

EasyWay



Annual Forum 2010



Shortcut to the future.

Lisbon • November 16th-18th



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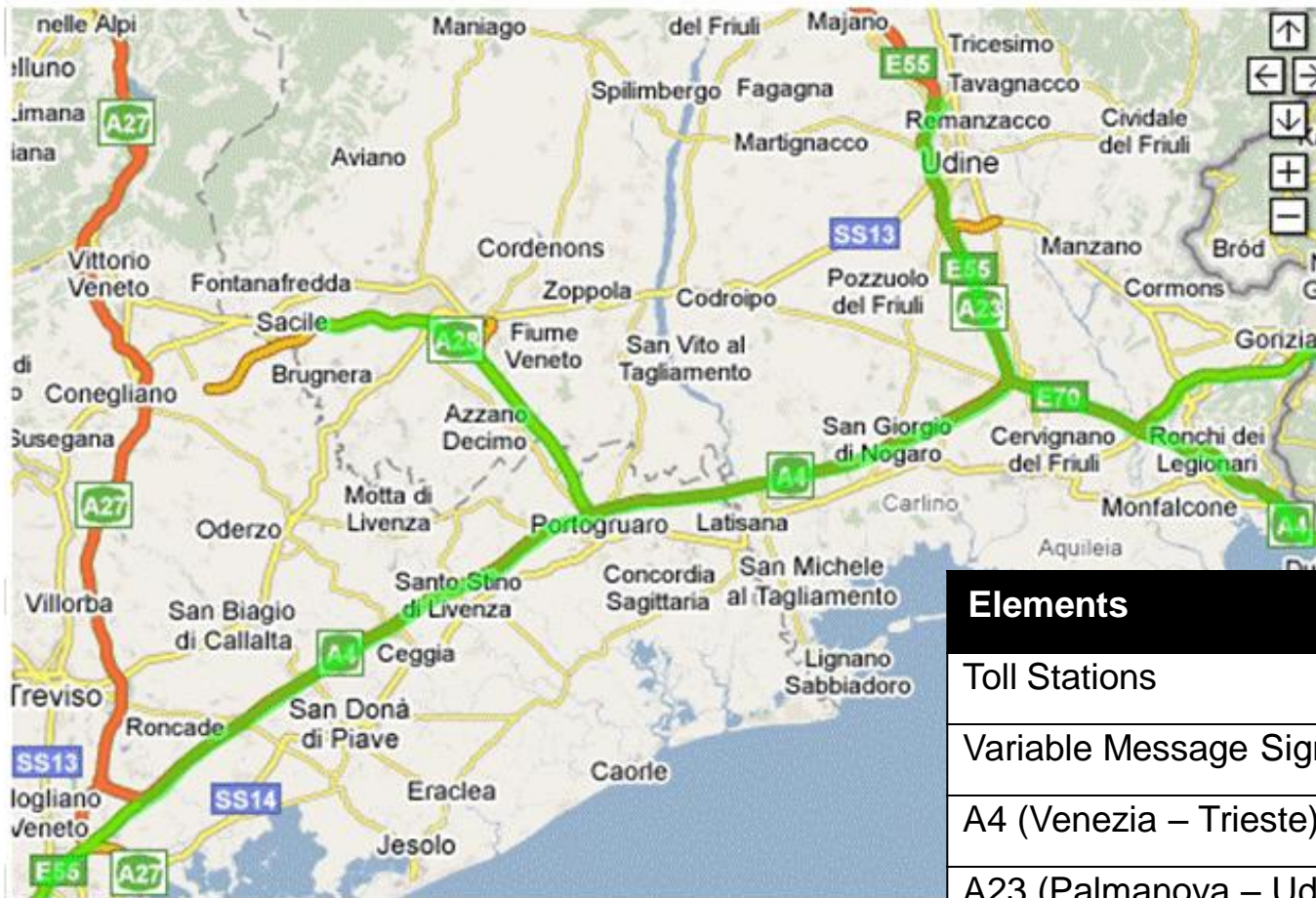
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Evaluation of ITS systems installed by Autovie Venete SpA

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Motorway network managed by Autovie Venete



Elements	
Toll Stations	12
Variable Message Signs in itinere	23
A4 (Venezia – Trieste)	126 Km
A23 (Palmanova – Udine)	18 Km
A28 (Portogruaro – Conegliano)	45 Km



ITS technologies and systems evaluated:

- Centralized Monitoring Centre for ETC
- Sum of different ITS systems installed over several years: Variable Message Signs, Traffic Control and Information Centre (monitoring, SOS, video surveillance, meteo), ecc.

