

- E-government evolution in EU local governments: a comparative perspective

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E-government evolution in EU local governments: a comparative perspective

- Outline of the paper
- 1.- Introduction
- 2.- Theoretical and Institutional Contexts
- 3.- Methodology
- 4.- Main findings

E-government evolution in EU local governments: a comparative perspective

- The adoption of **web-based technologies** has become a **critical element** in modernization programmes of Western democracies in order to strengthen citizens' trust in governments and to gain legitimacy.
- E-government may **refer to narrower or broader areas**. The **broader approach** extends to key issues such as the **online engagement of stakeholders**, debating **public policies**.
- In this context, a **central question is whether, in fact, e-government** is developed towards a more transparent, interactive, open and accountable government.
- This article conducts an **empirical study** about the advances and trends of e-government in the local governments of the **fifteen EU countries** which **cover over 80%** of the population of the twenty seven EU countries and **represent the different types of public administration styles** of Western developed countries.
- The paper compares the development of the Web sites of **75 cities between 2004 and 2007 to determine to what extent the Internet promotes the convergence towards more transparent and accountable governments**.
- To date, there are **no comprehensive benchmarks** of the progress of European cities

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Theoretical framework

- Institutional theory
- Diffusion of Innovations theory

Public administration style context

- Several authors have pointed out that the cultural framework and the national context are key factors to explain the different features of public sector reforms.
- The public administration style contributes to understanding differences in public sector reforms initiatives across countries.
- Anglo-American, Germanic, Southern European and Nordic.

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■ METHODOLOGY

- We have **assessed** the level of e-government developments between 2004 and 2007, based on **four different dimensions**: transparency, interactivity, usability and Web site maturity.
- We conducted a comprehensive content analysis of 75 local government Web sites using a **73-item** of evaluation (see Appendix A):
 - **twenty-five** items belong to the transparency dimension,
 - **twenty-nine** to the interactivity dimension and
 - **twelve and seven** to the usability and website maturity dimensions, respectively

TRANSPARENCY	2004	2007	t-test
Ownership			
Ownership of site content	89.33%	98.67%	-2.438*
Last updated	30.67%	28.00%	0.356
Contacts/Reachability			
Postal address	90.67%	96.00%	-1.308
Employees' phone numbers	34.67%	45.33%	-1.332
Email address person responsible for content & technical support	9.33%	8.00%	0.288
Email person responsible for tech. support	46.67%	37.33%	1.155
Email person responsible for content	22.67%	26.67%	-0.565
Person responsible for technical support appears NOT to be a commercial firm	68.29%	71.43%	-0.293
Organizational Information			
Details for senior officials	30.67%	57.33%	-3.392**
Mission statement/activities	22.67%	53.33%	-1.050**
Organization chart	37.33%	52.00%	-1.814
Issue Information			
Content arranged on topics	92.00%	93.33%	-0.311
Issue related addresses	98.67%	100.00%	-1.000
Non-issue related addresses	97.33%	98.67%	-0.580
Addresses for non governmental institutions	85.33%	82.67%	0.433
Reports on easy readable format	98.67%	97.30%	0.580
Index for reports, publications, laws...	82.67%	94.66%	-2.345*
Publications for free	90.54%	78.67%	2.024*
Link or text to FOIA	33.85%	40%	-0.442
Citizen consequences			
Explanations of requirements	78.67%	86.67%	-1.293
Instructions	70.66%	85.33%	-2.188*
Index for forms	62.86%	67.12%	-0.532
Instructions on how to appeal	32.00%	37.33%	-0.683
Security and Privacy			
Privacy policy	28.00%	56.00%	-3.599**
Security policy	10.67%	14.67%	-0.733

