REGULATORY COOPERATION THROUGH COMPUTER ASSISTED SOLUTIONS

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EXECUTIVE SUMMARY

Regulatory Cooperation through Computer Assisted Solutions
by Jon Bing

In this paper, we briefly discuss some ways in which computerised information systems can help to satisfy the information needs of regulatory managers with respect to regulations at other levels of government, and, further, to provide a basis for regulatory cooperation by improving communication and information-sharing. The paper emphasizes the relations between national and the intra- or supranational obligations. One will note that the two perspectives -- access to international regulations for national managers, and access to the national implementation of such regulations for international managers -- are but two sides of the same coin.

Access to the regulations of international organisations and countries is today facilitated by computerised systems. But these systems have not really been designed to meet the requirements of regulatory managers; rather, the end user is seen as a lawyer advising a client on a legal problem, or a librarian locating a certain document.

Regulations are contained within separate jurisdictions. The basic jurisdiction is the sovereign state, defined by its own constitution and recognised by public, international law. But the national jurisdiction may be subdivided internally into sub-jurisdictions. This is clearly the case of a federal state. Often different types of internal sub-divisions are applied for different areas of law. The sovereign state also enters into international agreements with other sovereign states. These agreements impose obligations on the national regulatory system, and create bonds between countries.

In this way, legal jurisdictions interlock, and this situation is by itself a reason for cooperation between regulatory managers. At least four other reasons for cooperation may be discerned:

- **Consistency and compliance.** Regulations within one jurisdiction should be consistent, and the regulatory manager will also comply with requirements from regulations issued at higher levels in the hierarchy. Computerised systems may help in making it easier to check for consistency and to find relevant regulations.
- **Learning from the experience of others.** When implementing a regulation, the regulatory manager may find it useful to see how the same issues have been addressed by other jurisdictions.
- **Control and audit.** The regulatory manager will implement regulations from higher levels, but will also have an interest in checking whether others have complied loyally with the regulations. For instance, countries bound by the same multi-national treaty may want to monitor the implementation of its provisions by other countries party to the treaty.
- **International cooperation and trade.** It will be important to gain knowledge of foreign regulations in order to avoid creating unnecessary difficulties in international cooperation and trade when issuing national regulations.
One typical situation is for regulatory managers on the national level to gain *access to international regulations*. This was the objective of some of the very early efforts of computerised information systems, and some examples are mentioned. Within the European Communities, for example, the CELEX system offers access to Community law for member countries.

There is also an interest in monitoring national implementation of international regulations. The CELEX system offers this possibility, but so do systems in other international organisations, such as the World Health Organisation. Three areas of law are given as examples of *international computerised solutions* for access to regulations:

- Health legislation (the Regional Office for Europe of the World Health Organisation);
- Environmental law (the United Nations Environment Programme, the Environmental Law Information System of the World Conservation Union, and the ENLEX system, which is part of the Italian national system ITALGIURE);
- Labour law (the different information services of the Labour Law Information Branch at the International Labour Organisation).

Communication between jurisdictions and within multilingual jurisdictions frequently implies the problem of multilingualism. Drafting and accessing documents in other languages pose special problems. Some of the attempts at coping with these are mentioned.

Finally, the possibilities of *improved communication* between regulatory managers provided by computer systems is mentioned. An example is the International Legal Information Network, an initiative of the United States Library of Congress, now attracting international attention.
I. INTRODUCTION: USING COMPUTERISED INFORMATION SYSTEMS FOR REGULATORY COOPERATION

This paper will discuss the use of legal information systems as a tool for improving cooperation between regulatory managers at different levels of government. "Regulatory managers" include a range of persons in different roles. At the highest level are the decision-makers, including not only the members of parliament who enact statutes, but also officials of government, or of government agencies, who issue regulations on the basis of authority derived from the constitution or from specific statutes. "Regulatory managers" also include the administrative officials and experts in regulatory departments who, in response to policy decisions, identify specific regulatory proposals and, perhaps on the basis of a hearing or public consultation process, draft regulations. Also included are the analysts who assess proposals for their impacts on society, and for their administrative or economic consequences. Finally, central reviewers who oversee the regulatory system and review regulatory proposals to evaluate whether regulations are optimal, and consistent with changes in policies, society or technology, are also potential users of legal information systems to improve regulatory cooperation.

This is a rather large group of persons. One may also include those outside the government who take an interest in regulations on a specific subject and who may wish to evaluate current regulations or review new proposals -- this group may include organisations for trade, interest groups, political parties, and lobbyists.

"Regulatory managers", thus broadly defined, have one thing in common: they are not working with regulations to solve case-specific legal problems -- as would be a lawyer, a judge or a case handler in a public agency. Rather, their interest is of a more general nature. They view regulations as tools for organising society, for stimulating or restraining certain activities, solving conflicts, and so forth. In a sense they are social engineers. In our context, it should also be emphasised that developing, maintaining, and updating regulations is a dynamic process. It does not end once a regulation has been adopted -- it only enters a new phase in its life cycle.

It is also the case that a regulatory manager is contained within a single jurisdiction, that is, a single legal system. The primary point of departure is the sovereign state, defined by its own constitution and recognised under public international law. But, for the regulatory
manager, an emphasis on the single legal system of the sovereign state would be misleading. The state may itself have an internal, rather complex legal structure encompassing various levels of government, and it will be part of other structures through international agreements. The result will be a complex structure of interlocking legal systems, as suggested in Figure 1.

Internally, a state typically is divided geographically into smaller jurisdictions -- regions and municipalities. These smaller jurisdictions will have authority to issue regulations for certain matters. A town, for example, will usually issue by-laws on its own affairs. There are also federal states, which are organised in many different ways (one may think of the constitutional basis for nations as different as the United States of America, United Kingdom, and Switzerland).

Externally, the state will be party to a number of agreements. One definition of a sovereign state is that, within its jurisdiction, other states and organisations cannot impose legally-binding regulations. The sovereign state can, however, freely make an agreement with one or several other states and in this way accept obligations under international law.

In a sense, it may also be misleading to talk about public international law as "one legal system". Though there are international rules that are commonly held to apply to all states, primarily of customary nature, the regulation applying to a certain state will depend on the agreements to which that state is party. The combinations of all these agreements constitute the international public law for that state, and this will probably -- at least in detail - differ from the international public law affecting any other state.

