious difference

between the two is the signature. But, have we not got legislation on e-signatures? Besides: are all documents that we sign, documents that indeed need to be signed … even from a legal point of view?

I argue in favor of acceptance of born-digital documents as originally written documents indeed. For public organizations and private ones as well. This means that I question printing and scanning of born-digital documents. This does not mean though that I question scanning as such. There will always be documents that have been delivered to us in physical form and these documents should be digitized or scanned to make sure a file is "complete"[1] within the course of work-flow. In this context one can go on focusing on e-files. Here though I will leave this matter for what it is.

LEGISLATION AND THE "ORIGINAL" DOCUMENT

Also leaving the academic discussion for what it is, whether a (born-)digital document is or can be an "original" document, one can see many distinctions in countries' legislations. But, there are also similarities. The most significant ones are to be found in the rules on e-signatures.

The subject of e-signatures has been an object of many thoughts, conversations and writings. In the Netherlands, Slovenia, as well as in Germany, legislation on e-signatures exists. In all three countries, e-signature can be used within different jurisdictions, i.e., civil-law and administrative law. In the Netherlands even in criminal law[2].

A German article by Steffen Schwalm in "*der Archivar*"[3] supplies us with many tools for implementing the e-signature and it also points at legal and technical aspects. I have no reason to add something to his statements. Except for one thing. I have my doubts if the German focus on files (*Akten*) can be considered tenable over time.

This means that … as long as the File is a physical one and not a virtual concept where e-documents are contextualized via mutual metadata, it does not carry us a step further. The file as a physical concept should, I even think, must, be laid *at acta*.

In giving way to "link" documents via metadata, one can also state that signing the file as object is not the matter, but signing the documents that make the virtual file. Actually, Steffen Schwalm embraces this idea by writing about storing in the context of files. How administration, registration, registry and archives cooperate is a different question. I will come to that later.

Upon all three countries' legislations here analyzed, and I focus on public organizations only, is the transference of and communication via digital documents. It goes without saying only when these documents meet the demands on trustworthiness, authenticity, integrity and usability[4]. But; interestingly enough in

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[1] *Although one can question if real completeness is desirable and/or feasible, one can also question what completeness means.*

[2] *Since I have not been able to track down all Slovene legislation in either English or German translation, I have no knowledge of the focus on e-signature within Slovene criminal-law.*

[3] *Steffen Schwalm, Elektronich Signierte Dokumente im Zwischen- und Endarchiv. In: Der Archivar 63 (Februar 2010), 27-34.*

[4] *I here use the four elements as mentioned in the international standard on records management: ISO 15489.*

Germany this seems not to count for born-digital documents but for digitized documents only. The German Administrative Procedure Act in § 3A writes: "Where legal provisions stipulate that a document be in written form, this may be replaced by electronic form […]"[5] This means that an "electronic form" obviously is not a "written from." And this seems to be supported by § 37 in the same law, where it says: "An administrative act may be issued in written, electronic, verbal or other form." This again means that obviously "written" and "electronic" are distinct and are treated as different objects. More or less the same can be found in the Slovene Electronic Commerce and Electronic Signature Act, art. 12:3 and 13:1.[6] Respectively the words "original" and "in writing" do not seem to apply to born-digital documents.

This means that in Germany, at least in this jurisdiction, there is hardly any legal basis for applying legal status of proof to (born-)digital documents. Hardy. While German Code of Civil Procedure states in § 371a on legal proof of digital documents, that for e-documents, "created and maintained by public organizations […] within the context of the demands on the form of a document as such […] the regulations on legal-proof […] should be applied"[7].

In a way the same is stated in the Slovene Electronic Commerce and Electronic Signature Act, articles as above, where "the requirements [of certain data to be presented or retained in the original form or in writing], is met by the message in the electronic form."

DEFINING "IN WRITING"

In the Netherlands, clauses as above on the level of documents and legal proof do not exist. In Dutch Civil Law it has only been stated that an e-signature fulfils the same demands as a "written" signature.[8] Interesting is that on the matter of harmonizing the use of e-documents and "written" documents, the definition by law of the word "written" has been changed in the Netherlands. As far as I know in Germany the word "written" has not been defined in legislation at all. In German Civil Code § 126 thus not the word "written," but "in written form" has been explained. It says: "if written form is prescribed by statute, the document must be signed by the issuer with his name in his own hand, or by his notarially certified initials."[9] This means that "written" or "in writing" reflects a manual act where a pen (and obviously paper) are indisputable.

