Information Technologies Observatory: ICT indicators collection survey

Results

Summary

- **The study objectives**

- **Methological elements**
  - Indicators
  - Samples construction

- **The results :**
  - Individuals and households
  - Businesses

The objectives

General Objectives of the Observatory

➢ An accurate and an assessed knowledge of the information society in Morocco (the strengths and weaknesses that characterise information technologies in Morocco today).

➢ A knowledge of the moroccan ICT sector (competitiveness, contribution to the economic developpement, contribution to the spread of information technology in the society, etc.) ;

➢ Providing a set of core indicators enabling :

  ➢ A good decision-making process for the information society take-up ;

  ➢ A follow up in time of the politics impact ;

  ➢ An A posterio evaluation of the politics efficiency aiming the information technologies development.

Objectives of the current study

➢ Constitute the observatory base by providing ANRT with a tool for obtaining and disseminating knowledge of the moroccan sociétéy access to IT and the impact of those technologies on the society.

➢ Enable data collection ;

➢ Facilitate data delivery in a form directly usable by ANRT ;

➢ Originate data analysis making it possible for ANRT to fulfil its role as a recommendation force among decision-makers in terms of information technologies access.

The constraints

➢ The reproducibility and durability requirements.

➢ No redondancy with the ANRT existant observatories ;

➢ The compliance with the specialized international organizations recommendations, enabling a relevant benchmark with other conttries.

Methodological elements

The indicators

The indicators set

The choice of indicators was decided on the basis of the following:

➢The ability of each indicator to take account of a key component of information technologies by assembling information in a form that makes for ease of understanding ;

➢The availability of information required for designing the indicator ;

➢Due regard to reproducibility and durability requirements.

Two target populations have been selected for the study :

➢The households ;

➢The businesses.

For two other populations, a first set of indicators has been suggested :

➢Administrations ;

➢Education sector.

The indicators set

The indicators selected may be classified into three major groups, according to subject :

➢ Level of equipment ;
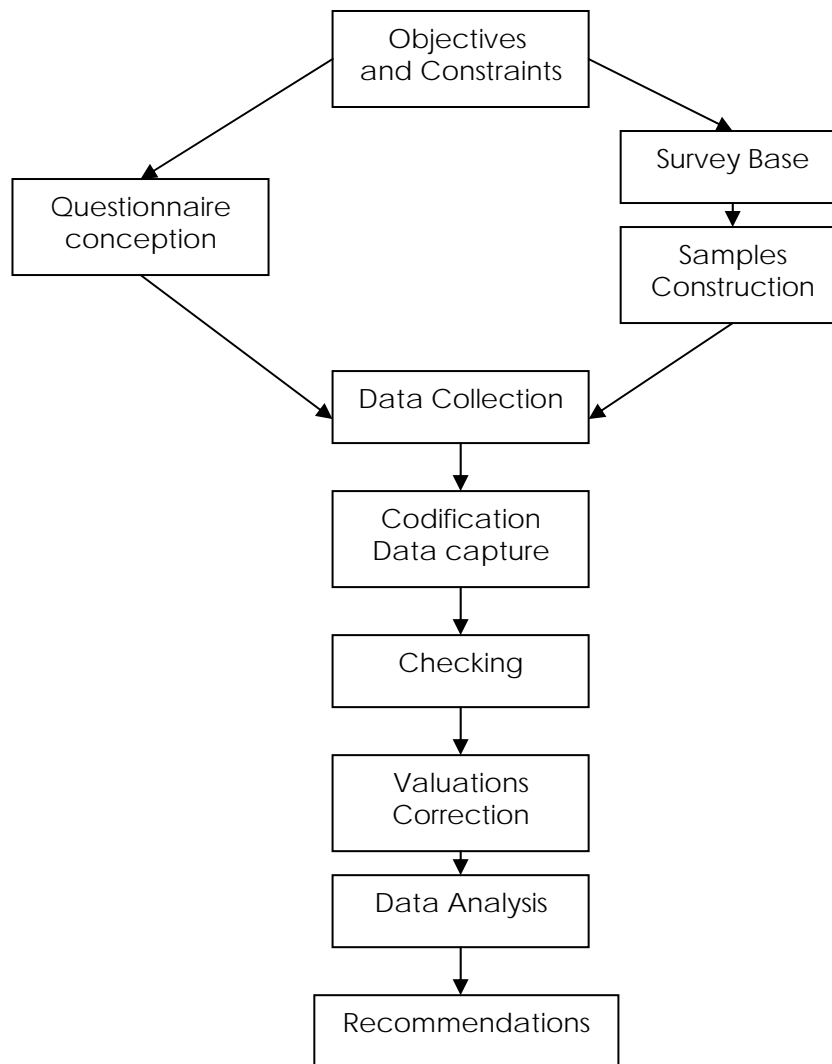
➢ ICT access ;

➢ ICT usage.

Methodological elements

Individuals and Households Sample

Houselholds sample construction
Collection and proceedings

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                    │   Objectives     │
                    │  and Constraints │
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   │    conception    │          └──────────────┘
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                    │  Recommendations │
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Houselholds sample construction
Head Population and Target Population

➢ **Head population** : The reference base for the population under survey does not employ the master sample produced by the latest available census (1994) as the situation in Morocco has undergone considerable change since then (as shown by the initial results of the 2004 RGPH (housing and population census). It uses updates and projections made on this basis in 2003 by the Direction de La Statistique (statistical agency of Morocco).

➢ **Target population** : It comprises persons aged 12 or over, living on Moroccan soil, regardless of their nationality. Where rural areas are concerned, the survey of this population is confined to persons residing in electrified zones since the hypothesis of a lack of IT equipment among this difficult to reach population group can reasonably be accepted.

Houselholds sample construction
Head Population and Target Population

- Moroccan population structure
  - 100% of urban households and 72% of rural households (ONE source) are electrified

Population (Millions)	Urban	Rural	Total
Over 12 (electrified zones)	12,7	13,97	16,68
Under 12 (electrified zones)	3,75	5,70	9,45
Non electrified zones	-	3,76	3,76
Total	16,46	13,43	29,89

  - Base : Data projections, Direction de La Statistique 2003 (statistical agency of Morocco), updated by the population distribution (2004 census).

Houselholds sample construction
Quotas methodology

In constructing the sample, structural population quotas were taken into account to provide a distribution of the population based on the following:

➢ Residential environment : distinction between urban and rural zones, the choice of this criteria refers to the households behaviour (IT equipement) and life style ;

➢ Sex and age of individuals : age criteria of 12 and over, given that public Internet use in Morocco concerns a large part of young population under 16 ;

➢ City region and size : considering the weight of economic developped regions in terms of IT equipement and usage by individuals and households ;

➢ The occupational group of the head of the household (with an assumed relationship with his education level, enabling IT access).

Houselholds sample construction

Quotas methodology

Urban zone

Sex	
Men	48.8%
Women	51.2%

Occupational Group	
A	7.6%
B	14.0%
C	27.6%
D	29.4%
E	21.4%

City size	
Over 1 000 000	37.6%
200 000 - 1 000 000	26.5%
< 200 000	35.9%

Age	
12 - 14	6.5%
15 - 19	11.0%
20 - 24	10.5%
25 - 29	9.7%
30 - 39	15.8%
40 - 54	13.0%
55 and over	9.3%

Rural zone

Sex	
Men	49.6%
Women	50.4%

Occupational Group	
A	1.8%
B	3.2%
C	11.3%
D	62.7%
E	21.0%

Age	
12 - 14	11.3%
15 - 19	17.0%
20 - 24	13.4%
25 - 29	10.3%
30 - 39	16.7%
40 - 54	16.1%
55 and over	15.2%

Houselholds sample construction
Sample adjustment

The watched structure of the sample is different from the theorical structure :

=> Making some corrections are necessary in order to correct the possible distortion in results made by these differences.

The variables concerned by the corrections are :

➢ Residential environment ;
➢ Sex ;
➢ The occupational group of the head of the household.

