ICT for Development: Strategies and Regulations

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ICT for Development: Strategies and Regulations: when we speak about such a complex topic I believe that the most important goal is to reach a common language. The problems we are going to deal with, during the Conference, require a multidisciplinary approach, and, for a good interplay, a common linguistic and imaginative framework is mandatory.

So, the index of my presentation corresponds to the break-up of the title, because my effort is just to focus on this subject.

By a paradox, I would say that the first goal is the most important: to have a shared language among all the actors. When we have fully reached this goal, what remains to do is a very simple task (it is just a software and hardware matter).

It may seem a paradox, but it is not the only one in this area.

Focusing on the 3 parts of my title involves the examination of:

Firstly, the ICTs: what we mean by it. I will try to draw a map of ICTs;

But we need to have an idea of those ICTs that require (or may require) some regulation or strategy. So I will try to draw a map of ICTs related to Strategies and Regulations.

Then, I will focus on the concept of ICT for development. What could be an acceptable definition of ICTD and what are its peculiarities.

The 3rd part of my presentation will be dedicated to the concept of Strategies and regulations in the field of ICT development.

What is the role of S&R as enablers of Information Society

What we can see opening the box of S&R (S&R from inside)

What is INTEROPERABILITY

What are the main actors of S&R for ICT development?

I will close the presentation, attempting to give to you some insight about what could be the role of Parliaments, and describing the experience of the Italian Chamber of Deputies.

ICT : A MAP

The second slide is a sort of synthetic map of the technologies of information and communication

As you know, the expression ICT includes a very broad range of instruments, devices, rules, processes, protocols, competencies, languages, often distant and not in communication each other. I'm not a technician, but we can try together to draw a sort of map of these technologies by grouping them.

I propose these areas:

Telecommunication technologies (in broader terms we can say "connectivity technologies"), including the array of protocols that aim to improve the connectivity;

Databases technologies (particularly shared databases technologies);

Semantic technologies (we can locate here different objects like mark-up languages, Information retrieval, metadata). This is the area where I personally had some experience during the development of the project "Norme in rete";

Retrospective conversion technologies (Digitalisation of collections of analogical data). This is another area where Italian Chamber of Deputies is directly committed;

Safe transaction technologies (digital signature, cryptography, privacy) ;

Cooperative architectures (for instance, for services sharing);

Electronic publishing;

Then I put at the centre of the map **INTERNET** because it is, more or less directly, connected to all the areas of the map.

During the presentation I'll refer to ICT as the complex of the items on this slide. We could just leave out the area of **telecommunications**, because regulatory and strategic problems in telecommunications field depend strongly on 2 conditions (status of physical infrastructure and openness of competitive market) mostly depending on regional and national situation. So, the problems of Strategies and Rules in this field have to be considered specifically country by country and not merely in a general way, as I'll do in my presentation.

ICT / S&R MAP

Let me point out that each of these areas requests regulatory frameworks, or – at least – strategic addresses.

Starting from **shared databases**, we have experienced that they need a strategic agreement among all the institutions involved; the shared database is the result of a political choice, the result of a policy (that is, of a strategy). Then, in this area, standards are needed (for data-exchange), and interoperability protocols, to help the data-flows and to avoid duplications.

Semantic technologies involve a sound standardization activity. In XML standardizing of Italian legislative acts, an interdisciplinary Working-group analyzed Italian legal acts – both legacy and current acts – for about two years, before the promulgation of the technical standard named “Italian legislative act DTD”.

Retrospective conversion, also requires standards and a legal discipline of electronic documents.

The **safe transactions technologies** require both technical standards and legal discipline of electronic documents, but require also specific legal rules (like that about digital signature).

In the area of **cooperative architectures** very important regulatory needs rise, like the discipline of privacy.

Equally, in the area of **electronic publishing**, copyright legal regulation is totally different from the copyright legal regulation of paper documents, and needs a new, specific, legal framework.

At last, in the regulatory framework of **telecommunications technologies** there are not only standards and technical protocols, but a sound market regulation (in many European countries we have a specific Authority in charge of market regulatory functions).

