

Beyond Full-Text and Features

Towards a Role for Hypermedia in Law

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1. Introduction

At a recent conference in the United Kingdom, a speaker prefaced his talk by cautioning his audience against the perils of predicting the future. He displayed a picture of a bubble car heralded many years ago as the means of transport of the future. He added that to his disappointment he did not spot a bubble car on his way to the conference.

In a previous issue of this journal, Jon Bing [Bing 1992] revealing his passion for science fiction novels makes a similar point. Today's communications are based upon e-mail instead of, as one science fiction author predicted, rocket mail or as Bing put it "r-mail".

The lesson to be learnt here is clear. Where technology is concerned it is prudent to avoid committing yourself to visions of the future! With such sobering thoughts in mind, I shall tentatively explore a role for hypermedia in the law rather than state one.

The last twenty to thirty years [Nunn-Price 1992] have witnessed a staggering rise in the amount of legal information, mainly case law and statute, available in electronic form. While this is undeniably a tremendous achievement, most law databases are simply electronic versions of the printed original. The format and structure of the databases are largely dictated by the printed form. This leads to a curious state of affairs where product developers are trying to apply hypertext and hypermedia technology to electronic versions of printed texts. Here it will be argued that in order to fully exploit the potential offered by hypermedia we need to look at applying hypertext and hypermedia technology to truly digital documents.

Thus, the essence of the paper is that in order to fully explore the potential application of hypermedia to the law we must examine and, where necessary, re-assess, our understanding of what constitutes,

- a. legal documents, and
- b. collections of legal documents.

Following a brief look at the terms "hypertext" and "hypermedia", the paper will explore our understanding of a legal document by looking at European Community directives in some detail. Our understanding of what constitutes a collection of legal documents will in turn be explored and contrasted with reference to Justinian's Corpus Iuris Civilis and CELEX. Incidentally, CELEX stands for "Communitatis Lex" and is officially described as the "computerised inter-institutional documentation system for Community law" (1). CELEX is available from the European Commission's own commercial host organisation, EUROBASES. More simply put, the CELEX database offers systematic access to Community law. The discussion will then close by suggesting a role for hypermedia in the law.

2. Hypertext, Hypermedia and the Law

While the basic ideas behind what we now know as hypertext are attributed to Vannevar Bush, it was Ted Nelson who coined the actual term [Macaulay 1992, Terret 1994]. It is useful just to remind ourselves again what Ted Nelson understood as hypertext.

By Hypertext, I mean non-sequential writing - text that branches and allows choices to readers, best read at an inter-active screen. As popularly conceived, this is a series of text chunks connected by links which offer the reader different pathways. (2)

With the dramatic increase in computing power, primarily text-based applications began to include graphics and later audio and visual data. In time Nelson's "text chunks" have become essentially "data

chunks" where the data object may be either text, a graphic, sound edits or a video sequence. Hence with time "hypertext" grew into "hypermedia".

It is worth noting that some authors, are careful to distinguish between the terms "hypermedia" and "multimedia", stressing the essentially interactive nature of the hypermedia [Terrett 1993, p. 22] and the fact that multimedia "is not underpinned by the epistemology of hypertext" [Macaulay 1993, p.15].

Seen from a commercial point of view the whole idea of hypertext received a substantial boost when in the late 1980's Apple bundled HyperCard with the MAC computer. By the early 1990's the PC world had its own share of hypertext authoring tools such as Folio Views, HyperWriter and Guide [Fersko-Weiss 1991].

Slowly and surely hypertext features began to appear in many database applications aimed at the legal community. For example, the German legal information producer JURIS GmbH and Context Limited in the United Kingdom, both produced CD-ROMs where the help-screens contained hypertext links. These two developments are in fact a prelude to the inclusion of hypertext links in their respective products (3). The Italian Ministry of Justice has also embarked upon a project to cross-refer statute and case law using hypertext links. Applications such as HYPERTAX are now beginning to appear where hypertext links within the application are the substantial sellable strength of the product and not just a feature.

Bearing in mind some consider "law is hypertext by nature" [Krüger 1992] it is perhaps a little disappointing that there are not more applications which exploit hypertext. After all, the pursuit of cross-references is said to be more akin to how lawyers work with printed materials. Let us not forget however the time scale here. Not only does the rapid pace and development of computer technology tend to fuel a collective impatience, but also legal database producers have spent the best part of 20 years encouraging and cajoling lawyers into legal information management practices, involving complicated retrieval languages, distant and abstract collections of documents, all of which remains foreign to most lawyers. Inevitably, it will take a little time to readjust.