Houselholds sample construction
Sample adjustment

Sex	Correction of Sex	
Sex	**Urban**	**Rural**
Man	37,18%	11,81%
Woman	39,01%	12,00%
Correction of The Occupational group of the head of the household		
Occupational group	**Urban**	**Rural**
A	5,79%	0,43%
B	10,67%	0,76%
C	21,03%	2,69%
D	22,40%	14,93%
E	16,30%	5,00%
Correction of Age		
Age	**Urban**	**Rural**
12--15	6,55%	2,69%
15--20	11,05%	4,05%
20--25	10,59%	3,19%
25--30	9,75%	2,45%
30--40	15,85%	3,98%
40--55	13,10%	3,83%
55--66	9,37%	3,62%

Houselholds sample construction
Sample adjustment

Individuals actually consulted are of 1019 people : 866 urban and 153 rural, giving the following confidence intervals:

➢ Urban: +/- 3.3% with 95% probability ;

➢ Rural: +/- 7.9% with 95% probability.

Residential environneme	number	% / Total	% / Expr.
Urban	776	76,19	76,19
Rural	243	23,81	23,81
Total	1 019	100,00	100,00

Sex	Number	% / Total	% / Expr.
Homme	499	48,99	48,99
Femme	520	51,01	51,01
Total	1 019	100,00	100,00

Occupational group	number	% / Total	% / Expr.
A	63	6,22	6,22
B	116	11,43	11,43
C	242	23,72	23,72
D	380	37,33	37,33
E	217	21,30	21,30
Total	1 019	100,00	100,00

Houselholds sample construction
Sample representativeness

- **Sample representativeness**

  - The target population is made of 12 and over residing in electrified zones corresponding to 16.68 millions of individuals, or 56% of national population.

  - Through Individuals, we reach the whole households residing in electrified zones corresponding to 5 millions of moroccan households (89.0% of national households or 87.4% of the population if we consider the households composition).

  - In order to extrapolate the results obtained from the sample, we assume that houselholds located in non electrified zones are not equiped with telephones neither with personal computers.

Methodological elements

Businesses Sample

Businesses sample construction

Two criteria permit to classify the businesses :

➢ The size ;

➢ Type of activity.

The sample construction methodology is based on a random choice, which ensure a sample representativeness of the overall national structure.

Information source used in constructing the sample is the Kompass of moroccan businesses (company directory in Morocco).

The sample size is about 250 businesses established in Morocco, which represents an error margin of ± 6,2% with a first type risk of 95%.

Businesses sample construction

➤The business size : depending on the number of employees

4 - 9

10 - 19

20 - 49

50 - 99

100 - 299

300 - 499

Over 500

Businesses sample construction
Type of activity

A first split : ICT sector - Other sectors

Are included in the ICT sector, businesses with the following activities :

        Web and Multimedia,

        Network Construction,

        Integrated Company Solutions,

        Software Development,

        Mobile (Mobile applications and services),

        Call Centres (CRM),

        Tele-services and Outsourcing,

        Equipement,

        Electronics,

        IT Services,

        Distance Teaching,

        Consulting…

Businesses sample construction
Type of activity

Among the other sectors, the businesses are classified following their activities area of operations. Three major sectors are selected regarding the « CNSS » classification :

➢Primary sector : Fishing, Forestry/Hunting, Culture, Breeding, agriculture-related activities.

➢Industrial/Manufacturing sector : Electricity and Water, Oil and Fuel, Extraction and processing of ores and various minerals, chemical industry, food industry, beverages, tobacco, Textiles and clothing, Leather and footwear, Wood and furniture, paper and cardboard, printing, press and publishing, building materials and public works.

➢Service/Transport sector: Transport and Communication, Commerce, Finance, Hotels and Catering, service and industry intermediaries and auxiliaries, Real estate, Domestic services, Hygiene, Other services.

The results

Individuals and households

Fixed and mobile telephony

- Telephony equipement indicators

Households Penetration

Fixed: 16,70%
Mobile: 41,50%

Population Penetration

Fixed: 4,40%
Mobile: 31,20%
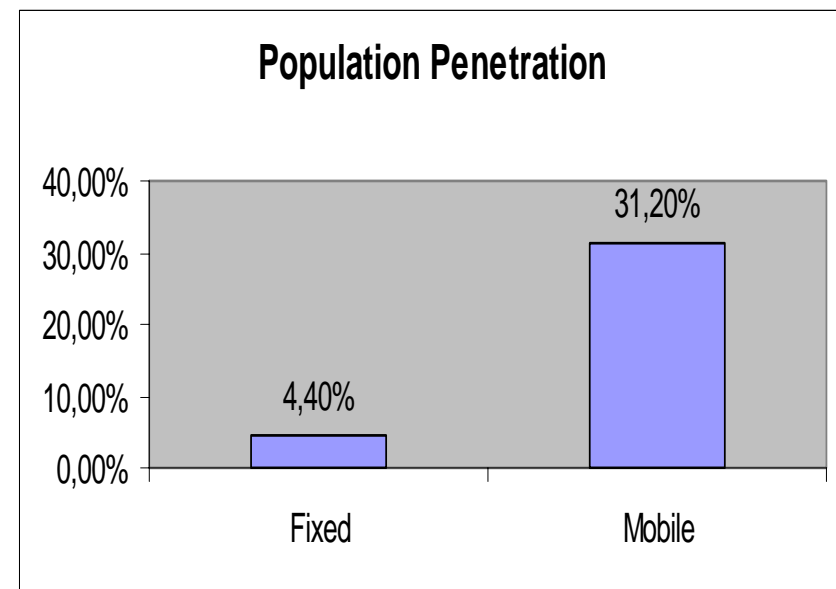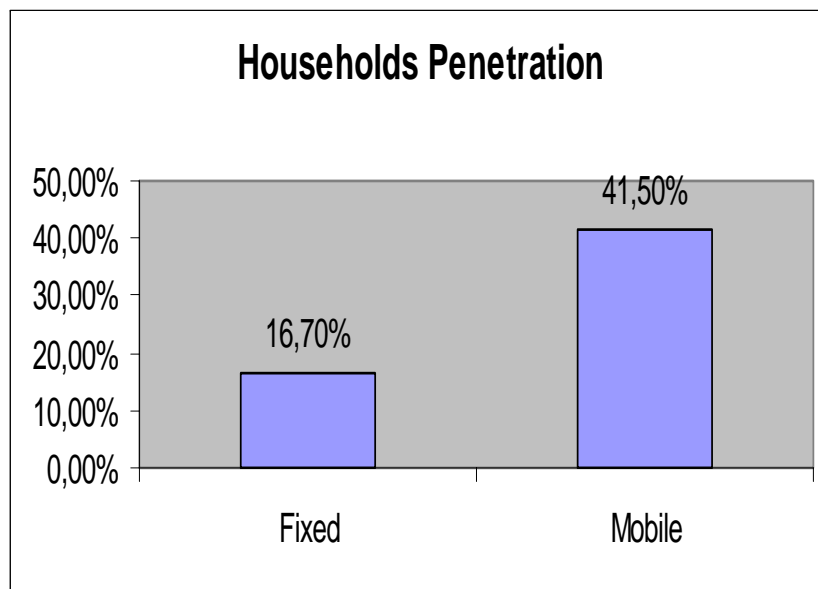
Mobile telephony
Usages

Mobile telephone usage

Usage	National (%)	Urban area (%)	Rural area (%)
Call receiving	**100**	100	100
Call issuing	**95,5**	95,3	96,7
SMS	**73,2**	77,6	39,7
MMS	**13,5**	15,3	
Ringtone, logo, game downloading	**12,2**	13,8	
Services	**1,4**	1,5	
Internet browsing	**0,4**	0,4	
Consulting messaging services	**0,2**	0,2	
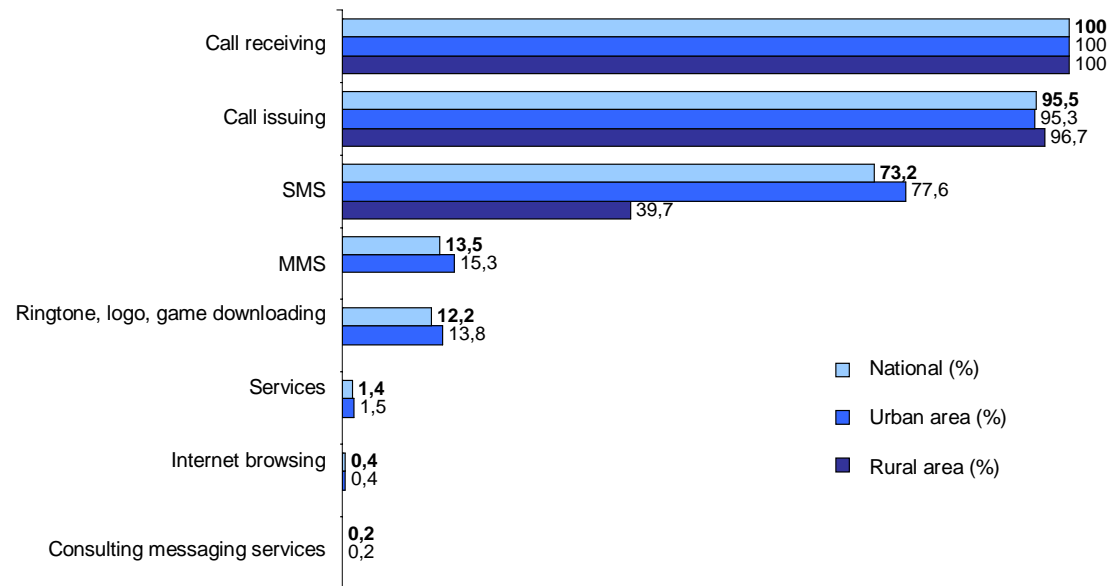
A part from SMS, Value added services remain less developed

