



**C.I.R.S.F.I.D**  
**Alma Mater Studiorum Università di Bologna**  
**Research Centre of History of Law,**  
**Philosophy and Sociology of Law,**  
**Computer Science and Law**

# XML and Legal Source On-line

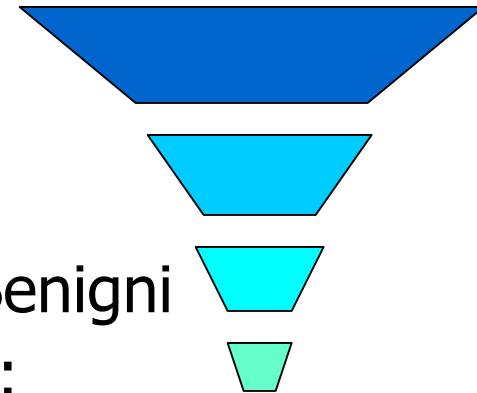
Seminar "Legal Informatics in Italy"  
Bologna, 19th June 2003

Prof. Monica Palmirani – CIRSFID

# Legal Source On-line

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- 4 presentations but that belong to the same research field: **legimatics** – build IT applications to help the enter life-cycle of the production of law
- Norma-System research group: 13 people
  - 5 legal background, 6 with technical background, 2 with sys-admin competences
- Overview and trends – Palmirani
- A particular detailed view on one hot topic: Semantic web – Brighi
- Norma-Editor: a piece of the entire Norma-System project – Benigni
- Automated Extraction of Normative References: a particular part of the Norma-Editor



# Outline

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- Law source – Scenario&Some problems
- Research Fields
- Hot Topics
- Some Excellent Cases using XML
  - “Norme in Rete” national project
  - Norma-System project and Database of the Supreme Court
  - LEXML.<something> (SW, NL, DE, IT), LegalXML (USA), MetaLEX project (NL), E-Law project (AU)
- Future Perspectives

# The problem description: status of the Italian legal system

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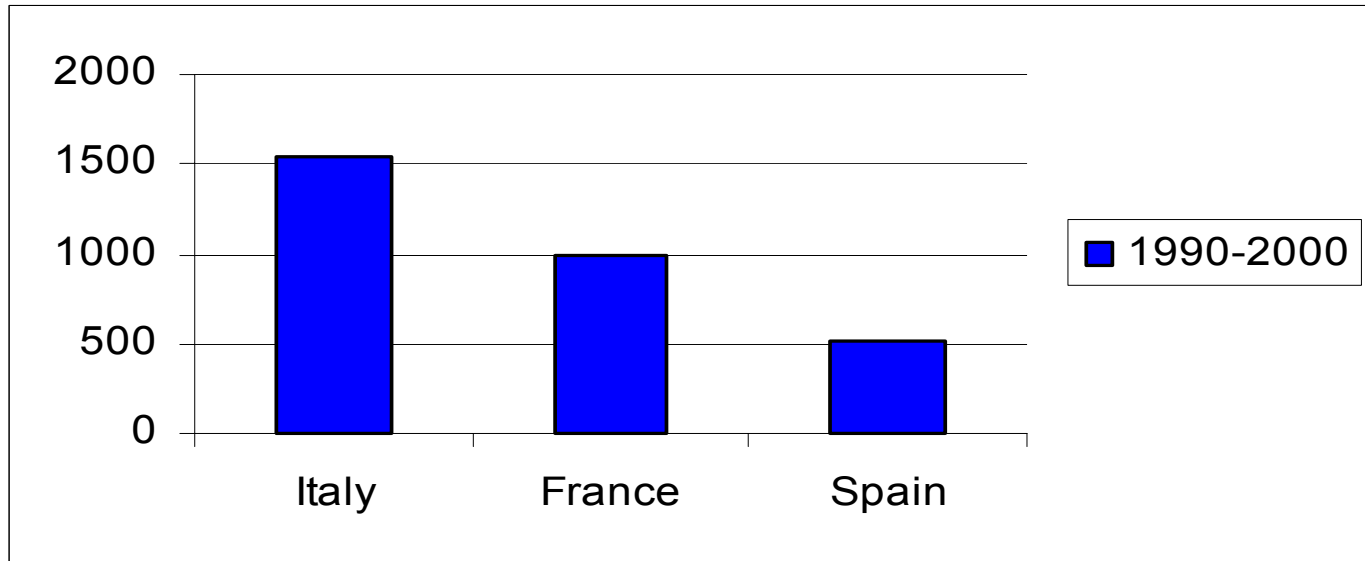
Several problems are affecting the Italian legal system:

- normative **overproduction**  
(about 50.000 law acts since 1861 to now)
- **fragmentation** and **overlapping** of the modifications domain  
- a lots of little modifying laws
- emerging new **soft law sources**: deontological codes, authority acts, new institutional bodies (commissions)
- **unclean** law-making and legal drafting processes (i.g. inclusion of norms not pertinent with the main topic of the law, implicit abrogation or modifications, conditioned abrogation depending to future events, etc.)
- **misleading** about the range of competences assigned to national and regional bodies (the recent modification to the Italian Constitution Act, Title V inverts the relationship between central and regional powers)

# Some statistical data

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- the Italian law approved in the last XIII legislation 1996-2001 - are **906**
- in France in the period 1990-2000 were approved **992** laws
- in Spain in the same period **517\***



\* from “Rapporto 2001 sullo stato della legislazione”, Camera dei deputati, XIV legislatura, 20/06/2003  
Osservatorio sulla legislazione.

# Side Effects

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- **unknown** law domain: it is not well-known the total number and the **list of the documents**
- this affects the able to **access to the norms** not only in Internet. Internet makes more evident this gap
- **uncertain** law **applicable** – it is not known the law corpora **in force** in this moment
- this affects the able to determine the **status of the normative system**
- this phenomena produces a **social and economic costs** for the citizens, economy actors, administration bodies - i.g. **e-commerce** it is affected to a not adequate **e-government growth**

# Institutional References

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- Italian E-Government Action Plan 2000 and 2002
  - more transparency
- Action Plans eEurope2002, eEurope2004
- Com (2003) 71 final “Updating and simplifying the Community acquis” - it is very important recommendation of the EU Commission
  - 6 main objectives
    - simplify
    - consolidate
    - codification
    - cancel the obsolete law
    - transparency
    - maintain the system

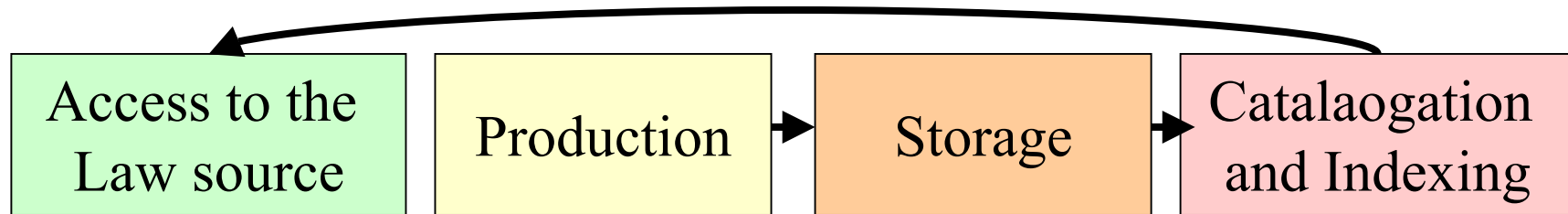
# Legimatic

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- Scope of this discipline is to design and implement IT solutions for helping to manage the law-making process and to alleviate these side effects and problems
- It use:
  - Editor, word processor
  - Database techniques
  - IR techniques
  - Knowledge management techniques
  - Web technologies – CGI, XML, web services, web servers
  - Linguistic competences
  - Logic and AI competences

# Legimatic Model

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- **On-Line**
- **CD-ROM**
- **Hypertext**

- **Workflow**
- **Word processing**
- **XML family**

- **DBMS**
- **DMS**
- **file system**

- **Thesauri**
- **IR**

# Hot topics

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1. **Free access on-line** (Internet) to all the original law documents
2. Improve the **searching features**
3. Building in automatic way the current **law in force**
4. Define **standards** for managing the law sources on-line
  - standard for the normative structure – XML, DTD
  - standard for expressing the **cross references** between different law document collections - URN
  - Improve the **integration** between different legal document systems – **interoperability** – web services