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[5] *Administrative Procedure Act (Verwaltungsverfahrengesetz) § 3A. English translation at: www.iuscomp.org/gla/statutes/VwVfG.htm (all websites mentioned in this article have been consulted between January 25 and 27, 2012).*

[6] *The Slovene Electronic Commerce and Electronic Signature Act (Zakon o elektronskem poslovanju in elektronskem podpisu (ZEPEP)), artt. 12:3 and 13:1. English translation at: http://e-uprava.gov.si/eud/e-uprava/en/ECAS-Act-in-English.pdf.*

[7] *Code of Civil Procedure (Zivilprozessordnung) § 371a. More or less the same applies for private documents. There is no English translation available on official German-law sites.*

[8] *When a valid certificate is applied, that goes without saying. Dutch Civil Code, Book 3 (Burgerlijk Wetboek, boek 3), art. 15a.*

[9] *German Civil Code (Bürgerliches Gesetzbuch) § 126. In § 126-a, also the "electronic form" has been mentioned: "if electronic form is to replace the written form prescribed by law, the issuer of the declaration must add his name to it and provide the electronic document with a qualified electronic signature in accordance with the Electronic Signature Act [Signaturgesetz]". English translation at www.gesetze-im-internet.de/englisch_bgb/englisch_bgb.html#p0362.*

For Slovenia I have not been able to check this since the Public Administration Act[10] does not contain regulations regarding creation and maintenance of documents. The Government of the Republic of Slovenia Act does mention the issuing "of written orders on appointments and dismissals and in administrative matters within its competence and on other specific matters,"[11] but does not define the word "written."[12] Both the General Administrative Procedure Act[13] and the Slovene Civil code[14] in English or German translation seem to be absent on official Slovene sites on legislation. The implementation of e-Government in Slovenia by the way, seems promising on this point.[15]

Back to the Netherlands. In Dutch legislation the definition of writing has changed from "written," in the above mentioned meaning of a manual act and using pen and paper, to a definition where not the writing as an act, but "writing" as object is the subject. This means that "written" legally is supposed to be "in readable letters."[16] This again means that an e-document (a digitized document as well as a born-digital document) is a "written document" as long as its content is "text." This means that the form is not important anymore: word-document, SMS-message, excel-sheet, database, PDF, JPG, photo or whatever (re)production of a "text in readable letters" is thus a form of writing. When e-signature is added and applied to this document, it gains legal status and legal proof as well. It goes without saying that this has consequences for records- and archives management.

A paradigm-shift which also, though slowly, takes place in Germany. Again, on Slovene legislation I have not been able to find the proper sources.

In Germany, for example, a recent addition in the German Civil Code of § 126-b on the word "textual form" ("*Textform*") has been made. It reads: "If text form is prescribed by law, the declaration must be made in a document or in another manner suitable for its permanent reproduction in writing […]"[17]. By adding the "permanent reproduction in writing" to legislation, in fact the way is open in acceptance of born-digital documents as "original", "real" and "authentic" documents.

(RE)DEFINING THE ARCHIVES

When we focus on the question of permanent archiving, it is due to find ways in applying techniques and means as soon as possible after creation of a born-digital document. Long term and permanent archiving in the meaning of adding preservation techniques, should actually start before a born-digital document has been created

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[10] *Zakon o Upravi.*

[11] *Government of the Republic of Slovenia Act [Zakon o vladi za prevod], art. 21. English translation at: www.gsv.gov.si/en/legislation/legal_acts_in_force/.*

[12] *At least not in the text, perhaps it does in the explanatory memorandum.*

[13] *Zakon o splošnem upravnem postopku (uradno prečiščeno besedilo) (ZUP-UPB1).*

[14] *Obligacijski zakonik (oz).*

[15] *Www.mju.gov.si/fileadmin/mju.gov.si/pageuploads/SOJP/PDF/e-Gov_Brosura_NET_PRINT.pdf*
Where unfortunately the legal states of digital documents are not discussed, but only the e-signature is mentioned.

[16] *The explanatory memorandum of the Act on Online Administrative Business (Memorie van toelichting bij de Wet elektronisch Bestuurlijk verkeer), leading to addition of articles in the Administrative Law Act (Algemene Wet bestuursrecht). English translation at: http://right2info.org/resources/publications/Netherlands-Administrative-Law-Act-Wettekst-Awb.pdf/view.*

[17] *German Civil Code (Bürgerliches Gesetzbuch) § 126-b. English translation at www.gesetze-im-internet.de/englisch_bgb/englisch_bgb.html#p0362.*

indeed. Imagine we agree upon this, than it is legitimate to think about increasing the scope of at least the meaning of the word "archive" and at least in legislation.

The Dutch Archives Act (also called Dutch Public Records Act) for example, reads that all created and received documents by public and semi-public organizations (administrative authorities) are legally archival records.[18] No matter when appraisal and selection leads to the decision to destroy the documents at last or to transfer them so they will be kept permanently. It also means that "archive" in Dutch legislation is not limited to "documents stored in an archive", i.e., an organization that keeps and maintains documents permanently.