↳ overall assessment of accident trend

- Internet site www.autovie.it



Centralized Monitoring Centre for ETC

- system for centralized management of toll gates anomalies, integrated in the ETC system (electronic toll collection), active since 2008
- the system monitors 12 stations on the motorways A4 and A23
- for each anomaly: specification of toll gate, track, fault description
- purpose of the system:
 - speeding up operations once the anomalies have occurred
 - define preventive maintenance through a historical analysis of anomalies



Centralized Monitoring Centre for ETC

Objectives and methodology of the evaluation

- analysis of the system impact considering the possible reduction in the number of events registered after the entry into operation of the system itself
- distinguish between anomalies due to:
 - malfunction or failure of physical systems responsible for service delivery → real chance to achieve improvements
 - inattention and neglect of users → little opportunity to achieve improvements

2004

2005

2008



Centralized Monitoring Centre for ETC

ANOMALIES – absolute values

System - Pre [No of anomalies]	System - Post [No of anomalies]	diff. (absolute)	diff. %
240.520	228.230	-12.290	-5,11%

ANOMALIES – rates

System - Pre [anomalies/1000 vehic]	System - Post [anomalies/1000 vehic]	diff. (absolute)	diff. %
5,17	4,38	-0,79	-15,21%

absolute values: light improvement
anomalies rate: significant improvement



Centralized Monitoring Centre for ETC

RATE OF ANOMALIES – ANALYSIS BY MONTH AND BY TOLL STATION

Month	System Pre	System Post	Diff. %	Stazione	System Pre	System Post	Diff. %
1	4.38	4.12	-5.92%	001	4.19	2.72	-34.97%
2	4.34	3.85	-11.24%	002	3.59	3.41	-4.88%
3	4.79	4.17	-13.00%	003	3.29	2.83	-13.94%
4	4.93	4.34	-11.97%	004	4.15	4.37	5.21%
5	5.37	4.13	-23.15%	005	3.37	3.10	-8.15%
6	5.59	4.79	-14.38%	006	3.85	7.97	106.85%
7	6.24	4.89	-21.65%	007	5.15	4.43	-13.98%
8	6.50	5.14	-20.94%	008	5.85	4.67	-20.20%
9	5.37	4.38	-18.28%	009	4.47	6.86	53.51%
10	4.60	4.12	-10.51%	010	4.89	7.49	53.09%
11	4.52	4.06	-10.20%	011	5.60	4.55	-18.85%
12	4.24	4.14	-2.34%	015	7.31	5.38	-26.40%

general reduction in all months

different trends at different toll stations



Centralized Monitoring Centre for ETC

ANOMALIES BY METHOD OF PAYMENT

absolute values

Type of payment	system pre	system post	diff. (absolute)	diff (%)
cash or cards	141.424	122.788	-18.636	-13,18%
ETC	56.670	56.280	-390	-0,69%

rates

Type of payment	system pre	system post	diff. (absolute)	diff. (%)
cash or cards	6,97	6,63	-0,34	-4,95%
ETC	3,14	2,52	-0,62	-19,78%

electronic toll collection: significant improvement
cash and cards: limited improvement



Sum of different ITS systems installed: evaluation of accident trends

Objectives and methodology of the evaluation

- Analysis of variation in the number and severity of accidents on the highways managed by Autovie Venete
- Continuous installations → study of trends
- Comparison with national average rate (Italy/EU)
- Focus on accidents caused by obstacles in the road (this type of accident can be prevented by using VMS to inform about the presence of the obstacle)