**XML technology seams to help a lots**

# XML techniques

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- XML – meta-language i.e. language for defining new languages
- standard defined by W3C in 1996
- family of techniques for representing the parts included in the content (documents, data, information, etc)
- independent to the graphical representation
- independent to the hw&sw platform
- improve data interchange
- more flexible respect HTML because permits to define new tag by DTD
  
- **Very good set of techniques for resolving all the problems mentioned**
- In Europe: LEXML, Legal XML, MetaLex, E-Law
- In Italy: Norme in Rete project

# 1. Free access on-line: GUIRTEL

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- Official law bulletin on-line only for 60 days after the date of publication
- <http://www.ipzs.it/>
- In Europe Euro-Lex
- <http://europa.eu.int/eur-lex/en/index.html/>

## 2. Improve searching: Norme in Rete Project

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- Since 1999 we have been included in a national project promoted by the **Ministry of the Justice** and AIPA called "NormeInRete" –NIR- with the participation of the major body administrations in Italy
- The aim of the project is to build a **unique portal** based on a spider for accessing to the **national** and **local** regulation (**139387**)
- The portal collects and indexes all the documents in remote way directly by each administration
- For this aim the project team built standards tools using **XML technology**:
  - **three DTDs** for marking all the Italian normative document in the same way
  - syntax for represent in a unique way the hyperlinks to the noms - **URN syntax**
- Our department is now involved in the project for adapting the Norma-System to these specifications
- We are build a **prototype editor for the Court** of Cassation able to mark-up in XML the normative text (see you later)



### Ricerca semplice

La Gazzetta Ufficiale  
degli ultimi 60 giorni

Nuovi provvedimenti  
pubblicati in Gazzetta  
Ufficiale suddivisi per  
materia

Servizi al cittadino

NORMATIVA:  comunitaria  statale  regionale

tutte le parole  almeno una parola  frase esatta

Istituzioni  
Partecipanti

87832 provvedimenti  
indicizzati al 7 Giugno  
2002.

43619 provvedimenti  
classificati nel  
Catalogo delle Norme  
al 28 Maggio 2002.

