PART 2 : THE ISSUES AND OBSERVATIONS

1. « INFORMATION SOCIETY » PYRAMID AND REGIONAL DEVELOPMENT

Part two offers a set of assessments and issues formulated throughout the different steps initiated by the FASIL project (see part 1). These will be the subjects of interpretation and recommendations in part 3 of the present document.

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1. 'INFORMATION SOCIETY' PYRAMID AND REGIONAL DEVELOPMENT

We are going to use a pyramid in order to simplify the links, in a perspective of regional development, between different levels of knowledge and possible actions. The logic of the representation adopted is that achievement at a given level is dependant on that of all the lower levels and influences that of all the higher levels.

We use 5 levels in order to express the issues and assessments of our analysis (see following diagram and table):

- Infrastructure and its access;
- Realisation and approval;
- Skills;
- Flexibility of organisations;
- Innovation.

Thus, the capacity of the I.S. to really contribute to regional development will depend within a region, on the way in which the different aspects of each level are really present and undergoing progress, as well as the density and intensity of various links between the different levels.

What would be the use of encouraging society to realise the potential of the I.S. if the infrastructures within this domain are non-existent? How can you get involved in innovative projects with a serious lack of skills? How can you be innovative if at the same time there is no new organisational approach? ...

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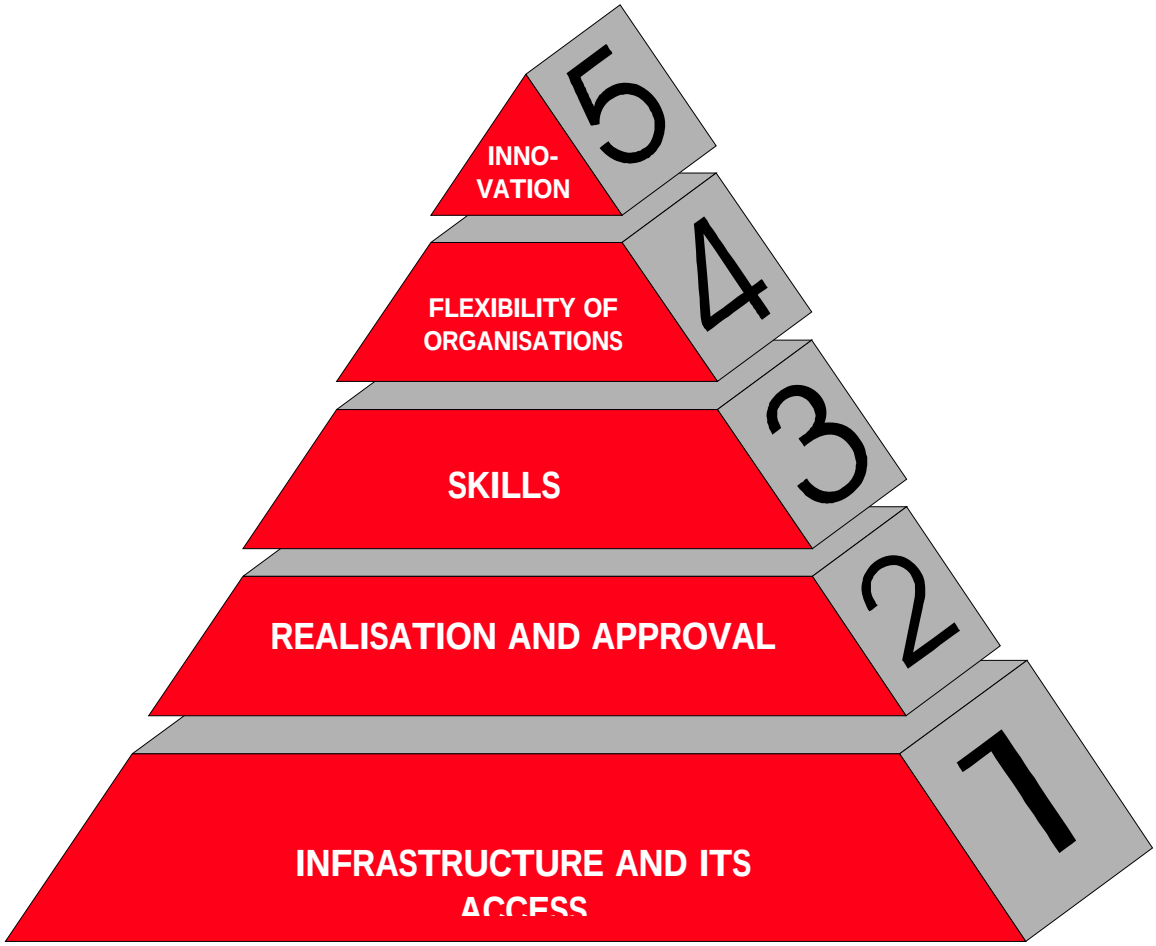