INTERACTIVITY	2004	2007	t-test
Security and Privacy			
No cookies	60.00%	44.00%	1.975*
Security access method	2.67%	33.78%	-5.295**
Security access method for transactions			-1.746
Yes	44%	58.66%	
No	25.33%	17.33%	
None found	30.66%	24%	
Contacts/Reachability			
E-mail link to webmaster	49.33%	40.00%	1.147
E-mail link to senior official	62.67%	78.67%	-2.171*
E-mail link to employees	41.33%	34.67%	0.837
Suggestion/Comment boxes	62.67%	73.33%	-1.400
Personal information not required	63.83%	65.45%	-0.169
No content limitation	97.87%	94.55%	0.857
Response limit provided	12.77%	16.33%	-0.507
Guest book	12.00%	9.33%	0.526
Forum	26.67%	18.67%	1.168
Organizational Information			
Link to sublevels in organization chart	39.29%	18.42%	1.837
Newsletter/alerts	30.67%	48.00%	-2.193*
Issue Information			
Link to issue related websites	96.00%	100.00%	-1.756
Link to non-issue related websites	92.00%	98.67%	-1.947
Link to no governmental websites	80.00%	86.67%	-1.092
Citizen consequences/Responses			
Forms	92%	97.33%	-1.454
Online forms	66.66%	78.66%	-1.653
Request specific services	68.00%	82.67%	-2.100*
Request a permit	14.67%	34.67%	-2.901**
Request a benefits payment	8.00%	20.00%	-2.136*
Request inf. or publications	26.67%	36.00%	-1.230
Registration for a benefits service or program	8.00%	26.67%	-3.095**
Registration for a training course	9.33%	21.33%	-2.055*
Online registration for a job	29.33%	44.00%	-1.873
Online payment of utility bills, taxes, fines...	28.00%	36.00%	-1.047
Make an appointment with officials, staff, etc	8.00%	4.00%	1.028
Link to appeal process	29.33%	42.67%	-1.706

TABLE 3: WEB SITE SCORES. RANKING OF CITIES. EVOLUTION 2004-2007.

			Transp.	Inter.	Usabiliby	Maturity	TOTAL	Change (%) 2004-2007	Change in the Ranking
1	Vienna	AU	80.83%	80.21%	58.33%	71.43%	77.39%	15.20%	0
2	The Hague	NE	68.33%	76.60%	62.50%	71.43%	71.36%	48.54%	+ 31
3	Liverpool	UK	77.08%	65.22%	83.33%	57.14%	70.97%	24.47%	+ 10
4	Frederiksberg	DK	66.25%	75.00%	70.83%	57.14%	69.30%	44.01%	+ 27
5	London	UK	75.00%	59.53%	79.17%	71.43%	68.87%	4.97%	- 2
6	Glasgow	UK	76.25%	65.53%	70.83%	42.86%	68.08%	21.72%	+ 9
7	Eindhoven	NE	72.50%	63.40%	62.50%	71.43%	67.75%	12.34%	+ 2
8	Barcelona	SP	75.00%	54.13%	62.50%	71.43%	65.05%	4.21%	- 1
9	Odense	DK	66.67%	65.91%	62.50%	57.14%	64.99%	29.85%	+ 17
10	Birminham	UK	68.75%	69.57%	66.67%	28.57%	64.85%	-0.37%	- 6
11	Aalborg	DK	75.83%	61.36%	54.17%	42.86%	64.58%	49.01%	+ 32
12	Hamburg	GE	77.92%	56.38%	62.50%	42.86%	64.26%	9.43%	- 1
13	Naples	IT	83.33%	48.48%	66.67%	42.86%	63.68%	23.82%	+ 9
14	Paris	FR	76.25%	54.04%	70.83%	42.86%	63.49%	11.78%	0
15	Linz	AU	76.67%	58.51%	54.17%	28.57%	62.34%	11.48%	+ 1
16	Zaragoza	SP	54.17%	76.09%	58.33%	42.86%	62.22%	34.97%	+ 20
17	Rotterdam	NE	74.58%	48.94%	70.83%	57.14%	62.21%	22.97%	+ 6
18	Munich	GE	72.08%	58.51%	70.83%	28.57%	62.18%	50.70%	+ 29
19	Cork	IR	77.08%	49.57%	70.83%	42.86%	62.03%	37.33%	+ 21
20	Göteborg	SW	80.42%	45.68%	79.17%	28.57%	61.21%	-6.71%	- 18
21	Sheffield	UK	82.50%	45.32%	70.83%	28.57%	61.07%	9.56%	- 4
22	Utrecht	NE	76.67%	44.47%	66.67%	57.14%	60.83%	32.99%	+ 15
23	Turin	IT	62.50%	54.57%	66.67%	71.43%	60.64%	-5.65%	- 18
24	Stockholm	SW	72.92%	53.40%	70.83%	28.57%	60.47%	-2.36%	- 16