### In primo piano

Progetti di legge

Giustizia  
Amministrativa

Atti Normativi di  
prossima  
pubblicazione

Standard di progetto

27 maggio - 1 giugno 2002

Affari esteri

Affari europei

Agricoltura, caccia e pesca

Ambiente, territorio e protezione civile

Assistenza, previdenza e assicurazioni

Banche, credito e moneta

Bilancio dello Stato e manovra finanziaria

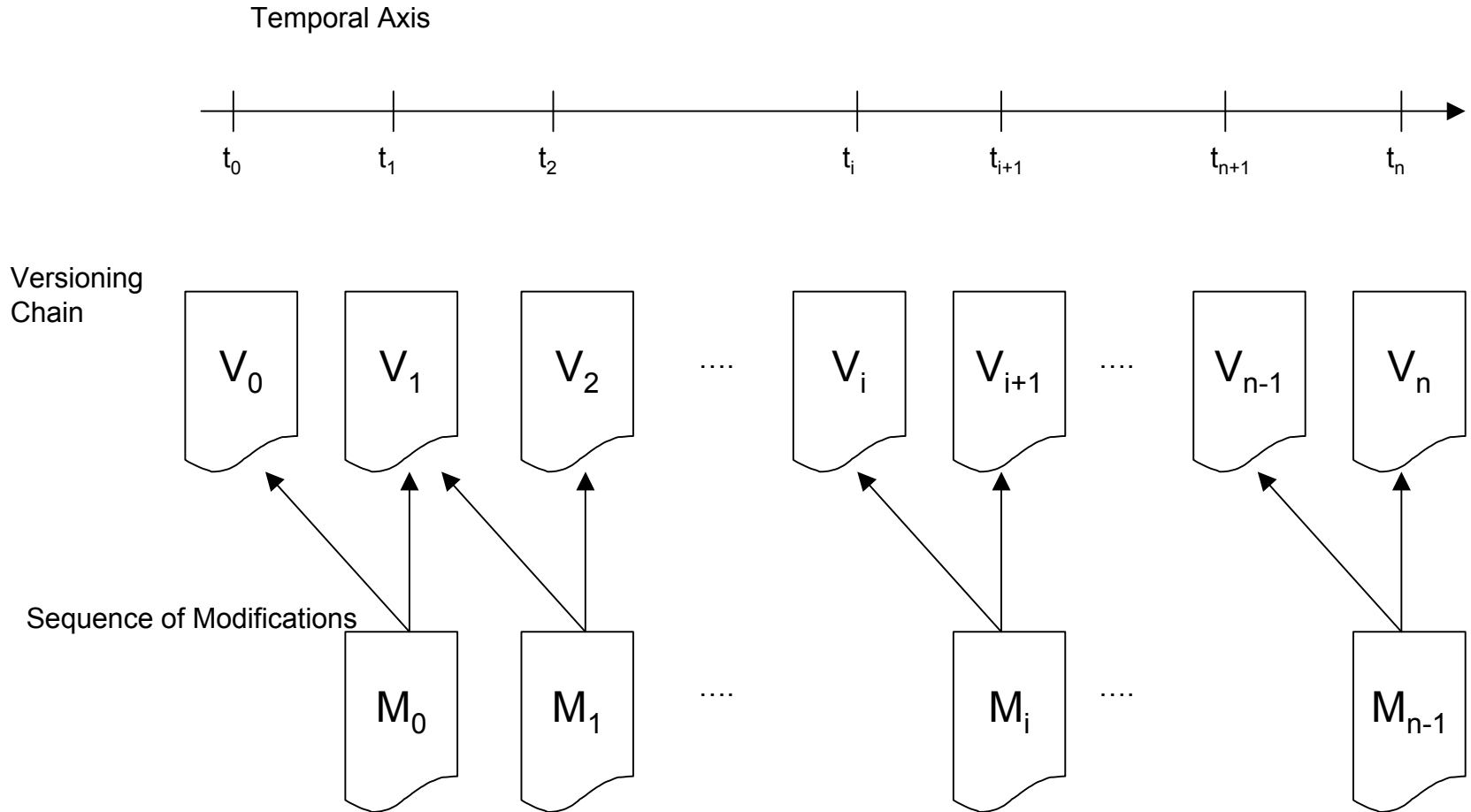
Commercio con l'estero

Commercio, servizi e tutela dei consumatori

Cultura, spettacolo, sport e turismo

Difesa e forze armate

# 3. Build law in force: Consolidation



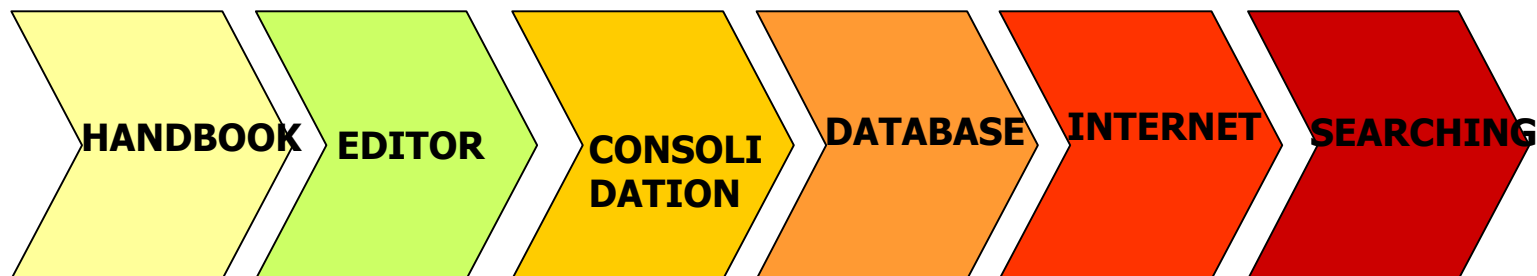
# 3. Build law in force: Norma-System Project

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Started in 1993 with the contributions of Pattaro, Sartor, et.al.,  
several projects on-going: Univ. Bologna, Cassation Court, etc.