To sum up, we can note that real ICT projects are rarely included totally within one of the areas shown here. Often the project involves two or more of these areas. For example, a project of electronic publishing may involve murk-up languages or other semantic technologies; a project of service delivering via INTERNET involves architecture technologies, INTERNET technologies, safe transaction technologies. In these cases, not only the technological framework, but also the regulatory framework involved may be very complex.

ICT FOR DEVELOPMENT: A DEFINITION

The Conference that hosts our meeting can be included in a more general field, called ICTD, **ICT for development**.

In fact, the **challenges and the opportunities of ICTs to Strengthen Democracy and Parliamentary Governance** (the subtitle of the Conference) could be easily considered as challenges and opportunities to bridge the international information and knowledge divide.

What I would stress is that both the title and the subtitle of the Conference show us how reductive is to consider ICT simply as the **utilisation of ICTs in development efforts** encompassing such areas as poverty reduction, education, public health, (in general, improvement of the quality of life).

According to the ***Okinawa Charter on Global Information Society***, approved at the Okinawa Summit G-7 G-8 ***(July 2000)*** we have to broaden the traditional concept of ICTD to include at least:

the **promotion of good governance**. A theme like **e-government** is included within the field of ICTD initiatives: sharing and exchanging experiences, transmitting best practices, communicating each other the lessons learned, comparing regulatory frameworks and strategies in the area of e-government is a goal of this Conference and Professor Batini from the University of Milan will address this theme during the second day of the Conference.

But, I think that our definition of ICTD is incomplete if we don't widen it further.

In my opinion also exploration and experimentation of **new methods of inclusive policies** are a crucial point of ICTD.

Preparing this Conference and studying lessons learned about ICTD, I was amazed at some successful ICTD initiatives, technologically very basic and simple, but conceived in a very sophisticated way, grounded in a profound awareness of social and cultural conditions of the beneficiaries, stemming from a clear idea of inclusive policy. That happens because ICT are more and more pervasive, both in developed and developing countries, and sometimes a smart use of ICT can bring great efficacy also in a niche.

So, I propose to encompass within our definition also **e-democracy**. Its importance is growing also in less technologically advanced countries.

Therefore, I propose a very broad definition of ICTD aims.

"ICTD aims to universal access to the benefits of the Information Society".

In such a broad definition we should place the problem of ICT strategies and regulations. To include all what is relevant, our approach must be very general and comprehensive.

In this very general approach, we could try to identify some peculiarities that allow us to distinguish between ICT in developed countries and ICT(D), that is ICT in developing countries.

ICTD: SOME PECULIARITIES

I'm fully aware that sometimes this difference doesn't exist, but – generally speaking – we can select few critical points that stand out in the landscape of ICT(D).

The first critical point is the funding of ICT. We know that there is not an exact relationship between income levels and ICT penetration. A recent OECD study; titled "***Regulatory reform as a tool for bridging the digital divide***" ***(2004)*** shows variations among ICT penetration rates and income levels. But this variation is among developing countries and among developed countries, but the relationship is strong between developed and developing countries.

So we can affirm that ICT is an expensive tool and the first ICT(D) goal is to promote **low cost ICT**.

A second peculiarity of ICT in developing countries is that it has to cope with a weak civil society: I'm referring firstly to literacy levels, but also to ICT literacy levels, presence of strong market actors, organization of public services and public administration, and so on. In technologically advanced countries Information society is springing from a strong civil society, while in developing countries ICT **has to promote civil society** (instead of exploiting the high level of the civil society).

The 3rd peculiarity of ICT(D) is – probably – an advantage, a positive factor.

I could call it: "**the new comers' advantage**", because it is clear that in the ICT(D) the process of trial-and-error experienced by more technologically advanced countries can be avoided. On the basis of experience we can search for more efficient solutions, less wasting of resources, more planning, less spontaneity.

One perspective from which we can look at Strategies and Regulations is that of the enablers of the Information Society

I.S ENABLERS

These enablers are probably many, and mostly depending on local conditions.