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In addition all the levels can be detailed as follows:

Level 1. Infrastructures and their access	**Presence of a good communications infrastructure**: • " Physical" communications infrastructure • Telecommunications infrastructure. **Real access with favourable economic conditions for this infrastructure** : • Penetration of terminal facilities • Quality of services (speed, conviviality, localisation, etc.); • Standardisation and compatibility of technical platforms; • Costs; • Regulations.
Level 2. Realisation and approval	**Realisation of the issues of the I.S. by all the citizens in their different roles (workers, consumers, parents, …)** : • Existence of a political will on this subject; • Making companies and decision makers aware of the issues; • Making citizens aware of the NTIC "culture".
Level 3. Skills	**Presence of skills** : • Existence of qualified human resources to use the NTIC's; • Existence of qualified human resources to integrate them into the strategy and organisation of companies and institutions; • Existence of qualified human resources to develop new systemic applications that respond to unsatisfied old needs or new needs.
Level 4. Flexibility of organisations	**Organisational environment adapted to the I.S.** : • General environment favourable to innovation ; • Flexibility of organisations and companies ; • Existence of forms of organisation which encourage individual initiatives and develop the capacities of training.
Level 5. Innovation	**Presence of innovative actors** : • Start-ups; • Value added content companies; • Laboratories and research centres in these domains, in collaboration with a maximum number of companies (in particular SME's), teaching organisations and other institutions (ex. hospitals present in the region); • Value added logistics.

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2. SOME PRELIMINARY COMMENTS

All models are reductive and simplistic of things which have never been so complicated as today

The assessments and issues observed in relation to the different levels proposed, do not adequately describe the whole situation of our region.
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We offer a detour to readers so that they can appreciate this situation, through three remarks.

2.1. THE REGIONAL DIMENSION OF THE I.S.

Paradoxically, the 'demise of distances' announced with the advent of NTIC's in a global world is concomitant with a greater importance of 'territories'. Indeed the NTIC's encourage competitiveness between regions to a far greater extent than before. Regions are therefore obliged to identify their comparative advantages and consequently to reinforce these advantages.

Thanks to the NTIC's; access to codified information is becoming universal and this regardless of considerations of time and space. However, the intelligent use of this information, its transformation into new and useful knowledge is not universal. Thus, it is the development of training capacities and knowledge, skills and qualifications which are now the key factors of development in our region within the I.S. (NB on this subject, appendix 1).

Consequently, in a society based on knowledge, the comparative advantages of a region can no longer be based uniquely on the presence of natural resources or on its geographical position.

Today, that which constitutes a comparative advantage for a region, is both the existence of efficient actors within the territory (companies, training organisations, public actors, etc.) who play their role to the full and, above all their capacity to form together a coherent system in which they work in synergy.