The base modules are:

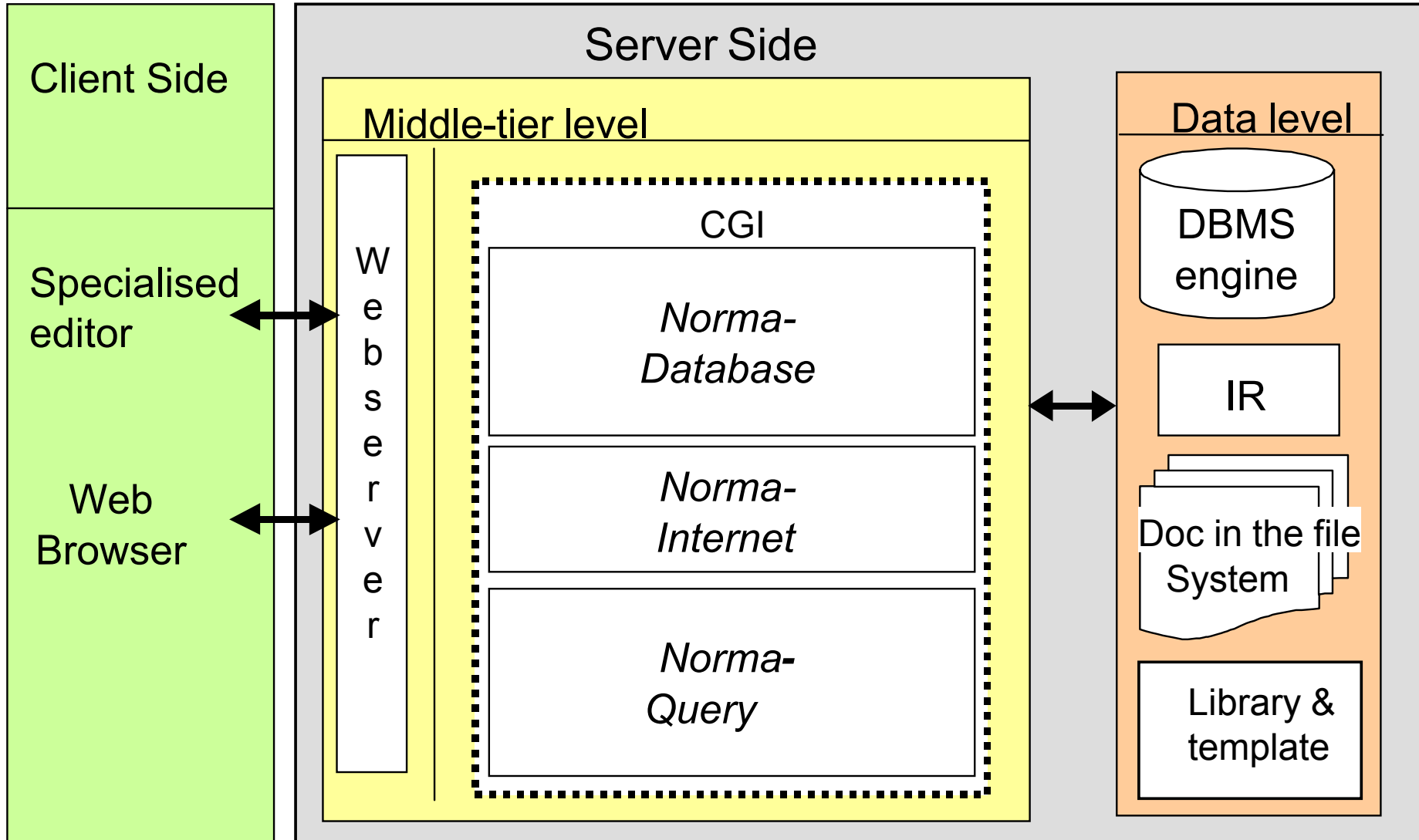
1. a Handbook for Drafting Normative Texts
2. a module for drafting acts - EDITOR BASIC functions
3. a module for consolidating acts - EDITOR ADVANCED functions
4. a database module on the server side
5. a module for publishing and viewing the documents on the Internet
6. a search module



20/06/2003

**Norma System**

# System Architecture



## 4. Standardisation: XML

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- All the mentioned points are based on this one
- Norme in Rete architecture is base on this principle, to define a unique national standard:
  - for representing the **structure** of the legal documents by three kind of models (three DTD: flexible, complete, basic)
  - for referring the legal sources on the web – **URN** - Uniform Resource Name;
  - for a shared using of **metadata** for describing added information not included in the text explicitly

# DTD elements

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Four categories are defined in the NIR DTD.

