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On the preparation of better law graduates and ICT jurists

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Legal informatics and ICT law

Legal informatics and Information and Communication Technology (ICT) law is an interdisciplinary field connecting an exact science (computer science) with a human science (law)

The applications are ingrained with the computer use and date back to the 1940s

Its transversal and systemic approach to every legal profile involved in ICT gave rise to a tradition of practical- and application-oriented support

..it is impossible to give a precise definition of the scope of jurimetrics. As in any empirical discipline, the definition will be given by the activities of the scholars and certainly it will expand and modify, every time experiments and experiences will solve specific problems (L. Loevinger)

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Topics of Legal informatics and IT law

The main topics deal with

- constitutional issues in the so-called Information Society
- the digital document and its legal validity
- electronic signatures, electronic public administration
- e-commerce, software and data copyright and intellectual property rights
- digital contracts
- e-procurement
- technical norms

The main thematic areas where Legal informatics and IT law gave rise to significant research and application results are

- digital sources of law
- legal language and computer science
- data privacy
- information systems for the judiciary
- e-government
- hypermedia and expert systems in law
- legimatics, security and ICT forensics
- e-teaching law

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Industrial society and Information society

- Industrial society:
 - introduction of new fields e.g. Labour Law, Industrial Law, Environment Law; strong modifications to Commercial Law; influences to Penal Law, Administrative Law
 - it caused small modifications to the work of the law professionals (**a knowledge and information processor**): the supports are still paper and pen
 - the birth of **IT law** when computers were introduced
- Information society:
 - introduction of new sectors e.g. Data Protection, Electronic Documents; strong modifications to Industrial Law; influences to Civil Law, Administrative Law, Private Law
 - It caused big modifications to the work of the law professionals (**still a knowledge and information processor**): the supports are digital devices
 - the birth of **legal informatics**

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Law and Computers



ICT law



Legal
informatics

(Giovanni Sartor)

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Legal informatics and ICT law as a separate field in the study of Law



- IT law and Legal informatics deal with the common ground of legal issues where ICTs are concerned, allowing each traditional field of legal studies to have a view and interpretation on them
- the consideration that each field has a **prerequisite in the knowledge of ICTs**, brings to the consideration that *IT law and legal informatics* are not ancillary topics but a **unifying** element of characterization of an autonomous field of legal studies
- ICTs are not limited to specific functions nor to limited social environments: they shape the social framework where individuals and enterprises act. In the Information society, data represent the events produced by every social actor: their management is the management of the event

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Human Rights in cyberspace

Contracts in cyberspace

Property in cyberspace

Crime in cyberspace

Is **cyberlaw** a new kind of the law of the horse ?

(Courtesy of Karol Dobrzeński, Toruń)

Independence of Legal informatics and ICT law

- Legal informatics and ICT law as a separate field in the study of law: it deal with the common ground of legal issues where ICTs are concerned, allowing the interpretation that each traditional field of the law studies has a view on them
- ICTs are not limited to specific functions nor to limited social environments; **ICTs are general and shape the society itself in the Information Society in contrast to what happened in the Industrial Society where ICTs served simply as a tool**
- Information is a commodity, a means of infrastructure, a representation tool in a society in which **most operations are carried out through representations of what we do or what we are**
- The consideration that each field of law has a prerequisite in the knowledge of ICTs, brings to the consideration that **Legal informatics and IT law are not ancillary topics but a unifying element of characterization of an autonomous field of law studies**