These observations camouflage a very important point, namely that in exploring a role for hypermedia in law it is essential to get behind terms whose understanding is driven largely by technological and commercial developments. To analyse how the technological possibilities help or hinder the way we use and manage legal information.

By taking a broader view of hypertext and hypermedia we shall see that there are many applications and products that although not formally recognised as hypertext or hypermedia products, nevertheless display hypertext- and hypermedia-like attributes. One such example is provided by the CELEX system of databases, which predates the "hype" about hypertext by many years.

Each document stored on the CELEX database is attributed an individual number which is formulated according to a system which we shall look at in more detail later on. The so-called "CELEX document numbers" are the basis upon which documents cross-refer to each other. Although current versions of CELEX require that a document be obtained by entering the document number at the system's command line, the user can nevertheless navigate "different pathways" through "text-chunks".

Similarly, a younger database on the EUROBASES host offers hypertext-like qualities. INFO 92 "is an information system on the completion of the internal market and its social dimension" (4). The database is menu-driven with no possibility - for the moment - of full text searching. If for instance we were to call up the "Future Events" screen we are given a list of EU institutions together with topics the institutions are going to discuss in the near future. Beside each topic there is a number prefaced with the character "#". By entering this sequence of characters at the command line the user jumps straight to the relevant information held in the database on that topic. The database index and the cross-references to national implementing measures can be used in a similar way.

The importance of labouring this point is to question the dominant view that the law as a primarily text-based subject is not suitable for hypermedia applications. If one were to look only at what is commercially available as regards hypertext and hypermedia systems, lawyers could indeed be forgiven for wondering what good it could possibly bring them.

However if we look at the information management possibilities behind the technology, the potential offered by the technology becomes more apparent, not just for teaching [Killingly 1992] but for spreading, exploring and developing the law. Before explaining this point further we need to look at legal documents and collections of legal documents.

3. Legal Documents

What is a legal document? Answers to this question are likely to be various being influenced by such factors as the author's legal background, if any, and the legal system with which they are best acquainted. Some might cite a piece of enacted legislation such as an Act of Parliament, Loi or Gesetz as examples. Others may offer a court decision or cite articles from a Code. Other answers may refer to contracts and so on. However, it is highly probable that all the suggestions will have one thing in common, namely a written or printed format.

The perception of legal documentation and indeed of the law itself is intimately bound with the written word. One talks for instance, about observing the "letter of the law". A discussion on constitutions, certainly in the United Kingdom at least, revolves around the issue of a "written" as opposed to an "unwritten" constitution [de Smith 1981, Finer 1979]. It would be no exaggeration to say that some of the major legal historical developments involved the law and its collection in a written or printed format. Two examples are the growth and development of law reporting in the Common Law tradition and Codification in the Romano-Germanic. The tradition of writing and later of printing enabled the law to be recorded and thereby developed. It effectively laid the foundations for a corporate legal memory.

This is not to say or even imply that non-literate communities were lawless. Not so long ago in rural Ireland, my grandfather's generation bought and sold land with a handshake accompanied by the exchange of sods of earth. While both parties held the agreement to be binding, its duration relied heavily on local memory and thus with time it became difficult to determine who owned what.

This example just serves to remind us that the written or printed word is not necessarily the law but rather represents or gives expression to the law. Thus it might be more fruitful to ask what does the written form of say, a piece of enacted legislation, actually represent? Taking an Act of Parliament as an example or a Loi or Gesetz amending the provisions of a Code, these all may be regarded as the end results of a legislation generating process. The process begins with a formal proposal and goes through varying stages of deliberation, amendment and counter-proposal after which the proposed law is formally enacted by the legislative organs.

It is worth noting that while the enacted legislation is the end product of a creative process, the connotation of finality inherent in the word "end" is not generally appropriate. The enacted legislation will itself be interpreted, modified or even repealed. That is to say that the law represented in the printed form marks a stage in the life of the law, a stage in a dynamic process.