- *Structural elements*: i.g. header, title, date of delivery, articles, closing statement
- *Special elements*: i.g. normative references
- *Meta-information*: date of enter in force, date of publication, annotations, number of the official bulletin, URN
- *Generic elements*: elements used for formatting the text

# Example: Regional Law

LEGGE REGIONALE N. 1 DEL 10-01-2000  
REGIONE EMILIA-ROMAGNA  
NORME IN MATERIA DI SERVIZI EDUCATIVI PER LA PRIMA INFANZIA  
BOLLETTINO UFFICIALE DELLA REGIONE EMILIA-ROMAGNA  
N. 4 del 14 gennaio 2000

General  
data

IL CONSIGLIO REGIONALE HA APPROVATO  
IL PRESIDENTE DELLA GIUNTA REGIONALE PROMULGA  
LA SEGUENTE LEGGE:

START  
STATEMENT

**TITOLO I**  
**OGGETTO DELLA LEGGE, FINALITA' DEI SERVIZI E SOGGETTI DELLA PROGRAMMAZIONE**

**ARTICOLO 1**  
**Finalita' e modalita' attuative**

1. La Regione riconosce le bambine e i bambini quali soggetti di diritti individuali, giuridici, civili e sociali e opera perche' essi siano rispettati come persone.....

BODY OF  
THE LAW  
AND  
STRUCTURE

La presente legge regionale sara' pubblicata nel Bollettino Ufficiale della Regione.  
E' fatto obbligo a chiunque spetti di osservarla e farla osservare come legge della Regione  
Emilia-Romagna.

FINAL  
STATEMENT

Bologna, 10 gennaio 2000

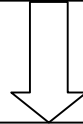
VASCO ERRANI

# URN for the legal sources on-line

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- Method for defining the resource on the net in an unique way independently to the physical location of the file
- IETF (*Internet Engineering Task Force*) has defined some criteria of composition of the URN
- Norme in Rete is defining this specific model for the legal sources on-line