Relations between the international agreements, treaties and conventions in force, on the one hand, and national legal systems on the other, fall into two categories. In some states,

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3 Actually, "by-law" literally means "the law of the town", the prefix "by" originating from the Norse word for town, still used in the Nordic languages, and part of the name of many British towns (for instance, Grimsby).

4 In Figure 1, "federation" is pictured as the top of an implied hierarchy of regulations within the nation. But such a hierarchy does not necessary hold, as the federation can be created by states, and derive its authority from the states -- rather than the states deriving their authority from federal law.

5 It may be contested that the U.K. can be properly classified as a federal state, though in our context it shares some of the same characteristics.
the national legal system incorporates these international legal instruments and makes their rules directly applicable within the jurisdiction, by, for instance, the national courts. This is called the *monistic principle*. In others, an explicit transformation has to take place, typically by drafting a national regulation containing the substantive rules of the international legal instrument. This is called the *dualistic principle*.

In the latter case, one must distinguish between the rules of public international law, which apply to the state, and the national regulations based on the international legal instruments. In this case, it is quite possible that there is a discrepancy between the two sets of rules; the state may have failed to comply with an obligation under international law and to transform the appropriate international legal instrument to national law, or an inappropriate interpretation may have occurred in the transformation process. This creates a rather complex situation, flowing from the fact that there does not exist a single, supranational regulatory authority.

In certain cases, nations have formed groups -- unions\(^6\) -- through treaties which have created supranational agencies whose authority and decisions the sovereign states have agreed to follow. A very strong version of such a union is the European Communities, in which the European Court of Justice in Luxembourg decides matters of Community law that will be applied by national courts. The union resulting from the European Economic Space Agreement will be similar, though somewhat weaker. But there are more limited examples of the same, such as the countries that have agreed to accept the dispute resolution mechanism of the International Court in the Hague, the decisions of the Human Rights Commission in Strasbourg, and so forth down to the rather weak forms of dispute resolution that are part of agreements such as the GATT.

This gives some indication of the complexities of interlocking jurisdictions, and why it is necessary for regulatory managers to cooperate with their counterparts in other jurisdictions. There are at least three distinct reasons for managers to cooperate to obtain information on regulations existing on different levels in the hierarchy of regulations:

**Consistency and compliance.** Regulations within a jurisdiction should be consistent. This requires that managers be aware of regulations existing on higher levels of the hierarchy and on the same level. A regulation issued under the authority of a statute should obviously not be in conflict with the statute itself -- or with other statutes. And regulations issued by one agency should not be in conflict with those issued by other agencies. To ensure consistency and compliance with superior regulations, regulatory managers must have access to the stock of existing regulations. Systems should be set up to access the regulations in force (this is generally addressed by national legal information services), and there should be routines for notification when reform is being considered in certain areas so that efforts may be coordinated at the earliest stage (this is generally addressed within a jurisdiction by a regulatory agenda or similar system).

\(^6\) In this context, "union" is used as a technical term, and is not meant to refer to the policy issues related to the reformation of the European Communities into a more integrated, political organisation. It is quite common to name those countries that are parties to the same treaty as a "union" under that treaty, cf for instance the Berne Union based on the Berne Convention on Copyrights.
Learning from the experience of others. There are several reasons why different regulatory managers may be faced with the task of developing regulations of a similar nature. The most basic reason is that our societies -- though contained in sovereign national states -- nevertheless share many of the same characteristics, and develop under the influence of many of the same forces. Therefore regulatory managers in different countries may be faced with the task, for instance, of developing a regime for the protection of integrated circuits, or setting standards for traffic safety.

Another reason may be that a decision made on a higher level in the regulatory hierarchy must be implemented in parallel on the lower levels. For instance, a directive from the Council of the European Communities must be implemented in the national legislation of the member countries. The provisions of a new treaty to reduce the use of freon must be implemented in national environmental regulations -- perhaps in a large number of regulations governing different industries in different states.

In such cases, the regulatory manager may want to look at existing regulations in other jurisdictions to facilitate developing and drafting the regulation. This may be combined with a comparison of regulatory strategies in different jurisdictions so that one is better able to choose the right strategy for one’s own jurisdiction. Looked upon in this sense, the world becomes a laboratory of regulatory experiments, yielding information and results for the benefit of regulatory managers.

There are many obstacles to being able to benefit from this wealth of information: language barriers, differences in basic principles on which jurisdictions rest, and so forth. But clearly, without sharing information, none of these benefits can be reaped.

Control and audit. Finally, the issue of control should be mentioned. This also has several aspects. The loyal regulatory manager needs information to ensure that new regulations being developed actually comply with requirements from higher levels in the hierarchy, and are consistent with regulations both on higher levels and the same level in the hierarchy. The counterpart to this is the regulatory manager on a higher level checking that regulations on lower levels actually comply and are consistent with the higher-level requirements. Regulatory managers in international organisations, for example, would often like to keep track of the national implementation of an international agreement by the members of a union.

But there may also be a need for regulatory managers in one jurisdiction to check that regulations in a neighboring jurisdiction actually comply with mutually-accepted higher-level requirements. A nation will be concerned that a balance is kept in the international community. For instance, actions taken to improve environmental control may have a cost that increases the prices of goods or services offered on the international market. Regulatory managers loyally implementing measures which flow from an international agreement will -- quite reasonably -- have an interest in checking that the other members of the union likewise implement the provisions.

International cooperation and trade. It may be argued that a fourth reason for cooperation should be noted. Regulatory managers implement policies which in many cases emphasise international cooperation and trade. In developing national regulations that promote such policies, it would be desirable to have knowledge of the national regulations of trade
partners and others. This is, however, an interest closely related to that of compliance and consistency. This aspect will therefore not be singled out for discussion in this paper. But it is rather obvious that for government officials in charge of developing policies, or for lawyers advising clients, the main interest in national regulation in other countries will be that they are part of the legal framework in which international trade in goods and services takes place.