More or less the same has been done in Slovenia. Since some years now the Archives and Archival Institution Act has been replaced by the Protection of Documents and Archives and Archival Institutions Act[19]. Although the Slovene Archives Act distinguishes documents from archives, were archives are "documents of permanent significance," the interesting elements lay -within the scope of this article- in the creation, capturing and maintenance of born-digital documents.[20]

Compared to the several archives acts in Germany[21] the scope of them is indeed on all kinds of documents (thus, not limited to text), but are limited to the documents that are supposed to be kept permanently and thus are actually kept in "an archive" (as defined above).[22] Although I did not focus on other archival legislation in or outside the European Union, I can imagine that in many countries a more or less same kind of limited meaning is given to the scope of the archives act in question.

Anyway, in such a situation, in my view, the "force" of the archival institution is to limited to give way in to fulfill their legal task in taking care of the documentary information of an organization (i.e., a State, a province, a public or private organization, mostly by or via inspection and or monitoring records-management).

Without doubt there are not only cultural reasons to broaden the scope of "the archive". Time, money and efforts can be saved when permanent preservation of documents and archival documents starts before the information object was even created. No matter if they have permanent value or not and thus apart from appraisal. Even documents that are not transferred to "an archive" are stored and maintained for some years, often more than fifty indeed.

Besides, when measures are not taken, what about the authenticity, integrity and usability (over time) of records and documents in question? In that case it seems logical to broaden the definition of an "archive" (no matter in what way) in the same way as with the definition of "written". To give an example of the latter. In Germany an SMS-message is a form of oral-communication. Oral-communication is not seen as

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[18] *Dutch Archives Act / Public Records Act 1995 (Archiefwet 1995). English translation at: http://en.nationaalarchief.nl/sites/default/files/docs/wetten-regels/Dutch_Public_Records_Act_1995.pdf.*

[19] *See the Archives and Archival Institutions Act (AAIA) (Zakon o arhivskem gradivu ter arhivih) English translation at: www.arhiv.gov.si/fileadmin/arhiv.gov.si/pageuploads/razno/AAIA.pdf and the Protection of Documents and Archives and Archival Institutions Act. (Zakon o varstvu dokumentarnega in arhivskega gradiva ter arhivih (ZVDAGA)) English translation at: www.arhiv.gov.si/fileadmin/arhiv.gov.si/pageuploads/zakonodaja/ZVDAGAA.pdf.*

[20] *See especially article 8.*

[21] *Since Germany is a Federative Republic, there are 17 Archives Acts in force. 16 for the federative states, 1 for the federation as a whole.*

[22] *Cf. the German Federal Archives Act (Bundes Archivgesetz). English translation at: www.bundesarchiv.de/bundesarchiv/rechtsgrundlagen/bundesarchivgesetz/index.html.en.*

a document in the context of German Archives Acts. Since we know that the German *Bundeskanzler* prefers to write SMS-messages, these SMS-messages will never be "archived" since they formally "do not exist." A black-hole in the archives for future historians, other scientists and users of records in those archives.

AUTHENTICITY AND INTEGRITY OF A DOCUMENT

According to Dutch, German and Slovene legislation, one can state that born-digital documents more and more gain a status of "original" documents. The only necessary condition to implementation is to get rid of the distinction between written and electronic and focus on text and non-text. Multi-media containing text could be seen as text.[23] Applying this could mean that we see light at the end of a tunnel. Indeed, it also could be oncoming traffic. I think though that is not the case.

When we do all this, instead moves have to be made to secure maintenance and management over time and space. No matter thus, in repetition, if the retention of the document is 2 seconds or 200 years, since apart from the question of duration, documents always need to be authentic, integer and usable for the time they are supposed to be maintained and managed. This might, for example, mean we have to take measurements in concerning notepaper or letter paper.

Notepaper and letter paper often contain beautiful colored logos and pre-printed text. Often immense stocks are stored and waiting for text to be added and then send. When logos and other standard text should be added and integrated in the template of the document, i.e., in the template of the not-yet-born-document and thus in the document-processing system, a lot of money can be saved. For example in case of reorganization of the organization, demands for a different house-style or whatever reason logo or pre-printed text needs to be changed, no bulks of stock notepaper or letter paper needs to be destroyed or thrown away. Also from the environmental point of view integrating logos and pre-printed text in templates might be taken into consideration. Here though, interesting is that integrating mentioned elements in the template of a document might increase the authenticity of a digital-born document. Imagine a born-digital document to be stored without the elements we know in pre-printed notepaper and letter paper, leads to the situation that a print of the text at such paper, leads to actual differences in the look and even content, and there with the legal use of proof of the document in question. It means that a born-digital document which has been accepted as being the "original", does not "look" alike the re-presented and printed version on pre-printed notepaper or letter paper. Imagine then going to court …. Interesting enough thus, so I think, to assure that your stored born-digital document contains exactly the same features as the printed and send copy.