Legge n. 675 del 31 dicembre 1996



urn:nir:stato:legge:1996-12-31;675

<autorità> ":" <provvedimento> ":" <estremi>

<estremi> ::= <date> ";" <numeri>

# XML Result

## following the NIR DTD(i)

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```
<?xml version="1.0!?">
<!DOCTYPE NIR SYSTEM "nircompleto.dtd">
<NIR tipo="originale"
  xmlns:xlink='http://www.w3.org/1999/xlink'
  xmlns:h='http://www.w3.org/HTML/1998/html4'
  xmlns='http://www.normeinrete.it/nir/1.0'>
  <LeggeRegionale>
    <meta>
      <descrittori>
        <pubblicazione tipo="BUR" num="4" norm="20000114"/>
        <urn>urn:nir:regione.emilia-romagna:leggeregionale:2000-01- 10/1
        </urn>
        <vigenza id=v1" inizio="20000130"/>
      </descrittori>
    </meta>
    <intestazione>
      <tipoDoc> LEGGE REGIONALE </tipoDoc>
      <numDoc>N. 1 </numDoc>
      <dataDoc>DEL 10-01-2000</dataDoc>
      <emanante>REGIONE EMILIA-ROMAGNA</emanante>
      <titoloDoc>NORME IN MATERIA DI SERVIZI EDUCATIVI PER LA PRIMA
      INFANZIA</titoloDoc>
    </intestazione>
```

# Future Perspectives

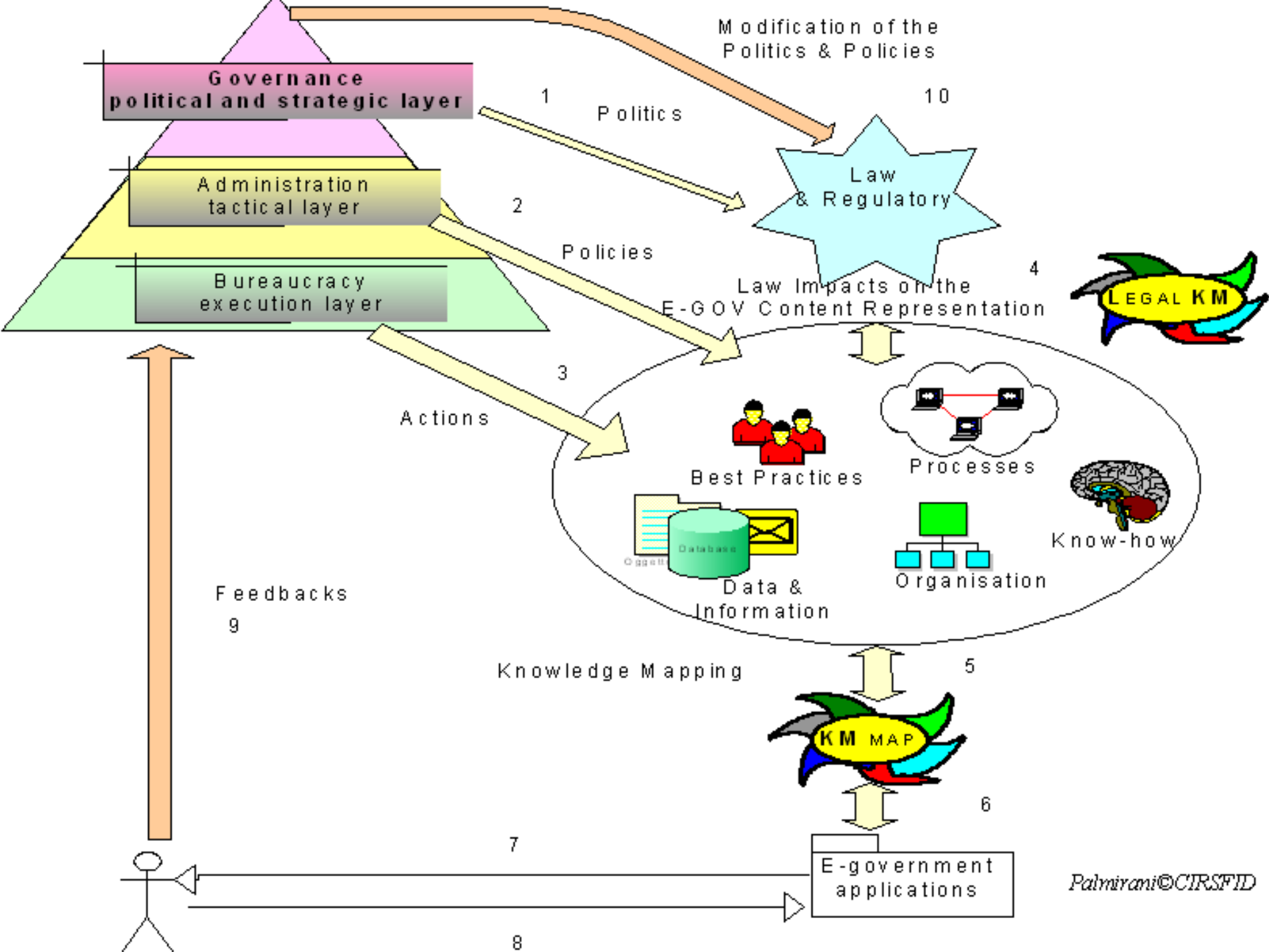
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Improve the **semantic** information inside of the law document related to the **syntactical parts**

Represent the **semantic meaning** of the norms (semantic web, ontology, RDF, OWL, etc.)

Use the **law corpora knowledge** as input for **life-event approach**

**SEMANTIC WEB and LEGAL ONTOLOGY**



# Thank you for your attention

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