In general terms, we can select 4 main enablers:

1. General economic and social development level
2. Telecommunications infrastructure
3. Human development capacity
4. **Strategies and Regulatory Frameworks**

Each of these enablers would deserve some words, but I want to stress 3 points:

- The first point is that ICT are so pervasive that even without one or two of these enablers we can have I.S. experiences. Nowadays even the "basic requisite" (telecommunications and electric network) can be partially replaced by satellite and mobile technologies. But these enablers allow us to **found the ICT experiences on a solid ground**;
- The second point is that there is a general consensus about the fact that **the 4th enabler** (Strategies and Regulatory Frameworks) **is of crucial importance**, both in developed and developing countries.
- The 3rd point is that there is a strong relationship between this slide and the previous one. That is: there is **a strong relationship between ICTD peculiarities and Strategies and Regulatory Frameworks**.

Particularly, without good strategies and good regulatory frameworks, ICT experiences are condemned to waste resources and high costs.

First and foremost we risk losing their natural diffusive potential, while we need exactly this potential to adequately promote civil society.

Moreover, without strategy and Regulatory Framework the ICT experiences are doomed to “dwarfism”, without connection with each other.

As Professor Batini will show the day after tomorrow, there is a high level of waste of resources in the ICT. Only by a holistic approach a developing country can afford relevant and expensive ICT projects without a too high risk of a total waste of resources. This **holistic approach** has not always been possible in technologically advanced countries, but it is possible for new comers.

I.S. STRATEGIES AND I.S. REGULATORY FRAMEWORKS

We often use these two terms as closely connected. They are both made up of prescriptions, more or less mandatory (R.F. are more mandatory, of course).

But this connection is only apparent: they are completely different instruments. Strategies, for example, are needed when financial resources have to be managed.

Strategies:

- Put different and non homogeneous initiatives in an homogeneous priority order;
- Select initiatives that have to be financed;
- Put single projects in a time scale;
- Search for the best technological connection among and between separate projects (INTEROPERABILITY);

And consequently

- Organize all branches of PA in a coordinated way;
- Are a typical Government instrument (political instrument);

but

- Strategies require a high technological awareness.

Regulatory Frameworks play a different role. Firstly, we can separate two layers of rules.

The first layer has two main goals

- The first one is to give a legal regulation to:
  - new rights
  - new offences
  - new markets
  - new institutions

  rising from Information Society development

This is a very comprehensive definition, within which we can include a vast array of legislation about privacy, e-commerce, copyright, cybercrime, telecommunication market…etc.

- The second goal is to give legal value to online transactions and to the electronic successors of paper legal documents. This goal includes legislation about the digital signature and legal value of electronic documents, regulation of the administrative services delivered via Internet, e-procurement …etc.
- I would also place in this first layer a third goal that we might call: giving a legislative basis to ICT strategic projects. An important Italian example is Article 107 of the Law n. 388/2000 that launched and funded the national project of a free current legislation database giving to the Chamber of Deputies, Senate and Government the responsibility of leading the project by means of a Steering Committee composed of the 3 Secretaries General.

But the Regulatory Framework has **a second layer**, very important in ICT. This layer is made up of technical rules, specifications, standards and protocols.

The ICT areas where technical rules are needed are many (probably there is not a single area that doesn't need them, as we have seen at the beginning of this presentation).

The importance of this layer is crucial in order to improve the **interoperability** among different systems.

INTEROPERABILITY: A DEFINITION

We can try to give a definition of this ICT "magical word":

A complete definition that I have found is:

The ability of systems, units, or forces to provide services to, and accept services from other systems, units or forces and to use those services so exchanged to enable them to operate effectively together.

A second definition, more simple, but clear:

Interoperability is:

To build coherent services for users, from components that are technically different and managed by different organizations

Here the stress is on the opposition between **coherent** services and **different** technologies and organizations.

The technical aspect of interoperability can be summarized in a few words: *ICT products have to be compatible with technical standards.*

It is important, however, to highlight that **interoperability is not only a technical matter**.

It is very interesting that a European Recommendation about interoperability (the so called ***European Interoperability Framework Recommendation***) specifies that there are three kinds of interoperability: the first one is the **technical interoperability**, but we have to consider also interoperability issues with regard to the organizational and semantic viewpoints.

Semantic interoperability involves the creation of common semantics (mostly based on mark-up languages) and common legal vocabularies used in delivering services.

Organizational interoperability involves well structured institutional relationships and interplay.

It is clear, I think, that interoperability is not only a technical matter, but also a **political matter**.

With interoperability in mind, we can analyse the actors of Strategies and Regulatory Framework.