			Transp.	Inter.	Usabiliby	Maturity	TOTAL	Change (%) 2004-2007	Change in the Ranking
25	Helsinki	FI	64.58%	53.83%	66.67%	57.14%	59.75%	-4.83%	- 19
26	Graz	AU	68.75%	54.55%	75.00%	28.57%	59.68%	46.17%	+ 23
27	Copenhagen	DK	76.67%	44.77%	45.83%	57.14%	58.87%	9.40%	- 7
28	Amsterdam	NE	66.67%	42.83%	58.33%	85.71%	58.20%	-2.69%	- 18
29	Aarhus	DK	58.33%	57.02%	62.50%	57.14%	58.11%	0.16%	- 17
30	Madrid	SP	60.00%	55.53%	66.67%	42.86%	57.17%	13.73%	- 5
31	Marseille	FR	72.50%	42.50%	66.67%	42.86%	56.95%	63.46%	+ 32
32	Berlin	GE	72.08%	49.15%	58.33%	14.29%	55.75%	12.26%	- 4
33	Vantaa	FI	70.83%	44.26%	66.67%	28.57%	55.56%	15.56%	- 1
34	Espoo	FI	60.42%	52.13%	58.33%	42.86%	55.14%	35.51%	+ 16
35	Frankfurt	GE	69.57%	43.91%	66.67%	28.57%	54.92%	-0.81%	- 17
36	Malmö	SW	59.58%	50.23%	66.67%	42.86%	54.88%	38.62%	+ 17
37	Oporto	PT	70.83%	40.23%	54.17%	42.86%	54.13%	9.27%	- 8
38	Turku	FI	72.92%	38.72%	79.17%	14.29%	54.00%	3.59%	- 17
39	Palermo	IT	80.83%	36.17%	37.50%	28.57%	53.41%	7.44%	- 12
40	Salzburg	AU	54.17%	55.22%	50.00%	42.86%	53.04%	-2.09%	- 21
41	Dublin	IR	56.25%	47.83%	83.33%	28.57%	52.82%	16.78%	- 3
42	Antwerpen	BE	57.50%	42.55%	62.50%	57.14%	51.99%	23.32%	+ 3
43	Luxembourg	LU	65.22%	36.98%	79.17%	28.57%	51.65%	15.89%	- 2
44	Uppsala	SW	67.92%	32.55%	83.33%	28.57%	51.38%	4.56%	- 14
45	Milan	IT	58.33%	35.65%	62.50%	71.43%	50.99%	1.11%	- 21
46	Sevilla	SP	54.17%	49.57%	50.00%	42.86%	50.78%	39.24%	+ 12
47	Nice	FR	58.33%	50.43%	58.33%	14.29%	50.77%	34.35%	+ 10
48	Tampere	FI	70.83%	37.61%	58.33%	14.29%	50.64%	20.14%	- 2
49	Lisbon	PT	63.75%	44.68%	41.67%	28.57%	50.40%	15.57%	- 7
50	Limerick	IR	72.92%	30.00%	75.00%	14.29%	50.10%	32.19%	+ 6