In this paper, we will briefly discuss some ways in which computerised information systems can help to satisfy the information needs of regulatory managers with respect to regulations at other levels of government, and provide a basis for regulatory cooperation, with an emphasis on the relations between national and the intra- or supranational obligations of this state. One will note that the two perspectives -- access to international regulations for national managers, and access to the national implementation of such regulations for international managers -- are but two sides of the same coin. In the following we will focus on these two main perspectives, and will mention two areas of law where international cooperation would seem to be rather strong.

II. NATIONAL ACCESS TO INTERNATIONAL REGULATIONS

A) Introduction: Early initiatives

There are special problems with the documentation of international agreements. For instance, an agreement may have several formal versions, and a state may not be party to the treaty in its latest revision. Also, agreements often have an authentic language different from the official language of the nation. In this case, the agreements may be documented both in the official version and in translation -- creating a situation of multilingualism similar to that discussed below.

The complexity of the problem of determining which agreements are in force between a state and any other state has been attractive to those concerned with legal information services, and in the late 1960s played a rather major role in supporting the exploration of computerised systems.

The major example may be Hugh Lawford’s initiative at Queen’s University in Kingston, Canada. Since 1961, the university has been engaged in a Treaty Project, collecting and annotating the treaties of the British Commonwealth. In 1967, word processing was introduced. The Treaty Project has been used in preparing the treaties of a number of developing countries. In 1968, the Queen’s University Institute for Computers and Law (QUIC/IAW) was funded based on this project. The initiative is basic to what is today known as QL Systems Ltd, a computer and communication service offering legal information services for the whole of Canada. The initial relation to the Treaty Project has not, however, led to an emphasis on international legal instruments.

In 1968, the Committee of Experts on the Publication of National State Practices, located within the Field of Public International Law at the Council of Europe, recommended to the European Committee on Legal Co-Operation (CJJ) that a committee of experts should be appointed to study "the question of harmonisation of technical means of programming international treaties into computers," which led to the establishment in 1969 of the committee which today is known as the Committee on Legal Data Processing in Europe (CI-IJ). Again,
in spite of the initial relation to treaties, the activities of the committee have not been especially concerned with the special challenges of international legal instruments, but rather with more general issues. Its activities led, however, to the computerisation of the Council of Europe Conventions (which are made available to interested member countries in computerised form), and to an interest in treaties among some of the member countries represented at the Committee. A prime example was the establishment of the now discontinued system RBERTRAT (1972) by the Spanish Ministry of Foreign Affairs.7

Today, treaties are included on data bases within a large number of national legal information services.8 Some international organisations, such as the Council of Europe’s activities mentioned above, have computerised the international agreements for which they are responsible. Generally, the volume is quite limited, and the organisation will not organise computerised services for outside users, though the treaties may be available to interested parties.

It is also often of interest to determine which other countries are party to a certain treaty. This is a task that is hardly appropriate for any national legal information service. Traditionally it is solved by the treaty itself designating a depository that is charged with the task of keeping track of the countries that are parties to the treaty. Such a depository may be an international organisation, which may again rely on a computerised system.

These continue, however, to be only partial solutions. A more general solution may emerge out of the United Nations register of treaties. At the 28th session of the General Assembly (1973) a proposal for the establishment of a United Nations Treaty System was adopted, although this system has apparently yet to be established.

B) Access to supra-national regulation: The European Communities and the CELEX service

There is one major exception to the lack of organised access to international agreements. In 1967, the European Communities took the initiative to create a legal information service, known as the CELEX (from Communitatis Europae! Lex), that first

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7 These examples are from Jon Bing et al. *Handbook for Legal Information Retrieval*, North-Holland, Amsterdam 1984.

8 A rather special example was the Bulgarian service offered as part of the NORMA system. This is developed as a stand-alone system for PRAVETZ-16 computers under MS-DOS. The data base is developed on the basis of the work of Committee for Mutual Economic Assistance, established in 1987 for multi- and bilateral agreements between socialist countries as a preparation for economic integration and joint ventures with Western countries. Documents from Bulgaria, Hungary, Poland, Romania, the Soviet Union, and Czechoslovakia were included with bilateral agreements with Cuba, Mongolia, Vietnam, etc. The data base was distributed to subscribers every three month as diskettes, key words in the original language, Russian and English. In 1988 the work of translating all texts to Russian was begun. (This example is from Alexander Manov “Computer Technology and Legal Information Processing”, 6th Student Pugwash USA International Conference, University of Colorado at Boulder, 1990.) The NORMA system is still offered to the market in Bulgaria, but obviously the international part of the service now only has historical interest -- though the example still is valid as an illustration of a straightforward application of information technology to the problem of distributing information on international agreements.
became operational in 1970. The CELEX is today a major service covering all aspects of Community law, and is a prime example of the value to regulatory managers of having on-line access to directives and other instruments to which their national regulations must conform.

The CELEX service is available on-line to subscribers and is a rather conventional service based on text retrieval. The data bases are in English and French, and bases for the other languages of the Community are in preparation. CELEX offers its data base to other services and is quite happy to have such subcontractors distribute its material through their own networks. The British Context service has produced a version of CELEX in the form of CD-ROM. Several national information services have had the whole CELEX data base transferred and offer this with national material and under their own softwares.

The CELEX system not only documents community law as such, but also the international agreements to which the community is a party. The CELEX sector 1 documents treaties, and sector 2 international agreements. An example of an entry in the sector 2 data base follows:

![Figure 2. Example of CELEX document of international agreement](image)

The value of such a system for regulatory cooperation becomes especially evident if a country joins the Communities at a later stage. In 1981 Portugal requested entrance to the Communities. At the same time, the Gabinete de Documentação e Direito Comparado da Procuradoria-Geral da República started its operations. The Gabinete was linked to CELEX in 1984 and served as a consultant for the public administration, working for the Ministry of Justice, the Law Reform Commission, the Prime Minister’s Office, the President, and the

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9 The Communities are, however, in a process of evaluating the service, and it may be re-designed as a result.

10 At least, the German JURIS system and the Norwegian Lawdata service.

11 The examples of CELEX documents given below have been downloaded from the data bases of Lawdata.
Parliament. Today, the Gabinete is specialised in comparative law and use of a variety of foreign information services which are consulted as part of the process of national regulatory management.