Personal computers

- PC equipement indicators

Personal computers penetration
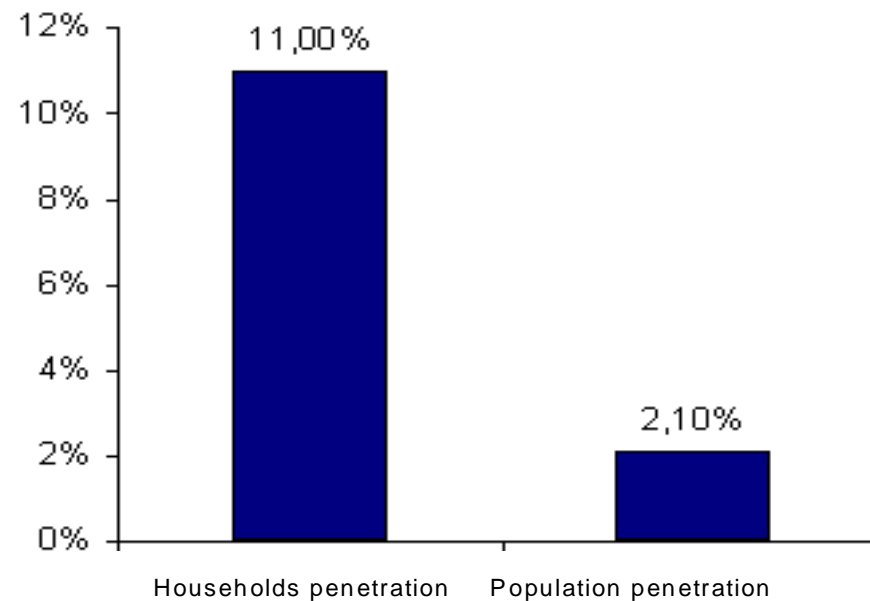
Personal computers

- **PC equipement indicators**
  - A low computers penetration within the households

Personal Computer	Households penetration	Overall Population penetration	Overall Population penetration (users)
In %	11,0%	2,1%	18,0%
In millions	0,62	0,62	3,0

  - … but a real growth potential

PC market potential	Population (%)	Millions
PC purchase in the coming 12 months	13,2%	3,9

Computers
Usage reasons

Computer usage reasons

Base :   Individuals with personal cmputer at home

Leisure (photography,)   **80,5** / 79,6 / 100

Office type work (mail, account …)   **66,2** / 66,5 / 60,2

Games   **63,9** / 63,1 / 83,8

Homeworking   **34,8** / 33,9 / 58,2

Internet (info search ., messaging , …)   **23,2** / 24 / 0

Learning/Search   **6,1** / 6,3 / 0

Administrative work   **6** / 6,3 / 0

On line buying   **1,4** / 1,5 / 0

☐ **National (%)**

☐ Urban zone (%)

☐ Rural zone (%)
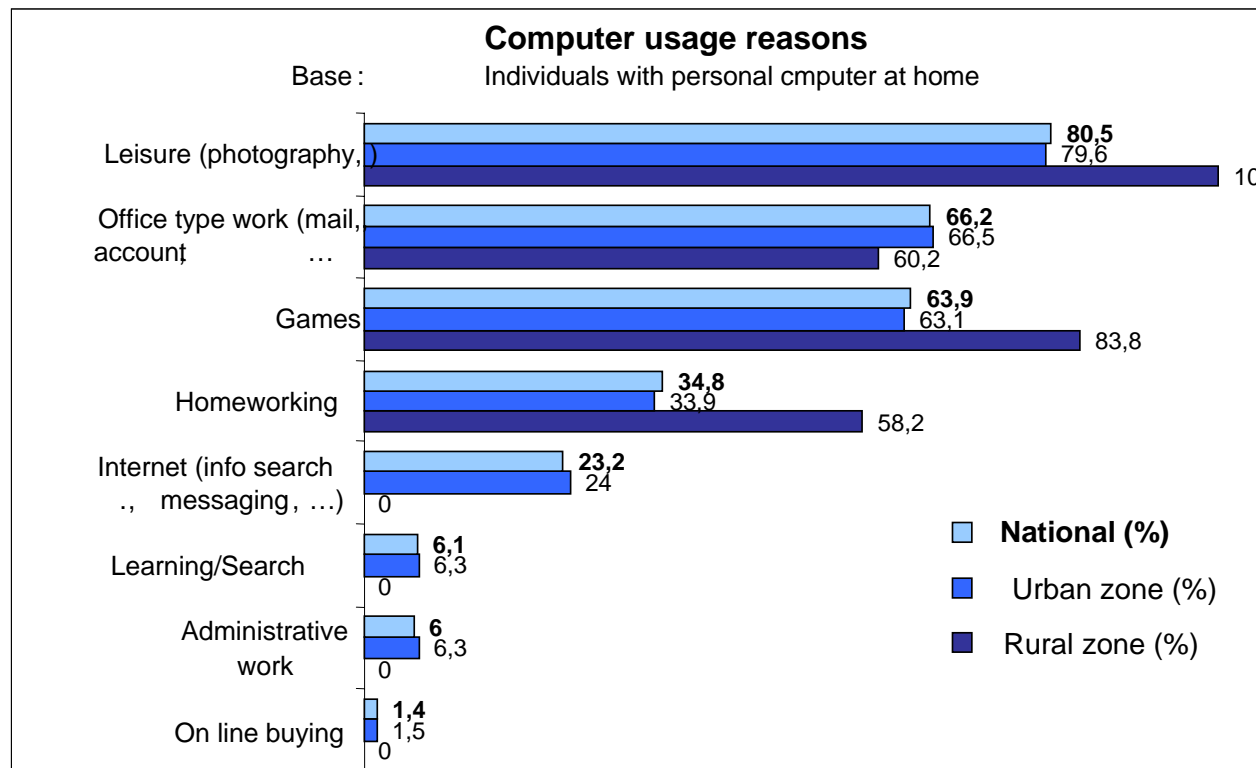
The « useful » usage doesn 't appear at the head of usages claimed by individuals.

Computers
Reasons for non equipement : The Price

Reasons for non équipement	% rural
Illiteracy	50,8
Too costy	30,1
No need	22,4
Lack of means	17,0
Too complicated to use	16,1

Reasons for non équipement	% urban
Too costy	55,3
No need	27,0
Illeteracy	24,2
Too complicated to use	20,0
Lack of means	4,9

Reasons for not using a PC

Base : Individuals without a PC at home, but intending to buy one in the coming 12 months

- Too costly — **73,7** / 73,9 / 72,4
- No need — **18,5** / 19 / 14,4
- Too complicated to use — **16,2** / 15,6 / 21,7
- Lack of means — **7,9** / 3,5 / 43,7
- Illiteracy — **6** / 4 / 22,3
- Lack of time — **0,4** / 4,5 / 0
- Use of one at work or at school — **0,15** / 0,17 / 0