			Transp.	Inter.	Usabiliby	Maturity	TOTAL	Change (%) 2004-2007	Change in the Ranking
51	Rome	IT	58.33%	52.39%	37.50%	14.29%	49.47%	4.46%	- 17
52	Galway	IR	64.58%	36.28%	62.50%	28.57%	49.45%	50.95%	+ 14
53	Gent	BE	56.25%	42.83%	50.00%	42.86%	48.92%	13.77%	- 9
54	Lyon	FR	55.83%	40.85%	79.17%	14.29%	48.02%	6.22%	- 15
55	Toulouse	FR	60.00%	38.09%	58.33%	28.57%	47.92%	31.97%	+ 4
56	Valencia	SP	54.17%	41.09%	62.50%	28.57%	47.21%	19.22%	- 4
57	Innsbruck	AU	72.50%	33.19%	45.83%	0.00%	46.86%	19.48%	- 2
58	Braga	PT	64.17%	33.83%	50.00%	14.29%	45.63%	41.75%	+ 10
59	Amadora	PT	63.75%	31.28%	50.00%	14.29%	44.44%	139.31%	+ 15
60	Charleroi	BE	75.00%	20.47%	37.50%	14.29%	43.36%	7.46%	- 9
61	Linköping	SW	54.17%	31.14%	75.00%	14.29%	43.05%	9.49%	- 7
62	Waterford	IR	56.25%	26.74%	58.33%	28.57%	41.89%	29.13%	+ 5
63	Cologne	GE	60.87%	29.30%	41.67%	14.29%	41.66%	-10.72%	- 28
64	Coimbra	PT	60.00%	31.91%	41.67%	0.00%	40.93%	18.98%	0
65	Esch-sur-Alzette	LU	60.87%	25.65%	33.33%	28.57%	40.80%	15.65%	- 4
66	Pétange	LU	69.57%	18.04%	41.67%	14.29%	40.64%	14.29%	- 6
67	Chania	GR	67.83%	13.64%	29.17%	14.29%	36.93%	16.46%	+ 2
68	Liège	BE	58.33%	17.21%	50.00%	14.29%	36.65%	5.20%	- 6
69	Dudelange	LU	56.52%	20.23%	41.67%	14.29%	36.30%	-11.16%	- 21
70	Brussels	BE	54.17%	19.07%	50.00%	14.29%	35.72%	6.06%	- 5
71	Differdange	LU	52.17%	19.57%	25.00%	14.29%	32.62%	7.13%	- 1
72	Thessaloniki	GR	52.17%	15.22%	29.17%	14.29%	31.30%	28.54%	+ 1
73	Petra	GR	50.00%	19.35%	29.17%	0.00%	30.66%	85.14%	+ 2
74	Athens	GR	45.83%	12.05%	41.67%	0.00%	27.32%	-9.24%	- 3
75	Volos	GR	37.50%	11.96%	37.50%	28.57%	26.39%	-9.44%	- 3
TOTAL MEAN			65.79%	43.74%	58.72%	34.48%	53.13%	+ 19.50%	

TABLE 2: GLOBAL SCORE OF WEB SITES BY COUNTRY

			2004	2007	t-test				2004	2007	t-test
Anglo-Saxon	UK	Mean	59.88%	66.77%	-2.430*	Southern-European	Belgium	Mean	38.81%	43.33%	-1.203
		σ	0.0502	0.0387				σ	0.0428	0.0722	
	Ireland	Mean	38.70%	51.26%	-2.918*		France	Mean	42.19%	53.43%	-2.224
		σ	0.0632	0.0726				σ	0.0909	0.0671	
Nordic	Denmark	Mean	50.67%	63.17%	-3.845**		Greece	Mean	26.37%	30.52%	-1.252
		σ	0.0558	0.0466				σ	0.0613	0.0415	
	Finland	Mean	49.17%	55.02%	-1.380		Italy	Mean	52.64%	55.64%	-0.735
		σ	0.0889	0.0327				σ	0.0667	0.0621	
	Sweden	Mean	51.12%	54.20%	-0.480		Luxembourg	Mean	37.34%	40.40%	-0.760
		σ	0.1228	0.0744				σ	0.0547	0.0714	
	Netherlands	Mean	52.90%	64.07%	-2.894*		Portugal	Mean	35.66%	47.10%	-1.978
		σ	0.0676	0.0537				σ	0.1185	0.0518	
Germanic	Austria	Mean	51.46%	59.86%	-1.150		Spain	Mean	46.97%	56.48%	-1.681
		σ	0.1159	0.1150				σ	0.1018	0.0750	
	Germany	Mean	50.33%	55.75%	-1.079	TOTAL	Mean	45.64%	53.13%	-4.107**	
		σ	0.0693	0.0884			σ	0.1131	0.1114		