A similar situation exists today for countries that have negotiated the European Economic Space Agreement\textsuperscript{12} that will, when (and if) the agreement takes effect, require that national legislation comply with Community regulations. Obviously, access to CELEX on-line, by purchase of the data base for integration in a national service, or by the available CD-ROM, is very useful. However, a special solution to facilitate the work facing national regulatory managers has been implemented in Norway.

Here the CELEX data base has been imported into the national system, Lawdata. A secretariat within central government is responsible for national coordination of the amendments that have to be made to national regulations. This secretariat has developed a number of notes in which the necessary amendments are discussed. These notes are themselves documented as a data base in the Lawdata system, and citations of both national and community regulations are activated as hyperlinks. In this way, a regulatory manager may read the note, and consider the changes to be made. He or she may need only a simple keystroke to jump into the national regulation under discussion, then back to the note, and onwards to the cited Community regulation.

![Figure 3. Using CELEX in the Norwegian Lawdata System](image)

Most international agreements do not have associated case law on an international level. The exceptions are few, but one such exception is the Commission and Court of Justice created by the European Convention of Human Rights\textsuperscript{13} The Council of Europe has converted the decisions of the Commission and Court to computerised form, and it is expected that the data base will be made available on-line to outside users.

\textsuperscript{12} Austria, Finland, Sweden, and Norway.

\textsuperscript{13} Another is, of course, the European Communities. The case law of the European Court of Justice in Luxembourg is documented through the CELEX system, sector 6.
III. ACCESS TO INFORMATION ON NATIONAL IMPLEMENTATION

A regulatory manager in one country may be greatly interested in how another country has implemented a certain international agreement. There may be several reasons for such interest. It may be useful to have models for drafting new national regulations, or it may be of interest to explore how another country interprets an international legal instrument, perhaps to determine whether that country complies with the international rules.

This interest is shared by regulatory managers in international organisations, who would like to keep track of national regulations implementing the agreements for which their organisations are responsible, as well as national decisions based on such regulations.

Traditionally this type of information has been collected and distributed through specialised journals such as the journal *Copyright* published by the World Intellectual Property Organisation, which is responsible for the Berne Convention on Copyright. In this journal, relevant developments within member countries are discussed, and through comparative studies, national differences are analysed. There may also be academic research centres for certain areas of law that attempt to keep track of developments in many countries and that may publish digests, analyses, encyclopaedias, etc. In this paper, we will not be further concerned with these conventional efforts, though we should note that they are still the main tools for informing those interested in national implementation.

Some international organisations have supplemented their traditional systems with computerised facilities. For instance, the World Health Organisation at its regional office in Europe established in 1983 a data base containing records of national regulations implementing WHO directives or recommendations.

Again, the European Communities emerge as the major example of an international organisation tracking national implementation through a computerised system: Sector 7 of CELEX documents national implementation. An example follows.

<table>
<thead>
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<th>Figure 4. Example of document on national implementation</th>
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<tr>
<td><strong>DOC.NUM.</strong> 76111513GR</td>
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<tr>
<td><strong>TITLE:</strong> GREEK PROVISIONS RELATING TO: COUNCIL DIRECTIVE ON ADMINISTRATIVE PRACTICES AND PROCEDURES CONCERNING SETTLEMENT, EMPLOYMENT AND RESIDENCE IN A MEMBER STATE OF THE COMMUNITY OF WORKERS AND THEIR FAMILIES FROM ANOTHER MEMBER STATE</td>
</tr>
<tr>
<td><strong>OFFICIAL JOURNAL NO P 080,13/12/1961 PAGE 1513</strong></td>
</tr>
<tr>
<td><strong>AUTHOR:</strong> GREECE</td>
</tr>
<tr>
<td><strong>FORM:</strong> NATIONAL IMPLEMENTATION MEASURE</td>
</tr>
<tr>
<td><strong>TREATY:</strong> EUROPEAN ECONOMIC COMMUNITY;</td>
</tr>
<tr>
<td><strong>TYP.DOC:</strong> 7; NATIONAL MEASURES FOR IMPLEMENTING DIRECTIVES; 1961; L; GREECE</td>
</tr>
<tr>
<td><strong>SUB:</strong> FREE MOVEMENT OF WORKERS; FREEDOM OF ESTABLISHMENT AND SERVICES;</td>
</tr>
<tr>
<td><strong>REGISTER:</strong> 05100000;</td>
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So far, only national regulations are included, but it is planned that the CELEX sector 8 data base will also contain national case law relating to the Community regulations.
IV. EXAMPLES OF COMPUTERISED SYSTEMS FOR THREE AREAS

Above, we looked at computerised information systems from two perspectives: the perspective of the national regulatory manager who needs access to international regulation to ensure compliance and consistency when developing national regulation, and the perspective of the international regulatory manager who needs to track national implementation of international agreements. The capacity to track national implementation will at the same time serve the national regulatory manager who needs to ensure that international obligations have been properly observed in other countries. And such information systems also serve -- within the area documented -- the national regulatory manager who seeks to learn from the experiences of others, though this may be limited to the drafting of the text.

We see that international information systems can facilitate several different varieties of regulatory cooperation. There may therefore be something to be learned by briefly looking at information systems created within three areas where cooperation has been perceived as quite important -- health law, environmental law, and labour law.

A) Health Legislation

The Regional Office for Europe\textsuperscript{14} of the World Health Organisation launched in the early 1980s a programme for health legislation. As part of this programme, a system was set up that included indexed entries of the health legislation of member countries and a specially developed form document.\textsuperscript{15} It was originally set up in cooperation with the Uppsala University (Sweden), using a rather powerful data base system.\textsuperscript{16}

In our context, the more interesting aspects of this project are the arguments put forward by the WHO for stronger cooperation between national regulatory managers. As long ago as 1977 at the 13th World Health Assembly, the organisation expressed a concern for national health legislation, emphasizing that legislation itself was a strategy towards protecting and improving the health of the individual and of the community.\textsuperscript{17} In 1981, the regional office established an advisory committee for Europe, which was to provide guidance "on the major direction of development of the health legislation in the European Region".\textsuperscript{18}

In a note to the committee, several issues were addressed, including the need for cooperation between regulatory managers:

"...increased need of access at the national level to international exchange of information on health legislation.