Legend:
- National (%)
- Urban area (%)
- Rural area (%)
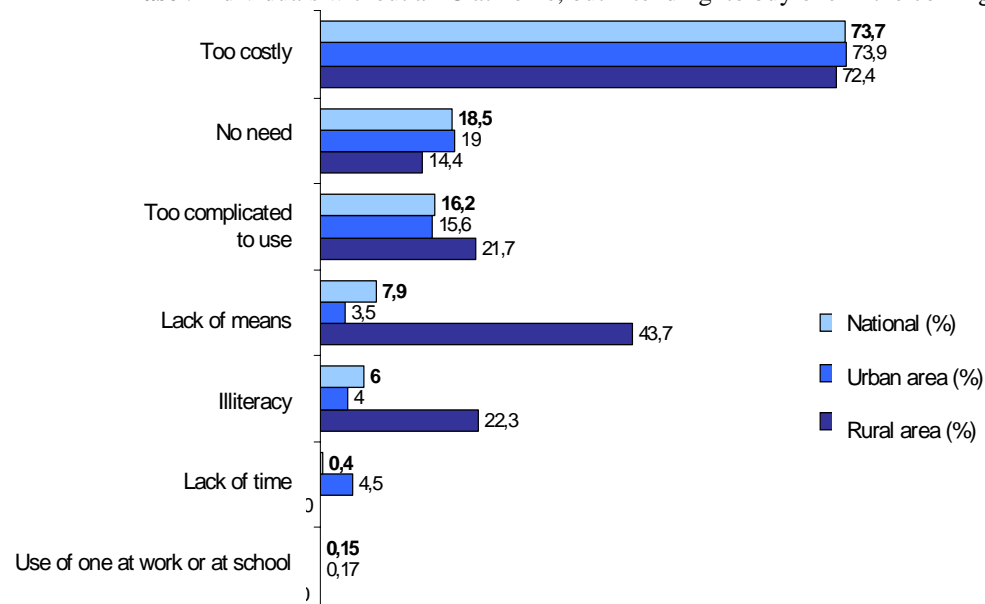
Internet

- **Internet equipement indicators**

  - Very low Internet penetration rate within the households, 6 times more individuals connecting outside home.

  - Given this rate, the pourcentage of high speed access is interesting and prefigure an accelerate adoption of access in Morocco.

	Internet access at home Penetration within households	Penetration in the Overall population	Potential users number
%	2,1%	0,4%	2,2%
In million	0,12	0,12	0,6
Including High Speed (ADS	1,2%	0,2%	1,1%
In million	(0,05)	(0,05)	(0,3)
Internet users outside home			
%			12%
In million			3,7
Including High Speed (ADS			8,2%
In million			2,4

Internet

- **Internet equipement indicators**

  - …real potential for home access

Market potential for Home access	Households (%)	Households (Millions)
Intention to have an Internet access in the coming 12 months	12,1%	0,68

  - A large number of Internet Users compared to the low households equipement (individuals uses strongly access outside home)

Internet Users		As part of the population	in millions
Internet users Level 1	During the last month	12,4%	3,7
	in december 2004	11,8%	3,5
Internet users Level 2	During the last 12 mois	12,5%	3,8
	During year 2004	12,1%	3,6

Internet

▪ Breakdown by sex of individuals claiming to have accessed the Internet during the past month.

▪ Breakdown by sex of persons claiming to have accessed the Internet during the past 12 months.

Woman
42%

Man
58%

Woman
41%

Man
59%
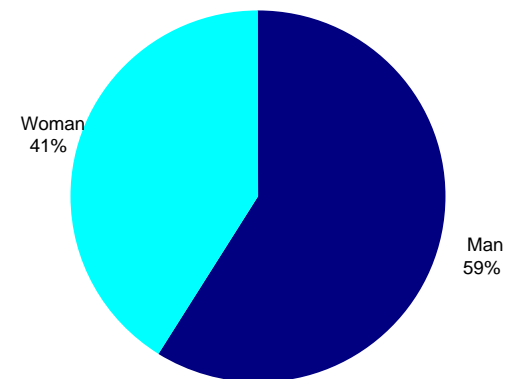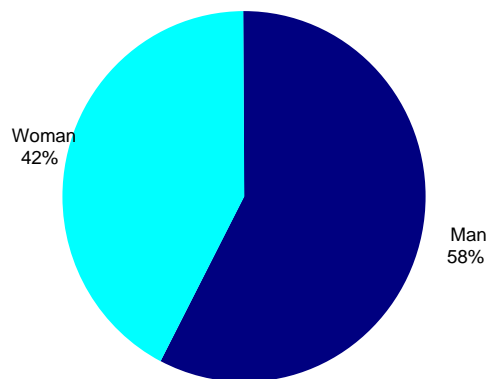
Internet and Individuals
Home-based access

Pie chart:
- Don't know; 3,8%
- Tel. line with subscription; 35,1%
- Tel. line without subscription; 9,0%
- Flate rate; 7,1%
- ADSL; 45,0%
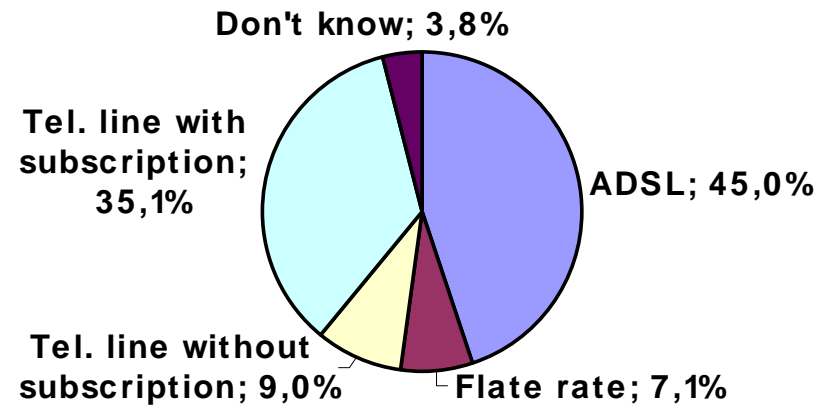
Among households equiped with an Internet connection at home, dial-up access is still the dominant connection mode, ADSL already boasts a 45% share of the market (at home connections).

Internet and Individuals
Internet access outside the home

Internet Access places outside the home following the location environment

Base : Individuals with Internet access only outside the home
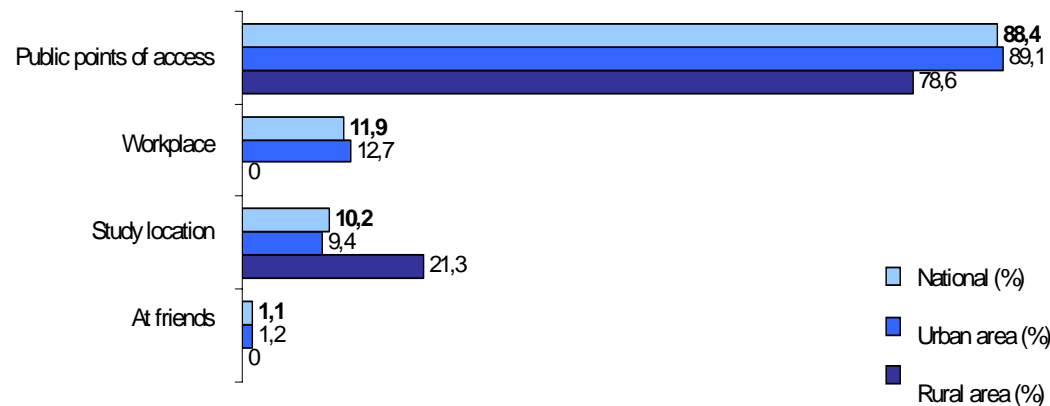
For individuals without Internet access at home, public points of access (Internet cafes) are the main mode of connexion outside the home.

Note the significant connexion on the study location in the rural zone.