It goes without saying that even this option asks for research. Especially since over the last couple of hundred years we have accepted that a copy of a send note of letter, looked different from the send document itself. If it only is that we kept the copy in a copy book and that the legal demands on "original" and "copy" were different. Primary thus, implementing logos and stuff in the template of the born-digital document, asks for a different way in thinking and over thinking the matter.

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[23] *They actually belong to what Walther Ong defined as … new literacy.. These documents belong to, what Walter Ong described in the 1960, saw as a third form of literacy. Cf. Walter Ong …..*

WHAT AN ARCHIVIST COULD DO, CAN DO, …. SHOULD DO!

A moralizing paragraph. Thinking leads to acting. Acting with respect to ourselves. Regarding our position related to legal order. Making a mental leap, mirror ourselves in the opportunities legislation already offers. We, archivists could be the triggers, could make a start. Who obtains a Twitter account and does not want loads of followers?

Often enough we are faced with complete re-ordering of records and files after they have been transferred to some archival institution. For whatever reason we are more or less used to do this. In a way it even seems to be one of the objectives made by famous Muller, Feith and Fruin in their 1898 *Manual*. But, would it not be wise, in respect of the original meaning of the principle of provenance and the *Respect des fonds*, to maintain the original order and "just" to supply the sets of metadata (created or added in the phase of creation and maintenance of documents at administration or registry) with new sets of metadata? Indeed, not only the "new user (scientists, genealogists and others) but also "old users"(the "original" creators and owners) will be served in finding their way through the bulks. In respect to born-digital documents it would mean that the original context in which these documents were created could serve in maintaining the principles of authenticity, integrity and usability. Principles that need to be taken care of will documents not lose their meaning as legal proof. Besides, also their historical proof would be served in this way.

I thus suggest that increasing the scope of "the archive" could be very helpful in creating a real "records continuum". Not only as a theoretical and academic concept, but also as an organizational and managerial concept. This then could be one of the new goals and tasks of archivists, to keep and maintain born-digital documents and their metadata in an unbroken custody from creation till destruction or "transfer". Where "transfer" perhaps will lose its meaning as a physic action. "Transfer" could become a concept in change of responsibilities only, whereas the bits and bytes remain where they are: in the repository where they were stored after creation.

POVZETEK

IZVORNI DIGITALNI DOKUMENTI KOT ZAUPANJA VREDNI ORIGINALI. PRIMERJAVA ZAKONODAJ

Upravljanje z digitalnimi zapisi je več kot digitalizacija zapisov na papirju. Pogosto dokumenti nastanejo s pomočjo računalnika in so torej prvotno digitalnega izvora, vendar jih kasneje natisnemo, podpišemo, pošljemo po pošti, skeniramo in shranimo njihovo digitalno obliko. Papirni "original" digitaliziranega zapisa uničimo, izvorni digitalni "original" pa izbrišemo. Pogosta praksa!

Spremembe zakonodaje gredo v smeri sprejemanja zapisov digitalnega izvora kot originalov. Ekonomske in upravljavske poteze pa bodo na vrsti, ko se bodo – z upoštevanjem določil o avtentičnosti in celovitosti – ustvarjanje zapisov, upravljanje z njimi ter upravljanje z arhivskim gradivom uskladili ali celo združili. Kratka analiza nizozemske, nemške in slovenske zakonodaje na področju izvornih digitalnih dokumentov vodi k sklepanju, da obstaja med državami veliko podobnosti, a tudi veliko zanimivih razlik. Te so še posebej opazne pri konceptih in definicijah "pisnega" in "arhivskega". Glavni sklepi, ki jih je avtor podal, so: originalni digitalni zapisi,

natisnjeni za namen skeniranja in digitaliziranja, izgubijo celovitost in verodostojnost; tiskanje je potrebno samo, ko infrastruktura (pošiljanje in prejemanje) (še) ni obvezna; rezultat je, da mora biti "pisemska predloga", ki vsebuje logotip organizacije idr., nedeljiva in sestavni del zapisa; predloga tako ne sme biti natisnjena vnaprej, ampak mora biti v zapisu; ko je ustvarjanje zapisov oblikovano, se bosta upravljanje z dokumenti in na koncu upravljanje z arhivskim gradivom soočala z novimi možnostmi; upravljanje z dokumenti se bo na ta način premaknilo od repa življenjskega cikla dokumenta do sprejemne pisarne; arhivi bi se tako morali bolj posvetiti sistemom za upravljanje z dokumenti in sprejeti zapise v kontekstu sistema za upravljanje, ki ga uporablja organizacija; provenienca je s tem v kontekstu in ni kasneje rekonstruirana; arhivsko delo bi bilo potemtakem dodajanje metapodatkov.