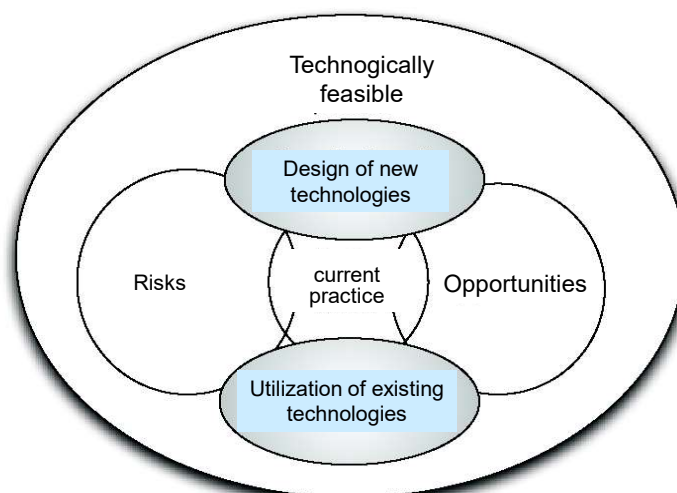


Feasibility of legal solutions

- A deep insight of several topics in the ICTs makes every kind of operation in the Information Society clear and understandable, in particular in the field of law. The knowledge of ICTs allows us to define the feasibility of legal solutions and to frame them in the Information Society; starting from an actual legal status (*de jure condito*), the determination of what can be done (*de jure condendo*) needs a real and practical understanding of what the ICTs can do for us
- Only starting from the knowledge of ICTs can one understand the opportunities and the risks of the activities in the Information Society. Therefore not only *what we are* but *what we can be* in the Information society depends on the ICTs

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ICT feasibilities and applications of Legal informatics and ICT law



(Giovanni Sartor)

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Framing of the law

Objectives of education in these legal fields are:

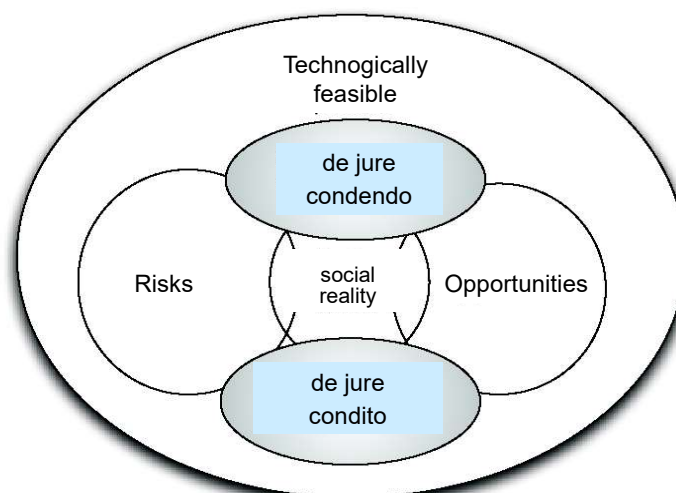
- to provide the market with law operators able to integrate legal knowledge with ICT capabilities and insight and to manage the penetration of ICTs in any sector of law studies and practices, e.g.:
 - software houses
 - law firms
 - public administration
 - law enforcement agencies
- to give the student an interdisciplinary preparation in Legal informatics and IT law;
- to give the students an international vision.

Moreover the ICTs contribute to determine the framework of law in our society, i.e. the *way we must behave*.

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ICT feasibilities and what we must-be



(Giovanni Sartor)

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Studies in Legal informatics and ICT law: objectives



- To provide the market with law operators able to integrate legal knowledge with ICT capabilities and insight to manage the penetration of ICT in any sector of law studies and practices, e.g.:
 - software houses
 - law firms
 - public administration
 - law enforcement agencies
- To give the student an interdisciplinary preparation in **IT law** and **legal informatics**
- To give the students an international vision and foreign languages skills

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Teaching Legal informatics and ICT law



- Legal issues in the ICT fields have been a concern to computer scientists and practitioners interested for the legal implications of their work, to managers concerned with the legal responsibilities of their jobs and to law students and law operators interested in developing insight and experiences relating to computers
- In case the people attending the courses on Legal informatics and IT law **know about and use computers regularly**, a traditional large unit of basic education in computer architectures and computer science **is avoided** in order to tune attention to legal questions involving copyright, privacy, contracting, taxation and the like

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Contents of the teaching

Usually, the contents of the teaching deal with:

- the daily legal concerns of practitioners in the computer fields such as to deal with
 - an understanding of advocacy positions that practitioners and managers might present to govern bodies and public fora
 - to achieve a better understanding of technical organizations and political development in the ICT field and help the practitioners position themselves in the application field
 - to and analytical skills aimed at continuing develop reading, research education in this field
- how ICTs are or might be applied to areas such as health, business, commerce, education and government, particularly when dealing with legal questions
- artificial intelligence topics especially in regard to expert systems and law, intelligent agents and legal reasoning, as well as normalization of legal norms and legal decision processes from a jurisprudential perspective using ICTs as tools for legal research