Internet and Individuals
Connection spending

Average Internet spending per month following the location environment

Base : Individuals with Internet access

Legend:
- National (%)
- Urban area (%)
- Rural area (%)

Category	National (%)	Urban area (%)	Rural area (%)
Up to 500 DH	1,1	1,2	0
250 – 500 DH	9,5	10,1	0
200 – 250 DH	5,5	5,8	0
150 – 200 DH	3,2	3,4	0
100 – 150 DH	16,8	17,3	8,8
50 – 100 DH	36,9	38	18,6
< 50 DH	26,8	24,1	72,6
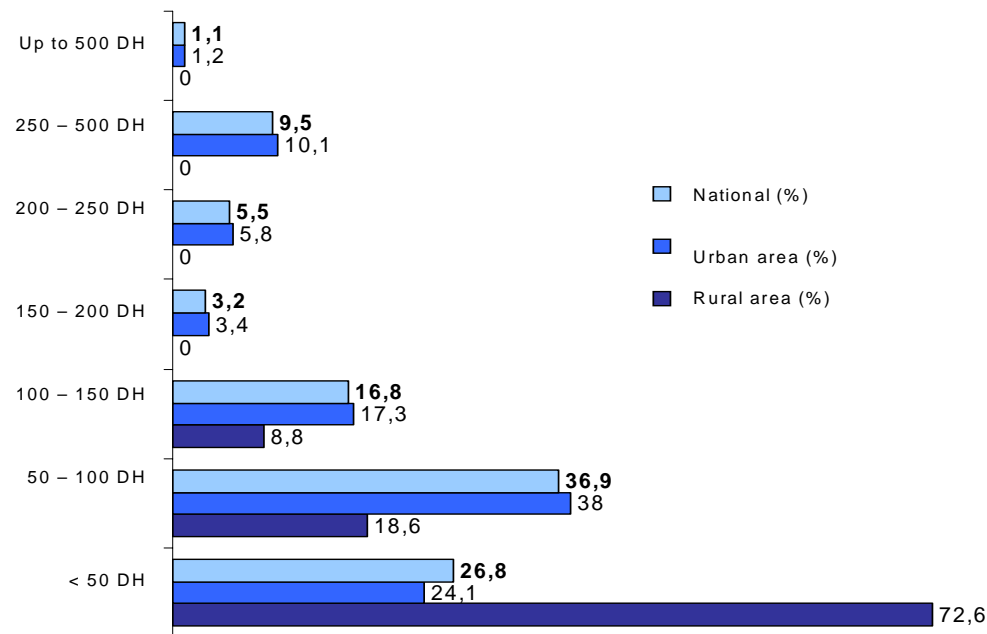
The average monthly spending of Individuals for Internet is mainly less than 150 DH (79%).

Internet and Individuals
Internet usages

Internet usages following the location environment

Base : Individuals with Internet connection
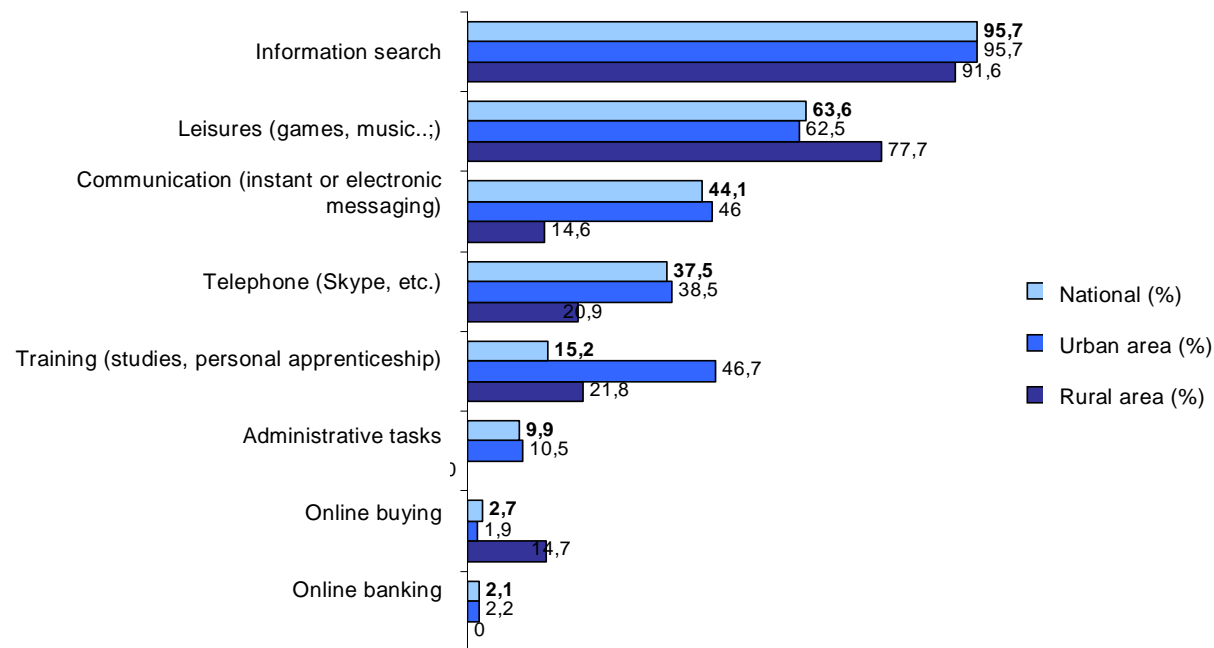
The main Internet Usages are dominated by information search and leisurs.

Internet and Individuals
Internet factors seen as negative : Content and Price

Internet factors seen as negative following the location environnement

Factor	National (%)	Urban area (%)	Rural area (%)
Bad content for children	**56,9**	57,4	53,4
Too costly	**46,3**	46,8	43,2
Insufficient speed/not user friendly	**15,8**	16,8	8,9
Inadequate number of collective access points	**11,1**	8,2	31,9
Insufficient local content	**8,2**	9,4	0
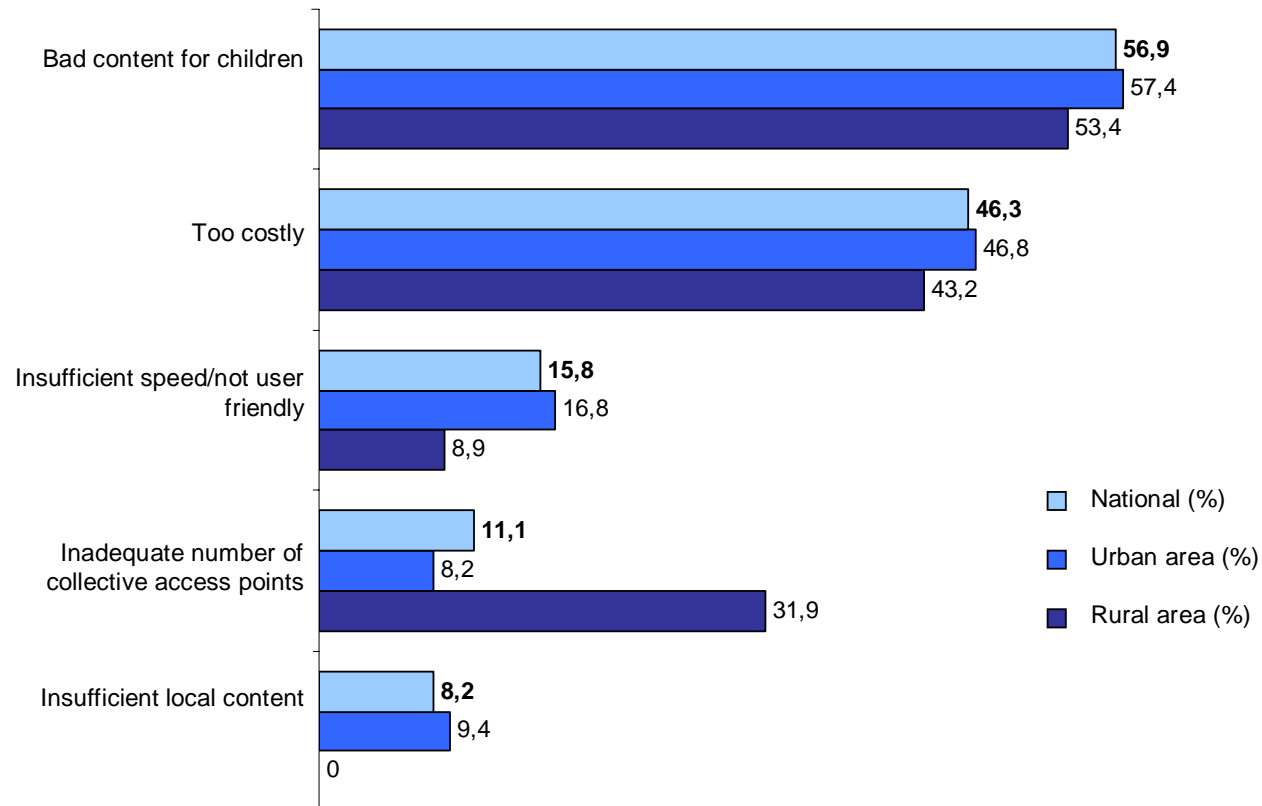
Internet and Individuals

Electronic Commerce : Reasons for lack of interest

Rank	Claimed Reasons	National (%)
1	lack of conceived usefullness	**46,1**
2	Availability of products is unsatisfactory	**38,3**
3	On line prices too high	**33**
4	Security issues for transactions	**25**
5	Need International credit card for payment	**24,1**
6	Confidence issue	14,8
7	Ignore the use of Internet	4,2
8	Lack of selling on line services	3,7
9	Lack of means	3,6
10	Deadline for delivery	2,8

The lack of conceived usefullness is the major obstacle for online buying ahead of Security issues.