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2.2. POINTS OF VIEW AND SOCIETY ISSUES

The various resources used and the initiatives taken within the framework of the FASIL project (reports from the high level Advisory Group, the DELPHI survey) have enabled the gathering of a lot of different opinions of a prospective nature on the different issues of society linked with the development of the Information Society in the region of Liege:

- An improvement in the competitive position of our region;
- Great expectations of better quality services to' beneficiaries'; of the I.S. which can also be seen as expectations of a better quality of life
- A global improvement in employment prospects
- The fact that the I.S. will not destroy the essence of the services already available but on the contrary, will complement these existing services.

This vision, which appears to be a positive one, shows that the I.S. constitutes a real opportunity for our region. However, we must also take into account the issues, which must be rapidly dealt with, if we want this positive vision of our region to become a reality:

THE IMPORTANCE GIVEN BY OUR INTERLOCUTORS TO THE NECESSSITY OF TRAINING WHICH IS:

- adapted and of quality;
- takes into account the emergence of new jobs;
- directed at large sectors of the population:

- Company staff,
- Public service and administrative staff,
- Citizens from all social walks and of all ages.

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THE ATTENTION WHICH MUST BE GIVEN IN ORDER TO AVOID A CONFLICT OF THE POPULATION BETWEEN THOSE WHO CAN KEEP UP AND THOSE WHO DROP OUT, WHICH BRINGS US BACK TO THE PREVIOUS POINT.

THE NECESSITY OF PREPARING ALL THE LEADING ACTORS OF THE DEVELOPMENT OF THE I.STO COPE WITH POSSIBLE PROBLEMS :

- **Organisational structures, in particular on the subject of the production process and distribution,**
- **The share and control of power linked to the possession of information.**

Once again this goes to show, the necessity of sufficient knowledge of the different aspects of the issues involved, and therefore the necessity to acquire this knowledge through training and experience.

THE IMPORTANCE WHICH MUST BE GIVEN TO THE NECESSITY OF STRUCTURES CAPABLE OF MEASURING THE DEGREE OF PROTECTION FOR CONSUMMER RIGHTS AND CAPABLE OF TAKING ACTION TO PROMOTE AND PUT INTO ACTION THE CORRECTIONS WHICH ARE CALLED FOR (TTP OR TRUSTED THIRD PARTY)

DELPHI SURVEY – FIRST ROUND - OPINION OF EXPERTS CONCERNING THE 11 ISSUES

Level of the pyramid	Issues : The contribution of the I.S. will be : ...	Replies	Total	(%)
Innovation	1. to offer better quality services (prices, availability, intrinsic qualities,...)?	Yes	40	95
		No	2	5
Innovation	2. to force the creation of new services for the protection of consumers rights?	Yes	37	88
		No	5	12
Realisation and approval	3. to lead to a greater equality between users rather than duality for the access to new services?	Equality	5	11
		Duality	41	89
Skills	4. demand more active attitudes from users, implicating greater qualifications?	Yes	40	95
		No	2	5
Flexibility of organisations	5. Bring about a concentration rather than a fragmentation of services?	Concentration	21	50
		Fragmentation	21	50
Skills	6. to require new production / distribution process's calling for major efforts in training?	Yes	42	100
		No	0	0
Flexibility of organisations	7. modify the organisation of production/distribution systems?	Yes	32	76
		No	10	24
Innovation	8. to create new services, which will replace or complement those already existing?	Replace	10	20
		Complement	42	80
Realisation and approval	9. to have a positive or negative influence on employment?	Positive	32	70
		Negative	14	30
Flexibility of organisations	10. to make major modifications in the area of control and power concerning the distribution of information?	Yes	38	86
		No	6	14
Realisation and approval	11. to allow for an improvement or a deterioration in the competitive position of our region?	Improvement	35	85
		deterioration	6	15

NB: - total number of experts: 42
- several replies are possible for some questions

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2.3. The socio-economic environment

Before tackling the approach by level in accordance with the pyramid model, we are going to highlight the other aspects which characterise our region in a more global way and which make up the environment and the socio-economic landscape of the pyramid. These aspects, like those which will be mentioned in the level by level analysis appear in the SWOT [1] grid which can be found in appendix 13.