The purpose here is not to answer the question "what is a legal document" or alternatively "what constitutes a legal document" but rather to emphasise that our perception of the law is intimately bound up with the written word, the medium of print. It follows that if the law is to be expressed through another medium, i.e. digital, then our perception of law is also likely to change.

In order to pursue some of these points further it is appropriate to look at a specific example in more depth. As noted above whatever constitutes a legal document is coloured by the legal system the observer comes from. Staying for the time being with enacted legislation, it is fitting therefore to look at a piece of enacted legislation known at least to all European Union Member States: the EC directive.

3.1 EC Directives: An Example of Printed Legal Documents

The question "what is a directive?" is much easier to answer. Largely because we can cross-refer to other legal documents. The Treaty of Rome gives indicators as to a directive's purpose and format.

Article 189 of the Treaty of Rome as amended by the 1992 Treaty on European Union provides for means with which the institutions of the Community can carry out their tasks. One such legal instrument is the directive. On directives specifically, Article 189 states,

A directive shall be binding, as to the result achieved, upon each Member State to which it is addressed, but shall leave to the national authorities the choice of form and methods.

In other words the directives state goals which the Member States are bound to achieve and obliges them to take legislative and administrative measures to do so. The legislative and administrative measures are also referred to as "national implementing measures".

The Treaty of Rome (Article 190) is also specific about a directive's format, maintaining that a directive,

state(s) the reasons on which they are based and refer(s) to any proposals or opinions which were required to be obtained pursuant to th(e) Treaty.

Curiously prior to the Treaty of European Union there was no formal requirement that directives be published in the Official Journal which of course implies (for the present at least) production in a printed format. This "anomaly" [Hilf, 1993 p.5] was redressed by the Treaty on European Union but has led to the equally odd position that the printed form of directives is (unwittingly?) favoured whereas before the Treaties made no distinction.

Nevertheless we are in a position to describe directives as legal documents that have

(a). a purpose

the achievement of a stated goal where Member States can bring about the goal using legislative and administrative means of their choice and

(b). a format

which has a minimum specific information content, namely

Title	- Normally full and descriptive.
Preamble	- Contains the stated reasons for the directive and gives references to preparatory documents.
Articles	- Contains the legal points in the directive. A concluding article usually sets the date for transposition of the directive by the Member States.

Signature	- Contains the signatures of the contracting parties.
Footnotes and Annexes	- Contains source information of references given in the text of the directive, both Preamble and Articles part. Contains annexes where relevant.

For convenience I shall refer to the above document format as a "basic logical unit" in the sense that it possesses a logical completeness. After all, the document has a title, refers to those documents that were involved in its genesis and outlines in a series of articles the goals to be achieved and when they are to be achieved. The documents' formal nature is confirmed by the signatures of the contracting parties and additional information where necessary is provided for by the footnotes and annexes.

Yet looking at directives more closely it is noticeable that there is much more useful information that could be logically associated with them. For example, it would be useful to know

- the directive's legal basis,
- the preparatory works that gave rise to the directive,
- other documents affected by the directive,
- other documents affecting the directive
- measures in national law that implement the directive,
- case law that affects the directive.

It would be difficult to append such a substantial amount of information to a printed version of a directive. Not only would such a product be unwieldy and difficult to use but it would be almost impossible to keep the information associated with the directive up to date. The paper-based format is not the best means to depict and follow the dynamism within the law.

However it is possible to append such information to the basic unit where the document is in a digital form.

3.2 EC Directives: An Example of Digital Legal Documents

The digital source of directives for this discussion is the CELEX database. Documents in the database are stored as basic logical units with a minimum information content as described above. Each document is accorded a specific number which is formulated according to a system and is to be found in a field called DOK.NUM. For directives the document number comprises,

CELEX Sector number + Year + CELEX code denoting directives + number of directive

Hence, Council Directive of 13 June 1990 on Package Travel (90/314/EEC) has the document number 390L0314 formulated as follows,

- | | |
|------|--|
| 3 | - the CELEX Sector in which directives are to be found |
| 90 | - the year in which the directive was enacted, |
| L | - a CELEX specific code denoting directives, |
| 0314 | - The number of the directive made up to 4 figures. |

The document number system is the basis of the extensive document cross-referencing which is the hallmark of the CELEX database. For example the basic unit document carries, in the form of document number references, information on the directive's,

- legal basis
- a list of documents modified by the directive
- a list of documents modifying the directive

The document number system also enables users to quickly trace

- national implementing provisions and
- case law
 - * where the directive is the principle issue of the case
 - * where the directive is cited in the case.