The results

Businesses

Contextual elements
Geographical breakdown
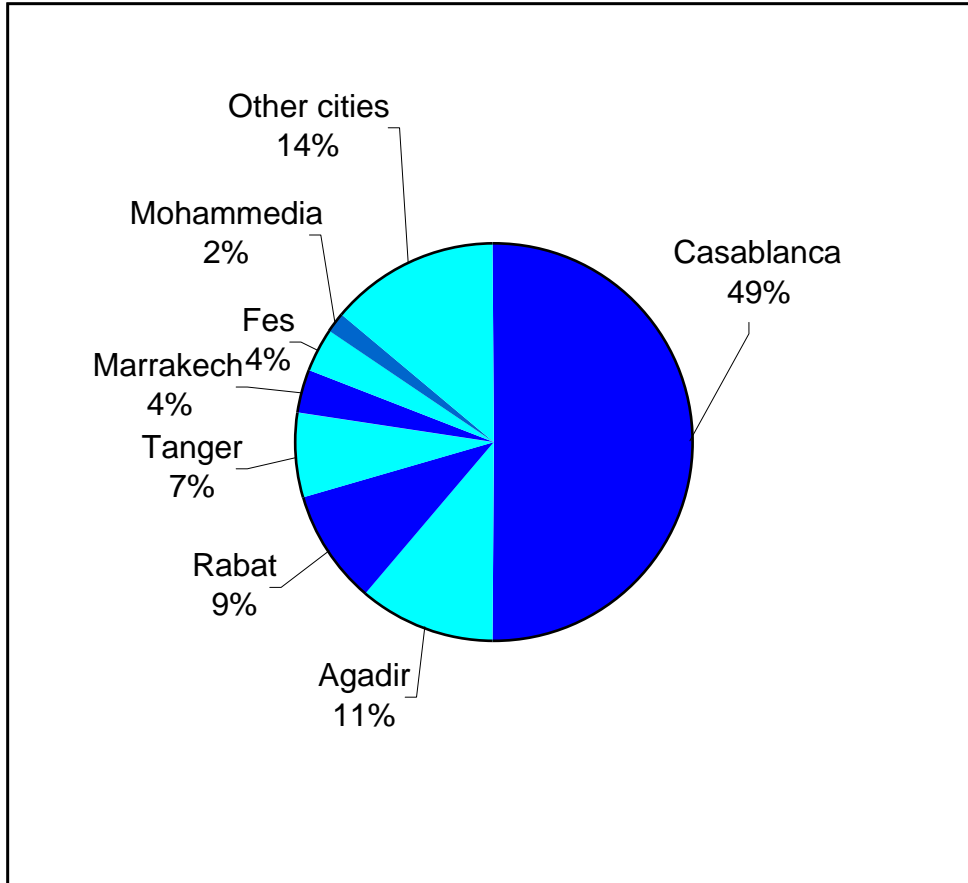
- About the half of businesses are located in Casablanca.

- Three cities (Casablanca, Rabat and Agadir) concentrate over 60% of businesses.

Contextual elements
Breakdown by type of activity and size
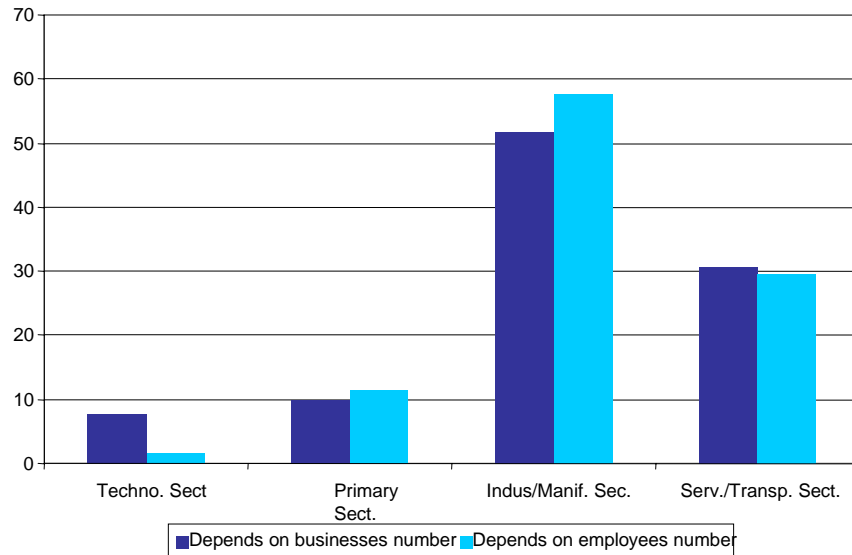
- The Industrial/Manifactoring sector comprises more than 50% of businesses and more than 57% of employees.

- The technological sector represents 8% of businesses, but only 1,5% of employees.
- => A sector made of very small and medium businesses.
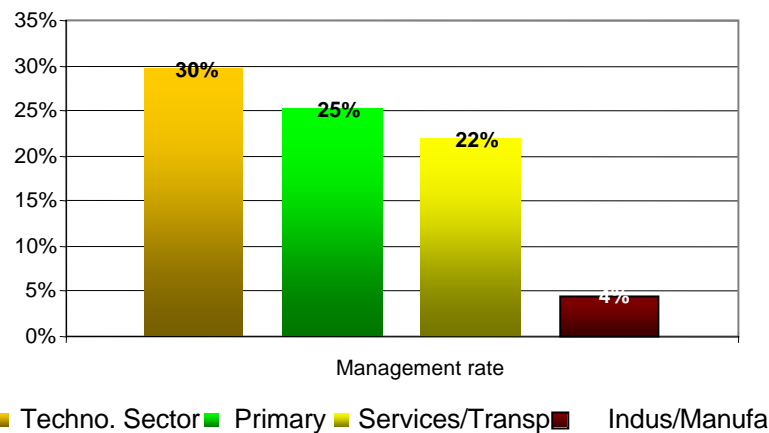
- Management rates very diverses from sector to an other. Over 30% for the technological sector and 4% for the Industrial/Manufactoring sector.

Businesses Equipement
Number of computers per employee

Chart: Computers per employee
- Technological sector: 0,66
- Primary sector: 0,41
- Service/Transport sector: 0,43
- Manufacturing/Building sector: 0,29
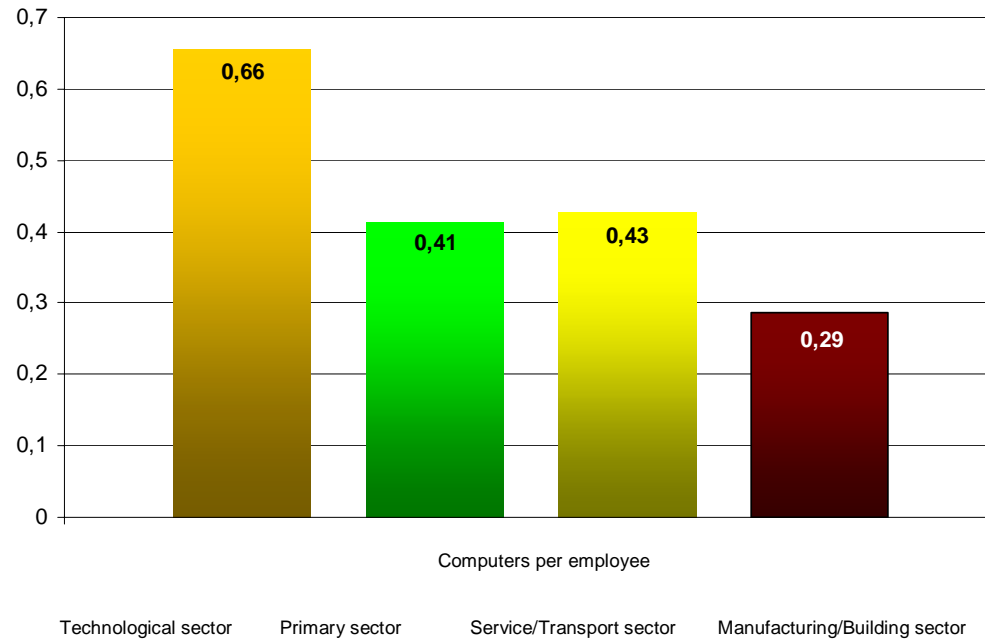
➡ The equipement vary from simple to double on average, comparing the technological sector and the Industrial/building sector.