Main positive factors

- Liege with its very central position in Europe is one of the 5 major Belgian cities and Wallonie represents the 1st market for information and telecommunication products and services.
- A comprehensive University and many further education establishments.
- A very developed education sector and adult education facilities open to 45 000 people.
- Around forty R&D centres emanating from the university, further education establishments in both the private and public sector.
- Recognised centres of skills putting new technologies into practice: space, biology, human medicine, and veterinary, steel industry, environment, electropole, …
- A public and partially government owned sector which occupies around 100 000 people and which can therefore have a lever effect in the development of the I.S..
- A rich and varied cultural and associative sector.
- A very active journalistic sector of the written, spoken and televised press.
- An emerging multimedia industry.

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- Real estate prices, which are very favourable, compared to those practised in Brussels.
- A very large linguistic diversity.
- The presence of numerous competent economic actors operating on the different aspects of aid for the creation and development of businesses.
- The province of Liege is in active partnership with Euregio Meuse-Rhin..

Main negative factors

- Insufficient company and innovative spirit
- A mediocre unemployment rate within Wallonie (Wallonie itself has an unemployment rate which is above the national average)
- A marked deficit within the headquarters of private companies.
- A negative social image despite a changing reality.
- A deficit within companies who place the NTIC's at the heart of their political strategy.
- A too weak implication of public and partially government controlled powers in the development of the I.S..
- A lack of effort on the part of political leaders in favour of the NTIC4S NTIC.
- The decrease and the ageing of the population.

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3. THE MAIN ASSESSMENTS BY PYRAMID LEVEL

A number of observations that apply specifically to socio-economic realities within our region can now be established.

a. **Level 1. Infrastructure and its access**

- The Liege region has a number of assets in so far as 'physical' infrastructures are concerned: TGV (high-speed train), airport, motorway intersection, and second biggest European river port.

- From the telecommunication infrastructure point of view, the observations concern :

  - The existence of numerous high output networks :

    ** Inter-regional backbone: SNCB, WIN*
    **capillary networks going right through to the households: Belgacom, district wired broadcasting*
    **closed network EPL-Net (MAN)*

  - The non specific asset which is represented by the penetration rate of wired broadcasting

  - the modernisation of the wired broadcasting network

The policies developed at a supraprovincial level, in favour of an easy access for schools will help the Liege region to make the most of the advantages of the I.S.

The costs involved for the access to the infrastructure are too high within our region and this despite the introduction of competition.
On top of this, the Liege region finds itself under a tariff structure, which is completely unsuitable for a cross-border region.

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Although the situation in the province of Liege is better (35.9%) than for the rest of Wallonie (34.8%), the rate of households equipped with information technology is still lower compared with the situation in Flanders (40.9%).

b. **Level 2. Realisation and approval**

- To start with, three observations can be made on the subject :
  - Too few political leaders act in favour of the NTIC's at present
  - The general public is not made sufficiently aware of the I.S.
  - The are no major initiatives in terms of approval. Access to spaces which are open to the general public are rare (whether for the initiation to TIC or for the continuation of training and widening of knowledge).

- The public sector also proves itself globally to be largely deficient in so far as awareness is concerned.
  There is a need to adapt the administration organisation to a working environment where new technologies are used (Internet, Intranet,…), in order to make this part of the general working environment.

- The dynamism towards the I.S. can be remarked upon in small towns and districts who, with limited means, commit themselves to improving the quality of life of its citizens (Amay, Ans, Aywaille, Braives, Blégny, Büllingen, Comblain-au-Pont, Crisnée, Dalhem, Dison, Geer, Huy, Herve, Oupeye, Raeren, Soumagne, Theux, Thimister-Clermont, Visé, Waimes and Wanze).