\textsuperscript{14} This office is situated in Copenhagen (8, Scherfigsvej, DK-2100 Copenhagen).

\textsuperscript{15} "Euro-Health Legislation: Notification of new legislation", printed as Annex IV to ICP/HLE 002, WHO, Copenhagen 1982

\textsuperscript{16} The system MIMER-IR. This was also developed by UDAC at Uppsala University.

\textsuperscript{17} Cf resolution WHA30.44.

\textsuperscript{18} Cf Health Legislation: European Programme, ICP/HLE 002, WHO, Copenhagen 1982:3.
Situation analysis

The solidarity and interdependence of European countries create a current need to obtain rapidly from other countries available information on health legislation for comparison and decision-making.19

Emphasis on communicating information on health legislation also leads to a certain re-defining of the role of the International Digest of Health Legislation, which is a conventional journal, but an obvious response to the increased need for cooperation on an international scale among regulatory managers in health law.

B) Environmental Law

Many kinds of environmental regulation, aimed at waste carried by a river through the territories of several countries, or at fumes from factories borne by the wind across boundaries, are by their nature international. There are therefore obvious reasons for taking an interest in establishing some sort of international base of legal information to make it possible to form a coherent and comprehensive understanding, on an international scale, of the law in force.

1) The United Nations Environment Programme

The major international organisation working to improve regulatory cooperation is the United Nations. Its Environmental Programme (UNEP) has a mandate from the Governing Council:

"To collect and disseminate information on national environmental legislation and maintain a register of International Treaties and Other Agreements in the Field of the Environment; to strengthen and coordinate the use of existing information sources and databases".20

The long-term goal is to establish an "operational comprehensive database on national and international environmental law". Today, UNEP systematically collects information from countries, including information on legislation, for its Country Fact Sheets database and the Environmental Law and Institutions, Programme Activity Centre (ELI/PAC) in Nairobi21 maintains country files for those countries assisted through its technical assistance programme. ELI/PAC also publishes the Register of International Treaties and Other Agreements22 and has published two volumes of selected multilateral treaties.


20 GC 16/25

21 PO Box 30552, NAIROBI, Kenya

22 Grotius Publications Ltd, Cambridge, United Kingdom
It has been reported that ELI/PAC is currently reviewing its policy, strategy and future work programme concerning a data base on environmental law, and is, moreover, considering possible cooperative partners.

The UNEP’s Regional Office for Latin America and the Caribbean (ROLAC) has developed a regional data base containing considerable information on environmental law and institutions in the region. This data base also includes information on environmental conventions ratified by countries in the region.

2) The Environmental Law Information System (ELIS)

Though the United Nations has taken the initiative for regulatory cooperation in environmental law, two other major initiatives must also be noted.

The World Conservation Union -- IUCN -- is an organisation with consultative status with the United Nations, and whose members include 60 sovereign states and some 560 governmental and non-governmental organisations from approximately 120 countries. IUCN activities are planned and coordinated by a Secretariat and by commissions for ecology, species of plants and animals, protected areas, etc.

In 1968, the IUCN Commission on Legislation began to investigate computerised information services. In March 1972, the then new IBM retrieval program STAIRS (Storage and Information Retrieval System) was made the basis for the system, and this version was demonstrated in June 1972 at the United Nations Stockholm Conference and the Second International Parliamentary Conference on the Environment. The current system is based on a customised software known as ROMULUS (Retrieval Oriented Multilingual Updating System).

The system is today operated by the IUCN Environmental Law Centre (ELC), which is part of the IUCN secretariat in Bonn. It cooperates closely with the IUCN Commissions, particularly the Commission on Environmental Policy Law and Administration (CEPLA).

The system is run in cooperation with the International Council of Environmental Law (ICEL), which is an international nongovernmental organisation with individuals and organisations as members (approximately 290 members from 60 nations). Its sole purpose is the promotion of contacts and exchange of information. ICEL shares facilities with the ELC.

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23 Letter of March 29, 1993, (ref LK/KH/290393) from Sun Lin, director for the ELI/PAC as a response to a request from the author.

24 Confirmed in letter of April 23, 1993 (ref SO/vm) from Sun Lin, director for the ELI/PAC.

25 Boulevard de los Virreyes No 155, Lomas Virreyes, 1000 MEXICO DF, Mexico


27 214 Adenauerallee, 53 BONN, Federal Republic of Germany
The CEPLA and the ELC maintain a collection of legal provisions relating to environmental issues in different countries, as well as international instruments. Currently, regulatory information from more than 150 different states has been documented, with the addition of bilateral and multi-lateral agreements and binding international legal instruments. The collection contains currently some 32,000 units. The annual increase is estimated at 1,500 units.

ICEL maintains a collection of literature relating to environmental policy issues, law and administration (approximately 43,000 units with an annual increase of 2,000-2,500 units). A selection of court cases is also maintained, emphasizing Germany, the United States, and France. The majority of the cases (approximately 2,300) are German.

The combined documentary resources of the two organisations are the basis of the joint information service, ELIS, which is organised in eight data bases: national legislation, international legal instruments, treaties, documents from the European Communities, court decisions, literature, fauna species and flora species.

Abstracts are only prepared for special projects, including ENLEX (see below) and projects to index species mentioned in national regulations, protected areas of the Mediterranean and wetland legislation. Abstracts are developed mainly for relevance assessment. Relationships are specified, especially vertical relationships, such as between a statute and its subsidiary regulations.

This system is clearly more comprehensive than the WHO system on health law. There are also differences relative to CELEX. It may be fair to say that ELIS has been developed not only as a legal information system to support decisions in specific cases, but more as a policy information system. Its inclusion of case law and literature within its domain will make it possible to assess and compare different regulatory strategies. It would seem that the system is an indication of what can be achieved by conventional computerised systems in supporting regulatory cooperation.