Note that references to preparatory works are given in full and not as document numbers.

Possible Enhancements

Whereas current versions of CELEX give the references shown above as document numbers, a more elaborate digital version could conceivably contain,

- (i). the actual text of the documents referred to, or
- (ii). instructions where to find or instructions that find the texts referred to.

These and other possible enhancements will be briefly considered.

(a). Adding Supplementary Text

The directive as a basic logical unit could be enhanced by the addition of extra information such as the legal basis and preparatory works information. This kind of information is stable compared with the documents the directive may modify (see next section).

Jurisdictions differ on the extent to which preparatory works may be consulted in the interpretation of legislation. Nevertheless, be it for legal or other purposes e.g. commercial, lobbying etc , a document's legislative history or "Entstehungsgeschichte" may not only add important information but be vital to the directive's later interpretation. The situation here is analogous to the interpretation of music or literary analysis [Morgan 1991]. What is often more interesting than the final draft of a work is the path that led to the final draft.

The addition of preparatory works also opens up possibilities of adding hypermedia to the basic logical unit directive. Most parliamentary proceedings are now televised. Clips of relevant debates may convey more useful information than for example, a dry report.

In the particular case of directives they are really incomplete without their national implementing provisions. One producer, Context Ltd. has in fact taken the logical step of including CELEX Sector 7 information (i.e. the national implementing provisions) with the text of the directives.

(b). Inserting Instructions

Where the relationships between documents are volatile and subject to change, adding the text of modified and modifying documents is just not suitable. Rather it is more appropriate to include in the basic logical unit directive

- a. references to the affected documents, and/or
- b. instructions on where to find the documents.

CELEX contains the references to changed documents in the form of document numbers. These can also be looked upon as semi-instructions, as the references are a stage beyond a simple text reference to a format which is quickly searchable.

An example of what is meant is to be found in the World Wide Web where the cross-references not only indicate other related documents but execute those instructions to get to the document referred to.

(c). Language Versions

One of the additional benefits of the CELEX document number system is that it is easy to move from one language version of a document to another. This stems from the fact that unless otherwise stated a directive is authoritative in all official languages of the European Community. Another EUROBASES database RAPID initially took the view that each language version of a document was itself a separate document. However, the increase in the number of EU Member States made the database increasing difficult to manage. Thus, following a re-organisation of the database last year, the RAPID database manager opted for the position that a document constituted a single logical unit with many language versions.

(d). Document Appearance

Documents in printed format have to be set. Setting itself conveys information about the information in the document. Different fonts and script styles help rank and classify the ideas as well as attribute priority to the importance of the document's content.

Formatting also assists usage of the document. The simple convention of contents and index enables readers to quickly find their way around books. That these conventions are maintained across languages aids usage.

Similarly, documents in a digital form have to be formatted. The considerable advantage digital documents have over printed is that the digital form may have multiple formats. Many software packages enable users to export data in a variety of forms for immediate use in their word processor.

The print medium has however a distinct advantage in that, in accordance with its long age, it has reached a high degree of standardisation. The "new kid on the block" - the digital medium suffers from an acute lack of standards. Even the World Wide Web, suggested as something of a role-model, uses proprietary formatting standards [Wilson 1994, p.102].

Nevertheless, the above points can be used to indicate what kind of information a digital directive could well contain, namely,

Basic information:

- stored as text, graphics, sound and video

Supplementary information:

- stored as text, graphics, sound and video

Language version information:

Formatting information:

- stores information on the document's appearance
- stores information concerning the document's "instructions".

4. Collections of Legal Documents

If the advent of digital media renders the notion of a legal document uncertain then it follows on that the notion of a collection of legal documents needs to be re-examined too.

Examples of collections of legal documents would most certainly include Law Reports, Codes, Official Journals etc. All of these have the common characteristic that they are printed collections. More enlightened commentators might well include databases amongst their collections of legal documents.

We have already noted that the collection of legal documents, eg. the development of law reporting, or collections of legal documents, eg. Codes, have contributed significantly to legal history. If we describe law reporting and codification as major achievements in legal information management there is much to be gained from viewing legal information management from a legal historical perspective. Yet it is lamentable that so far very few authors involved in law and information technology have considered their subject through the eyes of a legal historian, let alone a comparative lawyer. This will hopefully change.