- Our region is blessed with an active web of SME's who as yet have poor understanding of the benefits which the I.S. can bring about, the means to use these benefits and the new services which will result from new needs (management of web sites, data mining, economic intelligence, electronic commerce,…)

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- Our region is characterised by major cultural and tourist activity associated with the existence of numerous linguistic communities. However, at the same time, the region is also characterised by a weak penetration of the I.S. in the corresponding basic activities (for example, libraries offering very few on line services). Access terminals to public networks of information are rare.

- When an effort is made by interlocutors to participate in discussions relative to the I.S. in our region, the interests of the rural world in relation to various aspects of the I.S. are very strong.

- Our region is lags behind in the area of information technology management for public and private transport. An effort to mobilise the main actors is necessary in order to find solutions in the information area and guidance for travellers and people who move around.

c. Level 3. Skills

It is observed that training in a region such as ours depends on the multiplicity of training structures, which respond to a whole range of needs (general or specific to the I.S.).
In this way 45 000 people follow complementary training courses. Centres, which are specialised in training in the use of new technologies, are more and more popular

In addition, the Liege region disposes of a highly developed education sector, due to the presence of its university and a number of other higher education establishments.
Projects aiming to develop new teacher training tools and new approaches are currently underway.
Also, major expectations in relation to initiatives launched by public authorities are now being felt within teaching establishments (in particular via the WIN network).

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- Also, several members of the 'Teaching' and 'Training' working parties have bought our attention to the following observations :

  - *Teaching will dispose of new tools but should also have a new attitude since the basis of transfer of knowledge will be different;*
  - *New jobs are going to appear for which new training using new tools will be necessary;*
  - *The links between teachers-parents-students, on the subject of education should form a solid basis to promote the I.S. in the different layers of society;*
  - *The I.S. appears to be a tool which when used in complement to systems such as those set up by the FOREM, can contribute to a more fruitful search for employment.*

d. Level 4. Flexibility of organisations

- various sectors, for example goods transport, feel the need to keep up, or even to get ahead of the competitors, to proceed with forms of concentration (clustering) in order to dispose of the necessary equipment and skills without excessive financial needs.

- In the framework of the I.S., most experts agree on the fact that institutions and organisations will see their way of functioning modified. On this subject, the following observations have been made:

  - telecommuting is still very rare within the region
  - rivalries exist between some institutions or within themselves
  - persistence of forms of bureaucratic organisation
  - insufficient valorisation of company spirit
  - lack of information

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Whether in the private or public sector there?????

e. **Level 5. Innovation**

- The SME web is a demander of new services which can satisfy new needs competently and this in an optic of a demand corresponding to the solving of problems rather than offers from technology ;

- A large range of opportunities are open to the 'trusted third party' (TTP) services which could be offered to :

    - companies
    - administrations,
    - citizens.

in numerous domains of the I.S., in particular on the subject of (*):

- control of the respect of contractual clauses of services
- control of the respect of privacy
- defence of consumer rights
- guarantee of confidentiality of encryption and encoding in the domain of financial contractions

(*) some of these services are already assured by various organisations.

- A multimedia industry is currently emerging in the Liege region through the presence of several innovating SME's, and this despite the absence of major multinational societies manufacturing telecommunication products
- 8 out of 18 companies from Liege in the Wallonne region are implicated in the inspiring programme 'from digitalisation to multimedia' (phrase 1)

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4. OTHER OBSERVATIONS

Beyond that which has already been said on the subject of our region, it would be useful to stay in tune with what is happening in the outside world.

Numerous projects are underway elsewhere in developed countries and many of them take advice from the observations, recommendations,... studies which we have already mentioned (NB. Appendix 1).

New domains emerge and new tendencies come to light, which will constitute the levers of development of many services.

In order not to weigh down this introductory text, we invite the reader who is not yet familiar with this future which will very soon be the present, to read appendix 12:

1. A list of technologies and domains linked to the I.S. and which are currently emerging;

2. Observations relative to numerous projects currently underway throughout the world such as they were formulated in a recent international conference (ESIS conference of the 18 and 19 March 1998)