3) The ENLEX system of ITALGIURE

In Paris in 1972, the European Communities decided at a summit meeting that its work to protect the environment should be emphasized. In 1977, the EC decided to establish an information service for environment law, with the objective of supplying bibliographical material on legal sources relating to the protection of the environment. In particular, the system would facilitate the operation of small and medium-sized businesses by furnishing them with comprehensive legal information. In December 1981, the Commission

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28 These seem to be termed "soft laws".


gave financial support to two organisations to develop the system, which was named ENLEX (ENvironment LEX). 31

The IUCN was charged with developing a data base for legislation and literature within the framework of ELIS (see above). Of the approximately 95 000 documents of the ELIS data base, approximately 9 000 have been made subject to the special analysis required for ENLEX. The Centro Elettronico di Documentazione (CED) of the Corte Suprema di Cassazione has developed a data base of court decisions.

Though the origin of the ENLEX project is closely associated to the European Communities, the project must be regarded as Italian, and since October 1991 it has operated as a part of the ITALGIURE system, the national legal information service of Italy, without any financial support from the European Communities. The CED has established cooperation with experts in other countries to ensure the correct translations of abstracts of decisions. It is estimated that the cost of preparing one document is approximately 100 000 Italian lire.

By mid-1991, 12 262 documents had been prepared which give a coherent view of the jurisprudence and doctrine of the law of the European communities. But the system is still incomplete, since the areas of energy, flora, fauna, pollution of the sea, and others have not yet been documented. The system is currently in an experimental phase, and it is expected soon to have mastered the last difficulties for unification of the German and Italian material.

The material originating in Bonn is, as an experiment, made available under the ITALGIURE system as a separate data base, ROMSL. This included, by 1 June 1991, 6 290 documents. The unification makes it possible to inspect country by country all the legislation and the jurisprudence in an English version. Also the original language of the regulation or statute is available, and the two versions can be inspected and compared. 32

C) Labour Law

Within the International Labour Organisation, 33 the Labour Law Information Branch follows national developments in labour, social security and related human rights legislation. It receives a large number of publications, consults national data bases, and has access to the information collected by the ILO regional offices and national correspondents. In addition, it maintains contacts with public agencies and research institutions.

31 Cf Amedeo Postiglione "National report for Italy". The project was also known as "Project 80", referring to the date of the important decision by the Communities.

32 Belgium is given special consideration, as both the equally-authentic French and Flemish languages of the original regulations are available.

33 Routes des Morillons 4, CH-1211 Genève 22, Switzerland.
From this material, a team of lawyers selects the documents that are to be included in the computerised service, called NATLEX. Each national legislative text is represented by a record containing specific fields. Documents in more than 40 languages are included, and the analytical summaries for the indexes are carried out in the three working languages of the ILO (English, French, and Spanish). More than 26 000 records are now available, with an annual growth of approximately 3 000 records. Approximately one third of the records relates to social security legislation, and more than 500 legislative records deal with migrant workers.

NATLEX is part of LABORLEX, which is maintained by the Labour Law Information Branch (INFLEG) of the ILO International Labour Standard Department. LABORLEX also includes the data base ILOLEX, which contains information on international labour standards, including the International Labour Conventions and Recommendations, the Reports of the supervisory bodies on the application of standards, and the ratification of member countries.

The tri-lingual data base of ILOLEX is also available as a CD-ROM, and by way of illustration, the contents are listed below:

- ILO Conventions
- ILO Recommendations
- Comments of the Committee of Experts on the Application of Conventions and Recommendations (1987)
- Reports of Committees and Commissions established under Arts 24 and 26 of the ILO Constitution to investigate representations and complaints
- Ratification lists by Convention and by country
- ILO Constitution

This example illustrates a computerised service that is used to monitor national implementation. Obviously, with respect to labour law, not only national regulatory managers in the narrow sense take an interest, but also interest organisations in the private sector which in many countries have a strong policy interaction with the government. With many controversial policy issues in the area, it is easy to imagine that the ILO systems contribute to various aspects of regulatory cooperation: comparison of regulatory strategies, monitoring implementation of international obligations, and so forth.

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34 The system is based on a Hewlett-Packard 3000 computer using the MINISIS, a data base management system designed by the International Development Research Centre, Canada. NATLEX is accessible on-line through the International Labour Information System, Referral System, which includes a program for user support for those not familiar with the MINISIS search language.

35 This Branch also publishes the Labour Law Documents three times annually, and the bulletin Legislative Information on a monthly basis.

36 Published by Martinus Nijhoff Publishers, PO Box 163, NL-3300 AD Dordrecht, Holland (US$850).
D) Other examples

Above, examples have been selected from three areas -- health, environment, and labour -- to illustrate some of the reasons for using computerised systems to promote regulatory cooperation. These areas are all of an international character, and they share a need for international cooperation.

But there are many other possible examples. For example, the OECD itself maintains an information system under the regulations on genetic modified organisms that monitors the organisms released into the environment in Member countries. The European Patent Office maintains an information system on decisions of its Board of Appeal,\(^{37}\) Convention, Treaties and Guidelines,\(^ {38}\) and forms.\(^ {39}\) It should be noted, however, that no survey in existence lists the computerised legal information services of international organisations. A compilation describing them would be welcome. But that is not the purpose of this paper, though it is with some regret that we limit the discussion to the examples already offered. And -- as mentioned in the introduction to this chapter -- no supranational organisation has emerged that offers a truly international service.

V. COPING WITH MULTILINGUALISM

A) Introduction

There are a surprisingly large number of states that have more than one official language. Among them are:

<table>
<thead>
<tr>
<th>Country</th>
<th>Official Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>Dutch, French</td>
</tr>
<tr>
<td>Canada</td>
<td>English, French</td>
</tr>
<tr>
<td>Finland</td>
<td>Finnish, Swedish</td>
</tr>
<tr>
<td>Ireland</td>
<td>English, Gaelic</td>
</tr>
<tr>
<td>Switzerland</td>
<td>French, German, Italian</td>
</tr>
</tbody>
</table>

The European Communities does, of course, have almost as many official languages as there are official languages in their member countries -- at the moment, nine languages (Danish, Dutch, English, French, German, Greek, Italian, Portuguese, Spanish).\(^ {40}\) In some states, there are also distinct versions of the same language in use at the same time, for instance Greece (Demotic, Katharevousa) and Norway (Bokmål, Nynorsk). In addition,

\(^ {37} \) All decisions from 1980.