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A full fledged scientific discipline

- Legal informatics and ICT law is the part of computer science that deals with law studies and includes the study of legal problems arising when ICTs are employed
- Legal informatics and ICT law uses
 - the methods and tools of computer science when it supports legal knowledge, implements legal reasoning and when it supports legal activities in legislation, jurisdiction, administration and law firm management
 - legal doctrinal knowledge when it deals with the problems arising after ICTs have begun to be used in designing theoretical analysis and proposing legal solutions
- Therefore Legal informatics and ICT law is a **full fledged scientific discipline** that passed from a research niche the moment information systems, databases and network infrastructures shaped the business, administration and political arenas

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Scientific pioneers



- In Europe there have been decades of high-level research experiences developed by research institutions
- Pioneer experiences made not only by academicians but also by enlightened members of the judiciary, researchers in scientific and technological centres, single lawyers and law firms
- Significant work was done as well by librarians and documentalists, many times without a formal training either in computer science or in law
- The effects over education have been:
 - in few countries the university laws have recognized Legal informatics and ICT law as an autonomous field of research and university-level teaching
 - recently Legal informatics and ICT law has begun to be a mandatory course in some universities

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Quality and accreditation of teachers



- many **contract professors** supplied the lack of official university professors and lectures to teach courses in Legal informatics and IT law
- their average quality was good but this injection of motivated professionals had a limited effect in reducing the knowledge gap in terms of scientific results and improvements of research in the field
- the perception by society of the distinction between research and practice blurred and the risk **considering professional consultancy activities as scientific work** broadened
- bottom-up approach of representation toward government bodies
 - not only looking for due recognition of the teaching
 - pushing for research policy as pressure groups

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Faculty of Law UniBo offerings - I



- CIRSIFID, since 1986, was the propulsive entity which defined and helped in implementing courses in ICT law and Legal Informatics in degree courses in Law, in ICT Law Operator, in Theory and Techniques of e-Governance (Faculty of Law of the University of Bologna), two Doctorates (ICT Law and Bioethics) and one Master on ICT Law of the University of Bologna
- If we concentrate in the main curriculum of the Faculty a path for law students to become more knowledgeable is seen going backward from the course **Informatics for the Legal Professions** of the the last year
- Subjects include an evaluation of the different kind of information systems, virtual enterprises, Information systems and knowledge management, ICT for lawyers and the magistrates, ICT for e-justice, E-government issues, digital forensics; legal aspects of sale or lease of computer goods and services; issues of contract and tort liability relative to marketing and use of computers; special problems in commercial, intellectual property and information law arising from computer use.

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Faculty of Law UniBo offerings - II



- One important building block of the mentioned path is the elective course of the last years **ICT forensics** which examines evidences during enforcement and court trial broad either from the technical view point and from the legal one. Topics include: review of cyber crime, including hacking, viruses, and other forms of malicious software; methods to investigate cyber crime, focusing on requirements for collection and reporting of evidence for possible use in criminal cases
- To take full advantage from these two advanced courses, students must have followed in their second year the mandatory course of **ICT and Law**
- it is made up of two parts:
 - ICT law and law and legal informatics, where ICT law deals with: hardware and software., algorithms and programs; digital data representation; archives and data bases; communication and the Internet; information systems and advanced exploitation of them
 - Legal informatics cover the main issues of privacy, intellectual property rights, Internet governance and e-commerce

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Faculty of Law UniBo offerings - III

In the last four or five year more and more law courses have included references to ICT issues and a few specific course were established

- **Private ICT law** deals with the Italian laws on the protection of copyright and other rights connected, data protection, digital administration code, consumer law code and the European directives on selective legal aspects of Information society services, in particular electronic commerce in the internal market
- **Internet law** deals with: the norms regulating legal acts on the Internet; the applicable legislation. the contract as the most effective means for innovation and regulation on the Internet, e.g. contracts for accessing the network, e-commerce contracts, computer contracts; fundamental rights on the Internet and torts; the protection of software, databases, multimedia; mans of payment; the electronic money; legal aspects of ICT security
- **Criminal ICT law** deals with the major problems related to computer crimes, the problems related to the economical transactions on the internet and their penal effects. It covers the principles of criminal law: fraud, guilt, complicity, circumstances and cyber crimes