Internet access
Connected Businesses

Proportion of Businesses connected following the type of activity
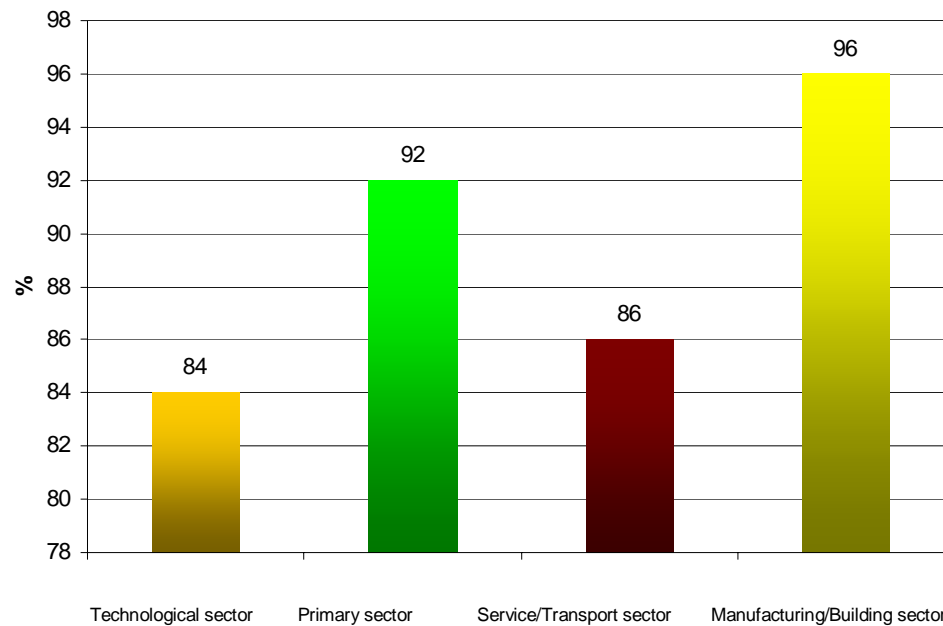
A high level of connection on average, with wide variations between sectors.

Internet accesse
Connection modes

- Connection modes favouring ADSL solutions.

- Coexistence of many solutions within same firm.

Leased Lines
10%

Others
2%

Low Speed
21%

ADSL/Cable
67%
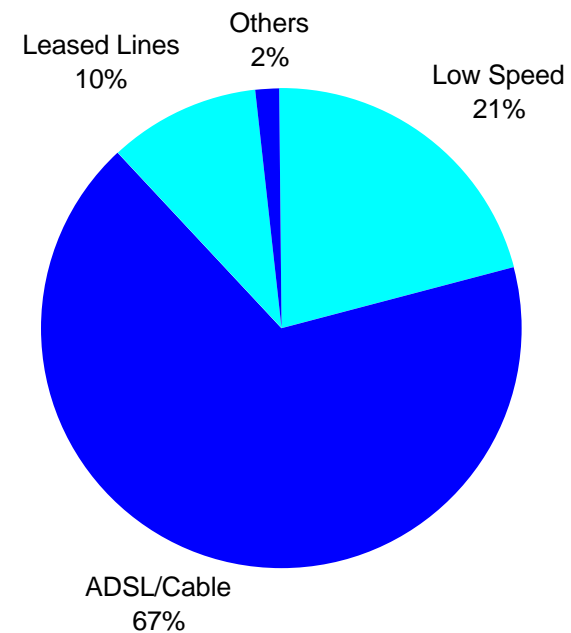
Internet access
Internet access witin businesses

- Connection rates very different depending on the sectors.

- A connection rate of « only » 40% in the technological sector and under 20% in the Industrial/Building sector.

Proportion of office computers connected to the Internet
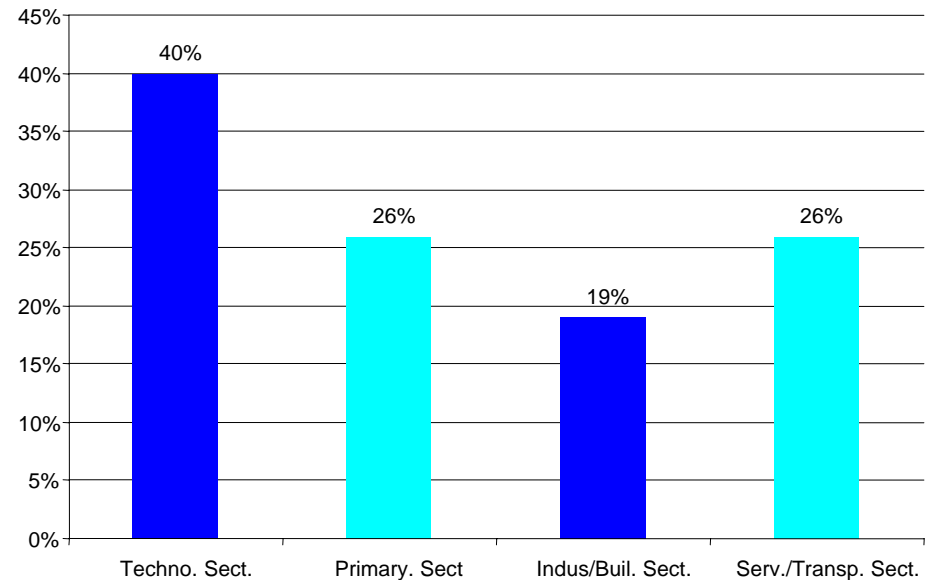
Internet usages
Intranet existence
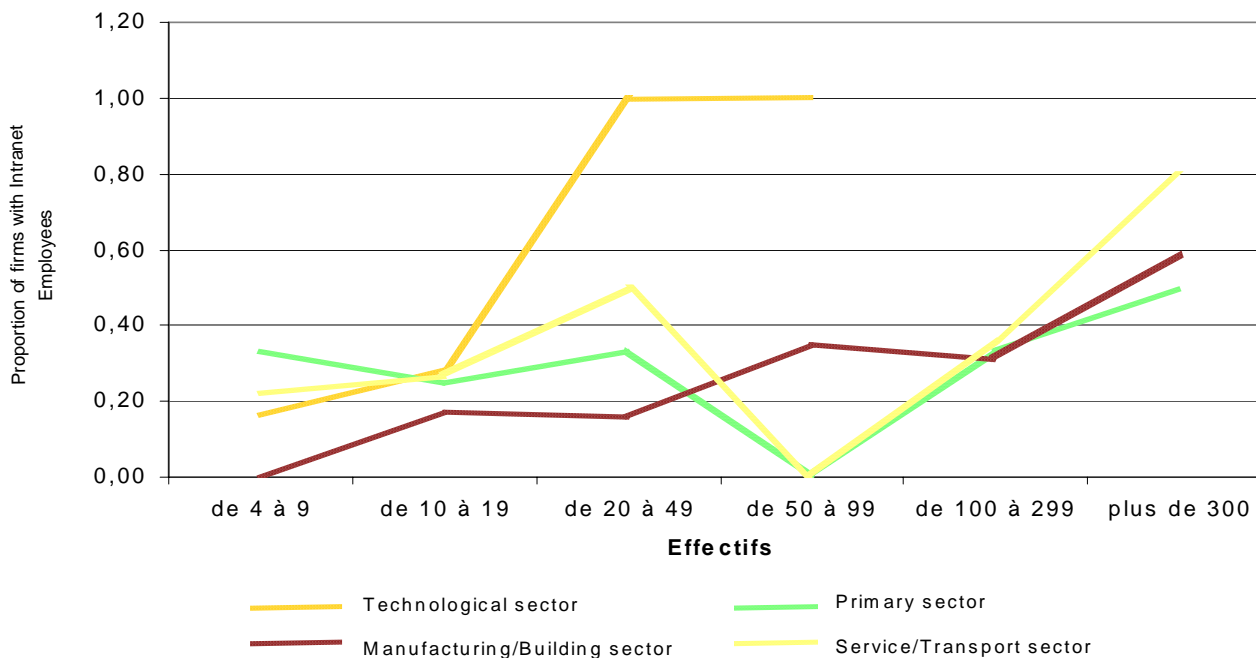
- The size of the firm within the same sector has an important impact on the Intranet existence.
- The Technological sector and the Services/Transport sector are the more equiped.