2002

2003

2004

2005

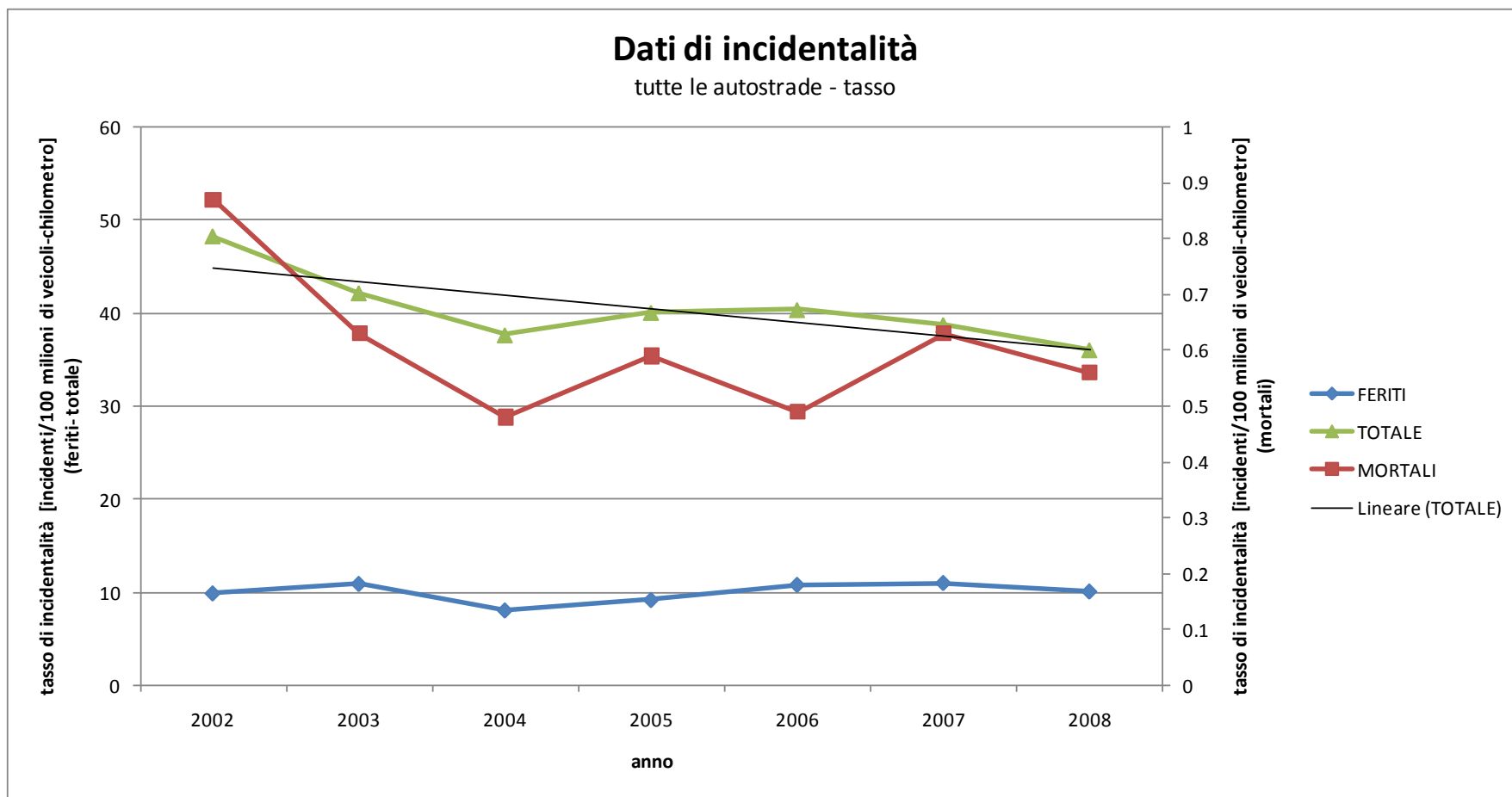
2006

2007

2008



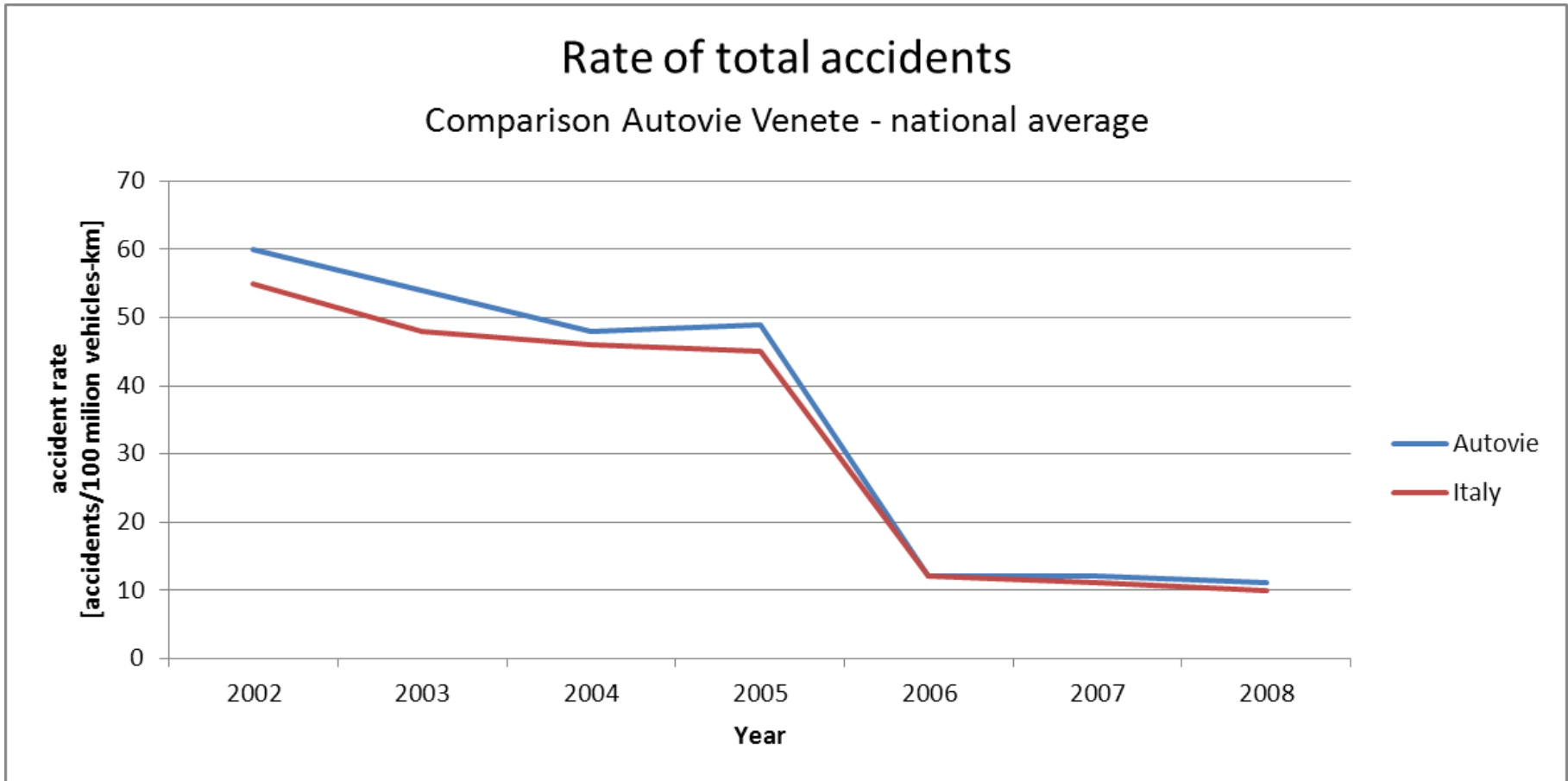
Accident rate trend



total: down with deaths: down with injuries: slight increase