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Faculty of Law Unibo offerings - IV

- **Information law in Civil law** deals with the regulation of television and radio broadcasting, freedom of expression, freedom of information, radio and television services, public access to important events
- **Communication law** consists of a case based approach to civil profiles such as speech rights in mass media, liabilities of the different actors, privacy issues for the press and the television; marketing information, online communication, news distribution, extra contractual liabilities in the Internet
- **Procedural Civil law** covers fully the legal profiles of Italian online civil trial
- **Media law** deal with such subjects as limit to the free expression of thought; European frame for televised and web television broadcast, Internet governance
- **Criminal law** deals with the core part of the Italian criminal code and procedural criminal code where computer crimes and crimes performed via ICT are defined and regulated

E-learning techniques are used to teach part of Family law, Ecclesiastic law, Human rights

Messaging systems and social networks are used as a tool in many courses including Labour law, Philosophy of law, Roman law

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Teaching ICT to law professionals at UniBo - Seminars and Masters



There are several approaches, implemented at the University of Bologna Faculty of Law: **courses and series of seminars** for graduate students, civil servants, members of the judiciary and law operators; **a Master program in Legal informatics and ICT law**, advanced seminars on research topics connected with the **Doctorate in Legal informatics and ICT law**

- Typical **series of seminar** which are given on an almost regular basis or upon request by interested users deal with: queries to legal data bases and legal information retrieval; digital signatures and electronic documents; legal drafting techniques and related software tools; computer forensics, framing of laws about Intellectual property and privacy over ICT; models of legal reasoning
- **Master level** implements the vision of training a new professional type, **the ICT jurists**, transferring them a number of different competencies, and providing scientific, methodological, and technical bases needed to tackle the problems arising in the areas of
 - legal and judicial informatics and telecommunications law
 - intellectual property and Information society
 - ICT contracts; electronic signatures and e-commerce
 - privacy protection and new technology; computer crimes and network security
 - computer forensics
 - e-government and information technology in the public administrations.

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Teaching ICT to law professionals at UniBO - Doctorate



At the Doctorate level there are advanced initiatives, **connected with the research activity, which happens to become more general educational activities** on occasion of congresses, summer schools and seminars by visiting scholars. In the last years the topics may be divided in two areas

- **ICT and Law** where there have been research and educational activities regarding: privacy and data protection, virtual and electronic institutions, legal and normative aspects of multi-agent systems, security and trust in open systems, management of geographical information systems and of spatial data, legal communication interception
- Legal Informatics, more specifically **ICT Legal Sources Modelling**, where there have been research and educational activities on the application of informatics within the context of the legal environment; it involves law-related organizations on the topics: e-government ICT architecture and the related legal issues, management of legal documentation with XML techniques, semantic web and ontology for modelling legal resources, accessibility and usability of the e-government services, ICT for improving the governance, legal drafting principles

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Conclusions - I

A deep insight into several topics ICTs makes every kind of operations in the Information Society clear and understandable, in particular in the field of law

Starting from the knowledge of ICTs one can understand the opportunities and the risks of the activities in the Information Society

Therefore not only **what is** but also **what can be** in the Information Society depends on ICTs

Moreover ICTs contribute to determining the framework of law in our society, the way society must behave, i.e. **what must be**

Quality of education is of paramount importance and a guarantee comes from the **quality of research** the researchers are performing

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Conclusions – II

In the last decade a great deal of legislation has been passed regulating the new technologies and legal practitioners have become aware of these technologies and proficient with their basic utilization

There is still have a long way to go, but we saw several hints of laws whose contents and forms prove adequate to the new technologies

The ICT developments are difficult to predict and so cannot be addressed by **any preventive legislation**

To set up an adequate ICT law, there is the need to rely on the work of a new professional type, **the ICT jurist**, someone versed at the same time in information technology and the law, so as to be able to forge creative and effective solutions to the juridical problems emerging in the Information society

The need to provide each and every student with general knowledge and skills on ICT and law is prudently accepted by the Faculty members. Work placement of ICT jurists is encouraging: positions in the electronic preparation of legal resources, ICT forensics experts, consultancy to law firms for ICT issues started to grow alongside the traditional legal professions; and we assisted to good interest and acceptance of the initiatives by the institutions, the judiciary, the lawyer and civil servant associations

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