Internet usages
Usage of the Intranet
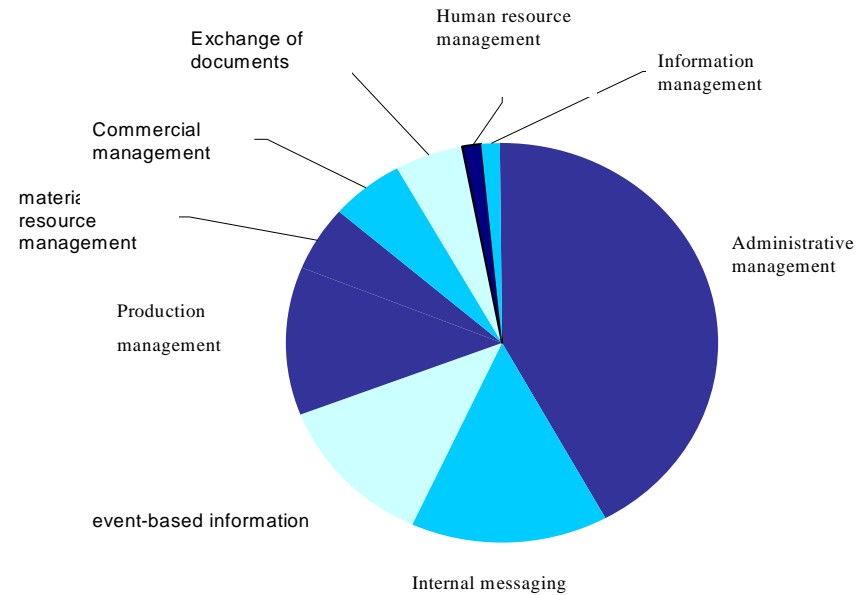
- The Intranet is used mainly for administrative management and mailing purposes,
- But less used as a tool for the production optimization.

Internet usages
Existence of a web site
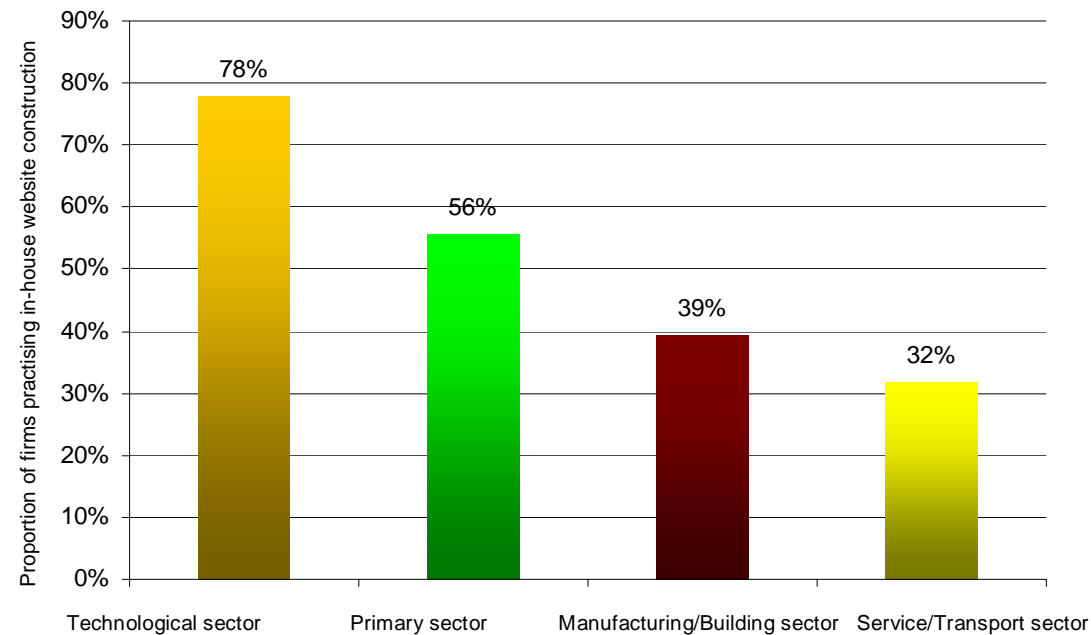
On average 38% of businesses have a web site
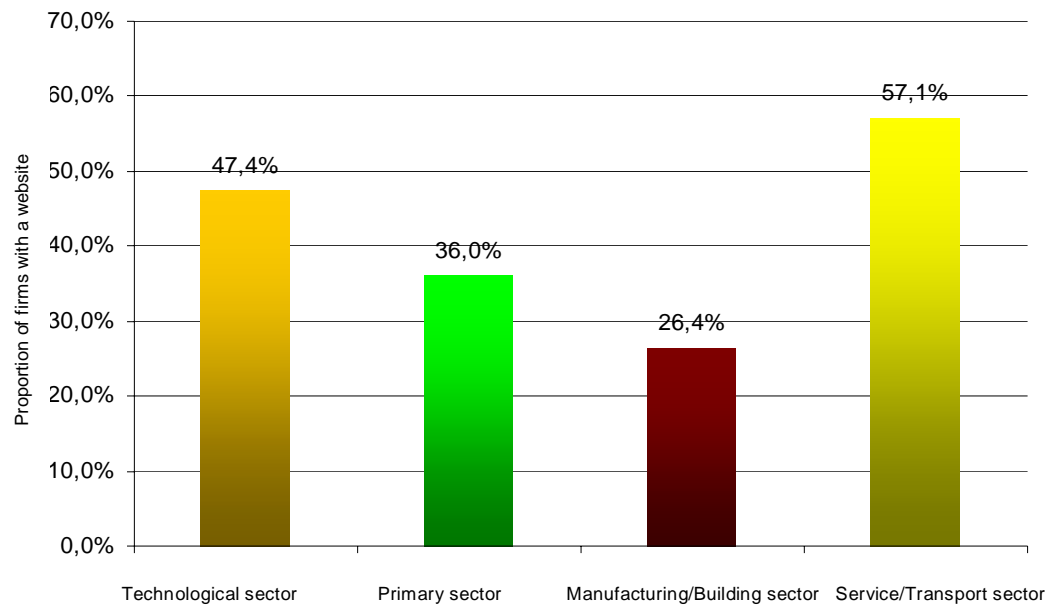
Internet usages
Web site development modes

Proportion of firms designing their web site internally

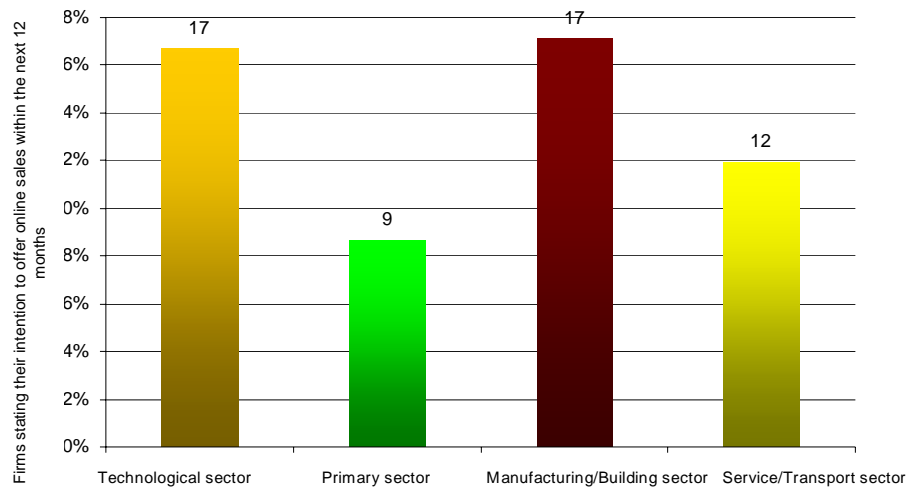The technological sector is the one outsourcing less the development of the web site.

Internet usages
On line trading

Proportion of businesses purchasing online

The B to B is relatively less developed than the e-commerce but in the both cases, only few businesses are concerned.

Proportion of Businesses selling online