\(^ {39} \) Standard EPO forms that can be displayed, but not printed.

\(^ {40} \) The Gaelic of Ireland is not an official language of the Communities; neither is the Luxembourgeois of Luxembourg.
minority languages are recognised, spoken and used, for instance, in court proceedings in a large number of countries.  

B) Drafting

In jurisdictions with more than one official language, drafting becomes even more complex, but one may look to computerised systems for assistance. The dream of machine translation has yet to be realised, though sophisticated knowledge-based methods may possibly be developed in future. But different methods for computer-assisted translation (CAT) are already in use.

In Canada, officially bilingual, the government has had experience with different computer-assisted methods since 1977. In the early 1980s, the Translation Bureau of the Department of the Secretary of State set up a project to determine whether current technology meets the demand for translations. Test sites established in different translation sections have available the Logos translation software, specialised tools including LOTUS 1-2-3 for data collection, WordPerfect for checking of spelling and for word processing, Kurzweil for entry of texts on machine-readable media, and Keyword and Pride Local for converting word processing documents.

The work is divided into four main steps: (1) Pre-editing: The translator eliminates any difficulties in the text that the system will not be able to handle; (2) Terminology research: The system produces a list of new words not found in its automated dictionary. When the translator has manually found equivalents, they are added to the terminology data base, coded by subject matter, and the necessary semantic rules are added to the data base; (3) Translation: This is completely automatic, and results in the form of a word processing document; (4) Post-editing: The translator revises the raw translation on the screen before it is delivered to the client.

It would, however, seem that the accuracy necessary for the translation of regulation is rather far beyond the capabilities of current systems. A "raw translation" is perhaps not too helpful for the drafter, though it may indeed be very helpful for a translator of a lengthy report. Perhaps computer-assisted translations may prove more useful for access to case law in the short term, but these possibilities will not be pursued here.

One should mention that it is possible to draft a regulation in a language-independent formal notation and have a system that uses the information provided by this form to construct texts in several languages. An early example of what is called "canonic input formalism" is provided by Hélène Bauer-Bernet, who was very influential within the CELEX system for a
long period. In the example, a half-legible canonic English or French input format is automatically translated into proper English or French.

Figure 5. Canonic input formalism and translations

INPUT

<table>
<thead>
<tr>
<th>ESIMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>* HARMONISATION</td>
</tr>
<tr>
<td>*LEGISLATION+MEMBER+ STATE+</td>
</tr>
<tr>
<td>E</td>
</tr>
<tr>
<td>TURNOVERTAX+</td>
</tr>
<tr>
<td>FBUT</td>
</tr>
<tr>
<td>STRUCTURE &amp; PROCEDURE+, APPLICATION/</td>
</tr>
<tr>
<td>SYSTEME COMMUN</td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td>TAXE SUR LA VALEUR AJOUTEE</td>
</tr>
<tr>
<td>FCHM</td>
</tr>
<tr>
<td>TAXE SUR LA VALEUR AJOUTEE, (A Si Al) ET B</td>
</tr>
<tr>
<td>F SIM</td>
</tr>
<tr>
<td>(A) LIVRAISON+/BIEN &amp; PRESTATION+/SERVICE</td>
</tr>
<tr>
<td>F PAR</td>
</tr>
<tr>
<td>(AI) EFFECTUE+, ASSUJETTI, A TITRE</td>
</tr>
</tbody>
</table>

OUTPUT FRENCH

Harmonisation des légations des États membres concernant les taxes sur le chiffre d'affaires - Structure et procédure pour l'application du système commun de taxe sur la valeur ajoutée. Sont soumises à la taxe sur la valeur ajoutée:

(A) les livraisons de biens et les prestations de services si (Ai) elles sont effectuées par un assujetti à titre onéreux à l'intérieur du pays

(B) les importations de biens.

OUTPUT ENGLISH

Harmonisation of legislations of the Member States concerning turnover taxes - Structure and procedures for the application of the common system of value added tax. The following shall be subject to value added tax:

(A) the supply of goods and the provision of services if they are carried out (Ai) by a taxable person for payment within the territory of the country

(B) the importation of goods.

The European Communities have invested significant resources to develop means for machine translation. For the drafting of regulation, it is understood, however, that a canonic form is still used when computer-assisted methods are applied, in addition to such methods exemplified above on the basis of Canadian experiences.

There are, however, other ways in which computerised systems may be used to assist the drafting of bi- or multilingual regulations. One interesting possibility, for example, is turning multilingualism to advantage by using it to check consistency -- using the terms of one language as some sort of control of the other to assure that there are no undesired deviations.

The Finnish project of *term-tuning* may serve as an example.\(^{44}\) The computer system is designed to check and evaluate the translation, direct the attention of the translator to possible inadequate passages, offer a range of term translations to a translator or drafter, and uncover incongruities or vagueness in the formulation or the logical structure of the text. The last function is seen as the most important.

The first assumption is that there is a 1:1 correspondence between term occurrences in one text and those in a parallel text, though "term" is often interpreted so that a few consecutive typographical words make up one unit. This justifies the approach of studying congruency between the parallel texts.\(^{45}\)

The second assumption is that one term should have the same meaning every time it occurs in the text, though it is emphasized that its "empirical incorrectness is conspicuous to anybody with some experience of analysis of actual texts in any field or language". It assumes, for example, that the regulation does not contain homonyms or synonyms. Nevertheless, the assumption is generally useful.

The system assigns term occurrences in one text to those in the parallel text, finding all cases where there is not a 1:1 correspondence, and presents these results to the drafter.

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\(^{44}\) The discussion is mainly based on "Term-tuning: A method for computer-aided revision of multi-lingual texts," SYMP/Informatique Jur (77)8, Council of Europe, Strasbourg 1977.

\(^{45}\) The project was carried out in Finnish and Swedish, which, in contrast to English (or French), rely heavily on compounded words, making this assumption perhaps less of a problem. One should note, however, that Finnish and Swedish belong to widely different language traditions and much are less related than, for instance, English and French.
C) Access to Documents in Another Language

Within a multilingual jurisdiction, the regulatory manager may want to access documents that are in another language than the one most familiar to him or her. This represents problems, from the rather trivial but troublesome problems of national characters not supported by the system available to the user, to the problems of formulating a search request or understanding a retrieved document in another language.