While strategies are a typical Government instrument, **the actors of regulatory framework are many**. We can see something about the actors in the next slide.

THE ACTORS

Which are the actors of strategies and regulations?

The problem of responsibility in the area of ICT (that is, of **institutional architecture**) is not simple. It totally depends on the constitutional system, therefore it has a specific nature in each country.

What I am going to draw is just an abstract framework, mostly based on the common elements of the Italian and European experiences, but – in my opinion – valid (in its general terms) everywhere.

The organization of this institutional architecture actually is a different task, which has to be conceived starting from the specific conditions of each country.

Thus, generally speaking, the first actor obviously is **the Government**.

We have seen in the last slide that Strategies are a typical Government instrument because ICT development is a policy, and ICT development orientations are a matter of political choice.

Then we must recognize that – in several constitutional systems – Government plays a role also in the regulatory activity. The degree of involvement of Government in the regulatory activity depends on the constitutional system and is different in each country. In Italy, for instance, we have a second level regulation (also in the ICT area) which is often issued by Government (decrees). Often, in ICT, ministerial decrees regulate specific technical aspects that are not considered by the first level legislation.

The second actor is **Parliament**. New rules are needed everywhere in order to deal with business agreements, social relationships, crime: Law is the instrument and Parliament is the main actor.

The third actor – in many countries and in Italy too – is a **National ICT Agency**. The Agencies perform several functions, not only in issuing technical rules and protocols, but also:

- in developing and disseminating skills;
- in promoting linkages with similar institutions in other countries in order to attain objectives that cannot be adequately achieved at the national level alone;
- and – particularly - in standardizing and promoting **interoperability**;

The latter is very important because interoperability is one of the main quality indicators in ICT initiatives.

I would like to highlight that the same result of interoperability is supported by the general ICT strategies, by searching for the best technological connection among and between separate projects promoted by the Government.

So, we have a very interesting **interplay between technical standards and general strategies**.

But sometimes also the "primary rules", the Law, can (and should) promote interoperability, because – in this field - they have a general value, which deserves to be considered by the law.

But this framework isn't complete, without a fourth actor: the **International Organizations**. They too elaborate strategies (in Europe, for instance, we have a strong activity of the European Union in this field), or also legal rules.

The landscape is complete if we add also the **International technical bodies**. These technical bodies produce Protocols, Standards, Guidelines, Specifications in the ICT area. In the INTERNET technologies a very important role is played by the W3C "world wide web Consortium", that – since 1994 – has developed more than eighty technical specifications for the Web's infrastructure. This activity is particularly aimed at interoperability and the ICT initiatives are strongly urged to consider these standards from the beginning of their planning.

PARLIAMENTS

Obviously, Parliaments play a role in ICT Regulation.

But Parliaments have other features that can be very important in ICT initiatives at large and particularly in ICT for Development.

They:

- Are vested with the lawmaking function
- Have linkages with the main public institutions and administrations
- Represent the civil society
- Guarantee pluralism and linkage between the State administration and society
- Can promote and utilize, in a flexible manner, expertises and know-how
- Have an easy access to international organizations and international specialized bodies
- Can promote international cooperation between Parliaments

PARLIAMENTS AND ICT

Starting from the Italian experience, but also referring to a more widespread and international good practice, I could say that the diffusion – within the administration of Parliaments – of **awareness about the strategic role of ICT** is an important goal.

The first step should be the **development of a Parliamentary Information and Documentation System** (my colleague Carlo Simonelli will speak about this subject tomorrow in the afternoon session).

Between the Administrative and the Political side of the Legislative Bodies a vital exchange of experiences and culture takes place. Therefore, I believe that a good **penetration of ICT culture, innovation experiences, interoperability awareness into Parliament**, can deeply influence the decision-making and law-making results.

Parliament, as a political institution, should have **an active and leading role** in the development of the Information Society, not only by means of its legislative function, but also by promoting strategic projects. In fact,

Parliament can have **the clearest vision of what information is relevant and useful for the end-users**. Therefore, Parliament can give a very crucial added value, particularly in ICTD initiatives.

Parliament should promote **the creation of a single steering entity** together with Government and the National Technical Agency. In Italy we are having a good experience with these possibilities.

To sum up,

Parliament stands at the crossroads between technology, society and decision-making.