* Significant at the 5% level

** Significant at the 1% level

TABLE 6 Standardized regression coefficients and statistical significance

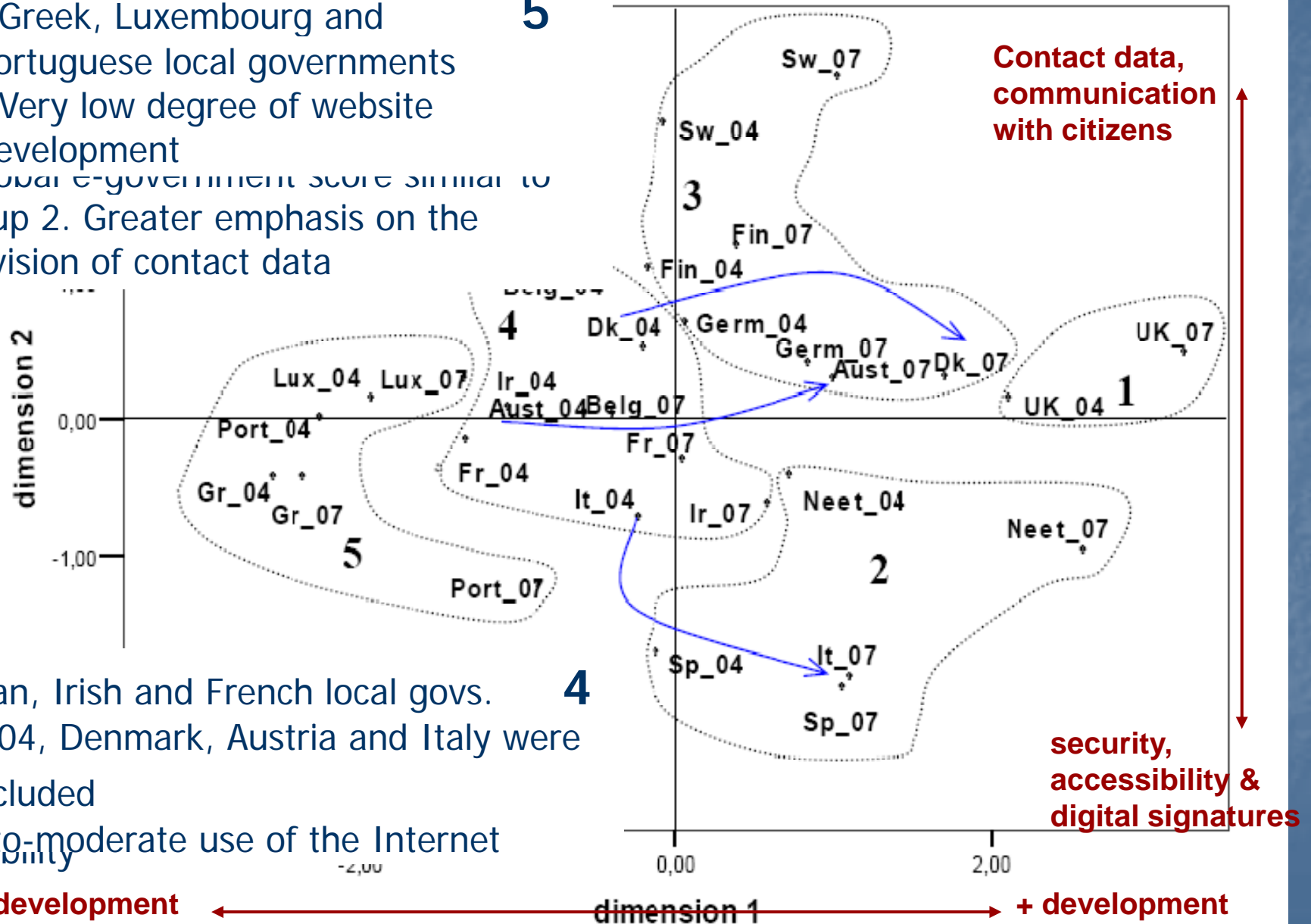
	2004			2007		
	MODEL 1	MODEL 2	MODEL 3	MODEL 1	MODEL 2	MODEL 3
Constant	-0.163	(-0.227)**	-0.450	-0.015	-0.089	(0.389)***
Log population	(0.535)***	(0.560)***	(0.514)***	(0.482)***	(0.510)***	(0.439)***
Public Administration Style		(0.384)***	-0.104		(0.469)***	(0.057)
Internet penetration			0.186			(0.194)**
e-commerce			(0.374)*			(0.262)**
Internet access cost			0.001			-0.009
Security			0.050			0.009
Central e-government			0.155			(0.243)***
R ²	0.287	0.434	0.586	0.232	0.452	0.608
N	75	75	75	75	75	75