There have been some efforts in trying to extend help supported by information technology though the solutions adopted are frequently based on a language-independent indexing scheme. Search requests can be formulated in the formal language of the index and will retrieve documents in any natural language. This does, of course, presume an intellectual indexing of all documents and require that the user have knowledge of the indexing scheme, or is offered help by the system in using this scheme.

The oldest European legal information service, the Belgian CREDOC system, created by the notaries in 1966, provides an example of this approach. The main component of the indexing language is the descriptors, defined by a four digit numeric code in a bi-lingual thesaurus. These may be modified by ante- and post-descriptors ("facettes" and "specificateurs"). There are also defined hierarchical structures between indexing terms. Combining these elements, it is maintained that more than 60 000 concepts can be specified.

There have also been attempts to provide tools for specifying a search request in one language so that the system will transform this into a request in another language and retrieve documents in both languages. This could have been realised if a sufficiently efficient general method for machine translation had been available. However there are, to the knowledge of the author, no such systems in operation, though there have been attempts to achieve such functionality using simpler methods.

The major example is the Canadian DATUM system, based on a project initiated in 1970 in the French-speaking province of Quebec. To support retrieval, a novel thesaurus structure was designed. Two thesauri were developed, the g-thesaurus and the s-thesaurus. The g-thesaurus supplied grammatical expansions of words included in a search request. The s-thesaurus was developed to expand a certain word into a series of equivalent words or phrases, in both English and French. Selected passages from the documents to become parts of the data base were examined, and important words were replaced by a synonym in the context where the word occurred. A great number of "source lists" was produced, consisting of the original word and the assigned synonyms. These were processed by a statistical programme that decided when words were synonyms or homonyms. In this way, lists of synonymity in each language were produced. The source words were translated into the other language, and the translations were included in the first list, creating a unified thesaurus with entries in both languages, and synonyms in both languages for any entry.

The user could specify a search word and, using the thesaurus, would retrieve documents in both languages. The system provided controls for the search that are not detailed.

46 There may actually be an Estonian service that is as old, or older -- but this did not become operational.

above. The DATUM service was discontinued in 1979, but the bilingual thesaurus remains a major example of a rather innovative attempt to solve the problem of retrieving documents from a multilingual data base.

A simpler support is the generation of language-relative templates for displaying documents. Documents such as those above from the European Communities CELEX system have a large number of terms defining what data are found in the field. These terms may easily be provided in the language of the user, though the content of the field still will be identical for all users. Often the content has a form that is not very language sensitive (typically dates, citations, names of authors, etc), and the help provided by such a language-sensitive template is considerable.

VI. COMMUNICATION BETWEEN REGULATORY MANAGERS

The exchange of information on regulations is not only a question of access to data bases, but also of communication between regulatory managers. This small section of the papers emphasizes this traditional and indispensable aspect of regulatory cooperation: learning of and from other’s experiences.

To improve the exchange of information on national regulations, the International Legal Information Network was initiated in 1991. The institutions behind this initiative are, among others, Centre d’information juridique internationale, Computer Center for Information Dissemination of the European Communities, Council of Europe, Harvard Law School, International Labour Organisation, Library of Congress (USA), Pan American Health Organisation, and World Health Organisation. The objective of this initiative is to improve the availability of national legislation. A conference system (ILIN) is under preparation under the administration of Cornell Law School in the U.S., and a data base documenting regulations, supported by libraries in different countries, will be established by Harvard Law School. 48 This is, however, only one of many initiatives where regulatory managers have set up some sort of information system among themselves.

Computer-assisted communication systems allow several forms of exchange of information. There are electronic mail systems based on list servers: the subscriber to a list will have a copy of any message mailed to the list. This makes it possible to "broadcast" requests for information. As the list may have many thousand subscribers, this can be compared to asking an oracle for an answer. A list will be specialised to some extent to make its domain appropriate for users.

There are also bulletin boards where notices are pinned, and where comments may be attached. This allows for a communication similar to conferences in which discussions are proceeding. Bulletin board systems (BBS) are also generally specified concerning interests, and some are designed to attract lawyers and regulatory managers.

48 ILIN-91 is already available in book form from UN-IFO Publishers, Sarasota, U.S., and Legal Library Publicising Service, Yeovil, U.K. The ILIN-92 is under publication, and it is reported that a conference (ILIN-93) is planned for France.
Obviously, brief messages are not the only communications that may be conveyed in this manner. The text of a regulation may be communicated through a computer-communication network, often more easily than transferring files by a physical medium like a diskette as the communication protocol provides some sort of compatible format.

Regulatory managers rely on communication, and computer-assisted communication methods are efficient and convenient. One therefore expects regulatory managers to be a user group that will increasingly appreciate the potential for improved performance, and demand more services.

VII. CONCLUSION

This paper has looked at some aspects of communication and information-sharing between regulatory managers facilitated by information technology. Access to the regulations of international organisations and countries is today facilitated by computerised systems. But these systems have not really been designed to meet the requirements of regulatory managers; rather, the end user is seen as a lawyer advising a client on a legal problem, or a librarian locating a certain document.

The regulatory manager has different needs. Perhaps there are two aspects related to a certain regulation on which the regulatory manager would like to have information: (1) the policy issue addressed when the regulation was developed -- its objective, the comments expressed by those involved in reviewing the regulation, etc. This may be of interest to a regulatory manager within another jurisdiction trying to develop regulations within the same domain; (2) evaluations of a regulation -- all types of evaluations in the form of statistics, legal literature or other items of information that will help a regulatory manager to learn whether a certain regulation achieved its objective -- or, if it failed, the probable cause.

One may easily see the possibility that initiatives -- like the ILIN mentioned above -- will grow into an international service for regulatory managers, exploiting the powerful tools of information technology to improve communication and cooperation. It may be possible to experiment with different types of regulations, run simulations of the different types against a model of the society in which the manager works, etc. Without pursuing this perspective, one may -- perhaps -- see the outlines of a new and exciting way in which regulatory managers can profit from the experience of others, and virtually turn the world into a regulatory experimental laboratory.