4.1 The Corpus Iuris Civilis: An Example of a Printed Collection

Comparative lawyers and legal historians are ever keen to remind us of the debt modern law owes Roman Law. Some have likened Roman Law to "a duck as it swims, bobs and dives in the water: it hides itself at times, but is never quite lost, always coming up again alive" [Kolbert 1979]. The most influential collection of documents that have come down to us is by far the Corpus Iuris Civilis, a codification of Roman Law undertaken by the Emperor Justinian who died in 565 A.D. Justinian's work is truly remarkable when one thinks that the compilation completed in 529 A.D. "came at the end of a development which had spread over thirteen centuries" [Kolbert 1979, p.9] yet was instrumental in the work that led to "that monument to Romanist scholarship which is so little Germanic, the German Civil Code (BGB) of 1896" [David 1985, p.45]. The German Civil Code of 1896 is still the version in force today.

However, Alan Watson in his book *LEGAL TRANSPLANTS, An Approach to Comparative Law*, cautions us that,

The Western world, has of course, been completely brain-washed by the authority of Roman law, especially as the law was set forth in Justinian's Corpus Iuris Civilis. The main divisions of the law, the major institutions, the boundary lines between one institution and another - all as fixed by the Romans - are so ingrained in us that we find it very difficult to conceive of the possibility of

other arrangements. Yet a moment's glance at other systems will show us that Roman rules are not inevitably the only ones.
[Watson 1978, p. 90]

Watson goes on to illustrate his point by referring to the ancient Greek notion of marriage which was very different to that of the Roman and thus to that which we have in Western Europe.

Now the issue of interest to us here is what factors led to one collection of documents being favoured over another. Space precludes a detailed answer, but again Watson provides some clues,

Clearly, one factor in the widespread reception of Roman law was that what later came to be called the Corpus Juris Civilis was written in Latin, a language understood by all educated men in Europe for many centuries. Those parts of the Corpus which were written in Greek were not lectured on - *Graeca non leguntur* - and comments on them are sparse in the Middle Ages. Similarly, later, of the work of two Scotsmen, Craig's *Ius Feudale* was influential in Europe (and was reprinted in Leipzig in 1716): Stair's *Institutions of the Law of Scotland* was not.

Another factor was that the Corpus Juris provided a written system which was detailed yet was in not too great a bulk. Law which is not written has far less chance of spreading. [Watson 1978, p.93]

It would seem therefore that the influence of one legal system over another is heavily influenced by such pragmatic considerations as the availability of collections of legal documents and their accessibility, seen for the most part in terms of language.

4.2 The CELEX Databases: An Example of a Digital Collection

Compared to the achievements of the Corpus Iuris Civilis, those of CELEX are far more modest. Although as far as spreading the law is concerned CELEX is arguably gaining ground.

The development of the European Communities, now European Union has given rise to a new legal order made up (for the time being) of 12 different Member States, and thus as many different legal systems and traditions. Additionally EU legislation and case law is equally authoritative in all 9 official languages. Even now, putting aside the forthcoming expansion of the European Union, it is difficult to keep abreast of EU legal developments.

The Commission itself, for example, finds it increasingly difficult to maintain an accurate running record of Member State implementations of EC directives [Hilf 1993, p.16]. In many cases, such problems have little to do with a technical infrastructure but are rather caused by a lack of resources and the inherent management difficulties coordinating the activity of 12 different states. In the midst of all these problems the CELEX information system, despite various flaws [Popotas 1991], plays a vital role.

Bearing in mind what was discussed above with regard to the Corpus Iuris Civilis, CELEX offers a comprehensive source of EC law which as a series of databases is available to anyone, anywhere with a modem and Personal Computer. It comes as no surprise therefore to find CELEX users all over the world.

Celex also renders EC law accessible. This may be looked at from two levels, linguistically and secondly, with regard to the relations between documents. The success of the Corpus Iuris Civilis relied on the fact that "users" throughout Europe understood the language in which it was written, namely Latin. The situation with CELEX is the other way around. As it cannot be assumed (agreed?) that "users" share a common language, CELEX has been produced in each of the official languages. Secondly, the document number system and the database fields provide an efficient and fast means of locating related documents.