Note: *** p < 0.01; ** p < 0.05; * p < 0.1

Exhibit 1 - MDS Projection on Dimension 1 and Dimension 2

- Greek, Luxembourg and Portuguese local governments
- Very low degree of website development
- Global e-government score similar to group 2. Greater emphasis on the provision of contact data

5



Contact data,
communication
with citizens

security,
accessibility &
digital signatures

- development

dimension 1

+ development

- Belgian, Irish and French local govts.
- In 2004, Denmark, Austria and Italy were also included
- Low to moderate use of the Internet accessibility

4

■ RESULTS

- The comparison of the 2004 and 2007 scores show advances in almost all items, with statistically significant improvements in important issues concerned with bringing governments closer to citizens.
- Our results show a higher degree of development in items which represent a mere dissemination of information at the billboard stage.
- The items which would allow citizens to interact directly with governments and to request information from officials, presented the worst levels of implementation in 2004.
- However, in 2007, they show statistically significant improvements.
- By dimensions, interactivity and web maturity, which seek democratic participation by encouraging citizen dialogue, show the highest advances, even though they still show the lowest scores.

■ RESULTS

- Table 3 shows the scores obtained by the cities studied. As can be seen, **there is no public administration style which remains aloof** from the implementation of ICTs, since **cities from the four public administration styles score over 65%**.
- With a score of over 60%, there are **24** cities; **9** cities from **Nordic**, **4** from **Germanic**, **5** from **Southern European** and **6** from **Anglo-Saxon** countries, which shows a **balance between public administration styles**.
- In **2004** over 60% scored only **9** cities: **4** cities from **Nordic**, **1** from **Germanic**, **2** from **Southern European** and **2** from **Anglo-Saxon** countries
- Likewise, in 2004 **26** cities scored over 50% while, at present, there are **50** cities.

- Main findings

- Overall results show an **average improvement of 19.5%**, which is an outstanding improvement in three years and **reflects a trend of convergence towards best practices in transparency and interactivity** even though **differences between countries remain**.
- Even though significant improvements can be observed between 2004 and 2007, the **relative differences** between countries still **remain**.
- **Our study shows that interactivity is an underdeveloped** dimension of the Web sites analysed, although some improvements can be observed.
- The **implementation of e-government** initiatives is carried out **following similar philosophies and contents** throughout the EU countries, **although overlapped** with the traditional public administration style of each group of countries.