In fact CELEX offers a means of access to EC law which is simply not available elsewhere. There is no printed equivalent to CELEX. Here lies an essential point and perhaps a pointer to a role for hypertext and later hypermedia, in the law.

Although CELEX is one of the oldest database systems, it differs from most of its peers in that it has no direct paper equivalent. It is true that printed collections of documents, for instance the Official Journal, L and C series and the Reports of the European Court of Justice are major sources. However these collections of legal documents lack the enhancements that are to be found in the digital versions as represented by CELEX. For directives the enhancements have been discussed above. The ECJ case law as found in CELEX sector 6, contains a field called NOTES which lists literature references from a variety of European legal journals. The contents of this field like the whole of CELEX sector 7, (national implementing provisions) have no paper equivalent.

Thus, it is probably more accurate to describe CELEX not really as a collection of legal documents but rather as an interlinked network or web of legal documents. In this respect CELEX begins to mirror a certain dynamism within the law and in doing so offers possibilities to explore it.

5. Towards a Role for Hypermedia in Law

It has been argued that our perception of legal documents and to a large extent of the law itself has been strongly influenced by the printed word. And that to fully explore a role for hypertext and then hypermedia in the law we need to reassess our understanding of what constitutes a legal document and following on from that, a collection of legal documents. In this way we will be able to evolve a role for hypermedia applied to truly digital documents rather than electronic versions of printed documents.

So far the exploration of a role for hypermedia has concerned essentially objective criteria: legal documents. It would be neither appropriate nor fitting to conclude the discussion without leaving the user unscathed! After all, the print medium has also influenced how we see ourselves as users viz-a-viz legal documents. Traditionally speaking users of legal documentation retrieve or rather "pluck" materials from a given source and work on them in a physical location. As we rush and stumble into the digital age this view or perspective also needs to be re-assessed. Consider the following example.

All the commercial producers of the CELEX databases offer access to the data using full-text retrieval techniques. Briefly, this means that the user formulates a search string based on words and/or phrases. The system's search engine then searches for the words and/or phrases and yields as "hits" those documents in which the word or phrases occur. The documents retrieved may have no other connection with each other other than the occurrence of the terms. Although an efficient and fast means of obtaining documents from a large volume of text it is not without limitations. Work is going on to improve upon the basic idea of full-text retrieval [de Mulder et al. 1993] or to find alternative means of retrieving documents.

Let us repeat the process described once more but this time omit any references to text retrieval. Instead we prefer to say that by yielding "hits" the system maps the user onto a location or locations within a larger information space. The user may bounce to another location by refining or renewing the search. Alternatively the user may regard the location as a point of access to other documents. In the case of CELEX this could involve following a trail of document number references or other documents. Alternatively the user could pursue a reference to a document's preparatory work, or to a national implementing measure. Where case law is concerned this may involve pursuing a norm, other cases, references to national courts and even literature. Seen in this way CELEX offers a gateway to other legal information spaces. The technique of searching for text is the same only the latter perspective sees full-text searching as one of a number of means enabling users to navigate through legal information space.

Navigating through legal information space is difficult with the medium of print. But not impossible. After all, the phrase "a body of law" was in circulation long before the advent of the computer (5). The analogy is appropriate and still helpful as a "body" is a complex organism of interworking parts. Whereas the full-text retrieval paradigm unintentionally runs the risk of dismembering legal documents, a role for hypermedia lies in "fleshing out" the law.

Footnotes

1. See "An Introduction to EUROBASES", P. 12. Available free of charge from the Office for Official Publications of the European Communities. For more information on EUROBASES/CELEX contact Mr Kurt Gläser, EUROBASES, Bat. L-47, Office 5/39, B-1049 Brussels, Belgium, Fax: (+32) 2 296 06 24.
2. Quoted in Terrett 1994, page 82.
3. See "Hypertext meets JUSTIS", Information World Review, October 1993, p.24. Also JURIS GmbH has recently launched an Arbeitsrecht CD-ROM which has hypertext links between case law and legislation.
4. See Directory of Public Databases, Office for Official Publications of the European Communities, Luxembourg, January 1993, p.55.
5. The "Corpus" in Justinian's Corpus Iuris Civilis is but one example.

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