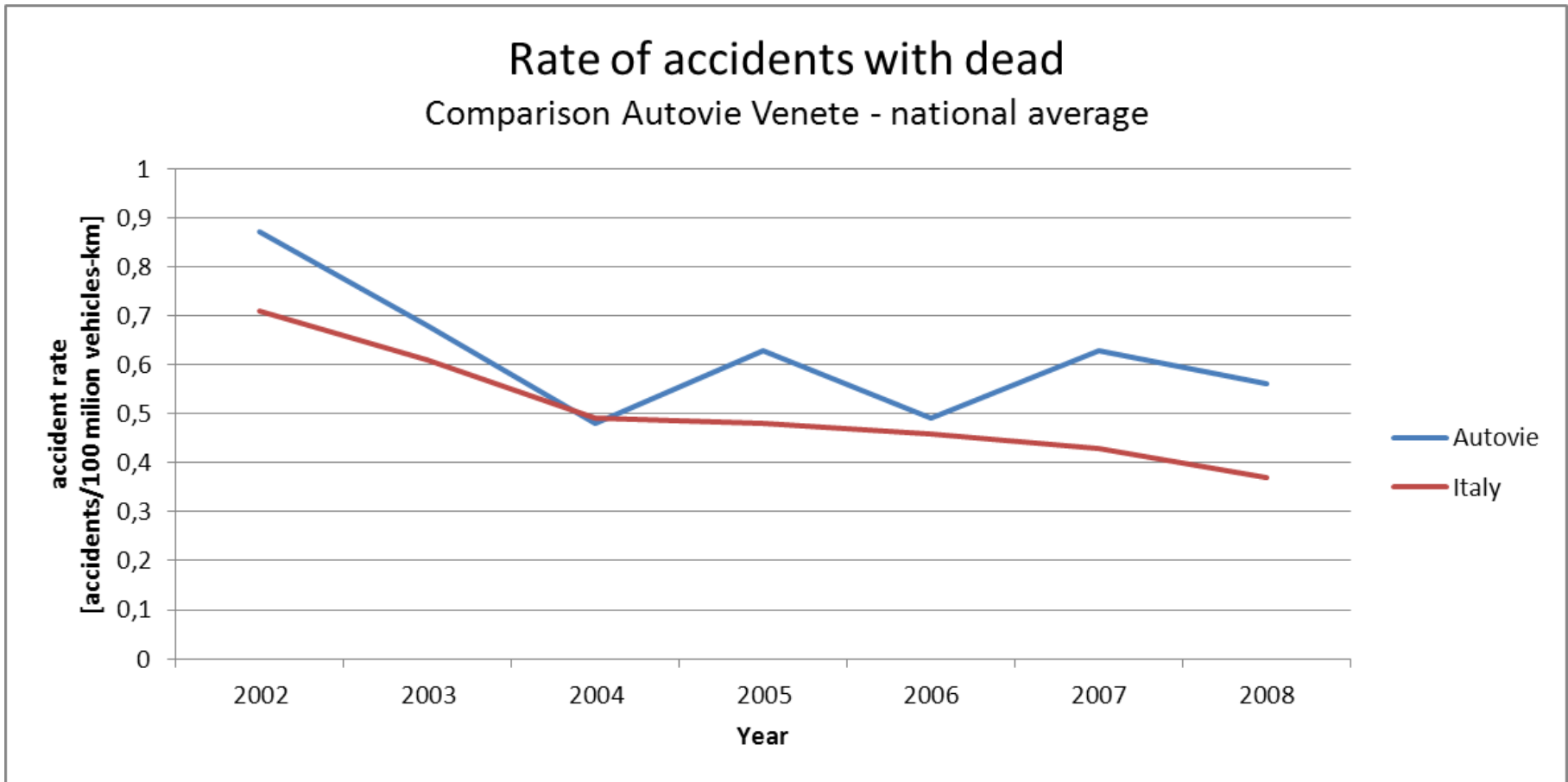


Comparison with national average rate



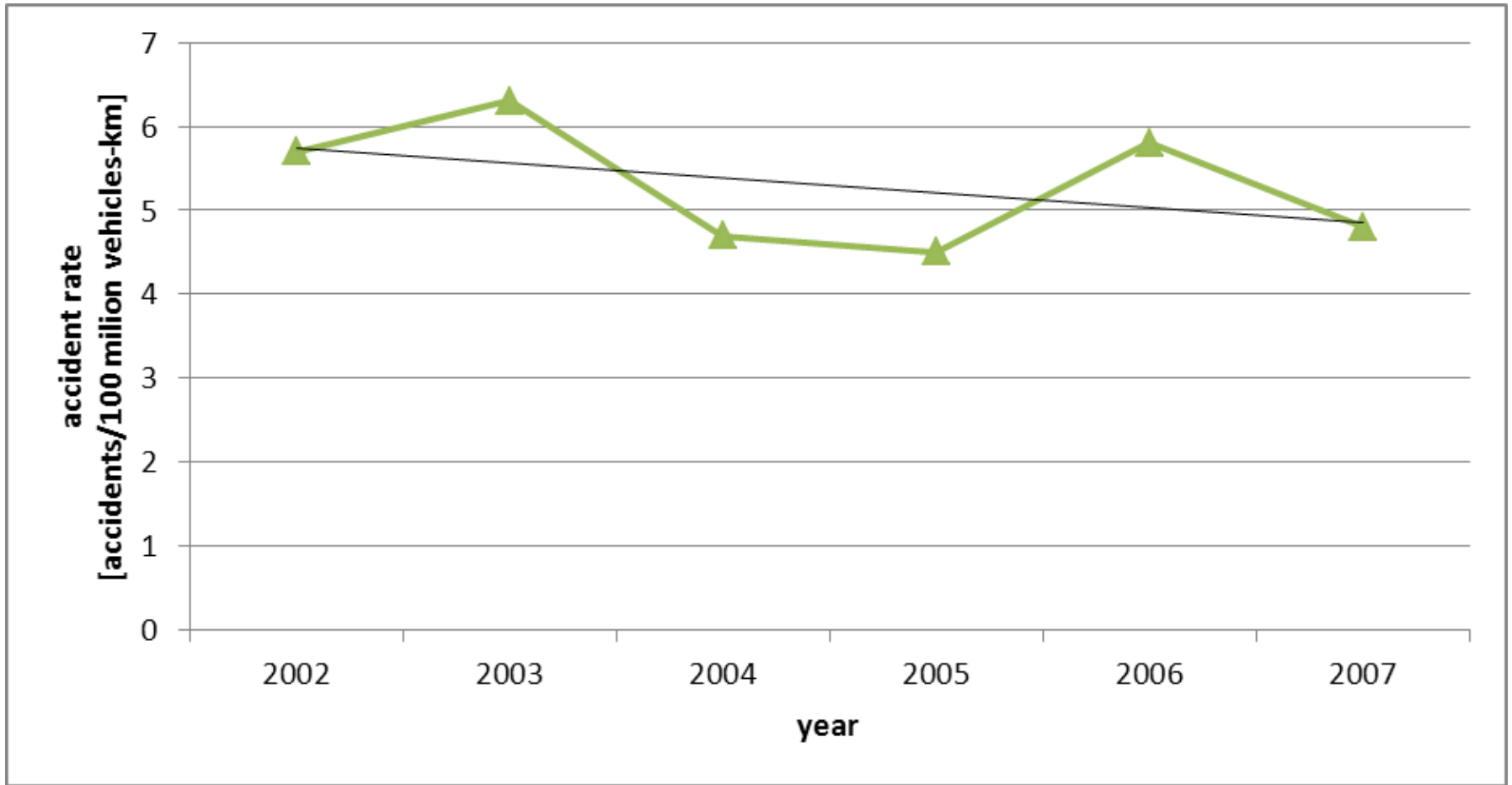


Comparison with national average rate





Accident rate (cause: obstruction in roadway) type of accident preventable with proper use of V.M.S.



trend: **down**



Internet site www.autovie.it

- The actual official concessionary internet website has been published on line in 2008 (the old one has been operative since 2001 – period of benchmarking: 2005 to 2007)
- The main purpose: to provide real-time information to users on the situation of the motorway network
- Main content:
 - traffic information in real time
 - interactive maps showing major road works, reduction of lanes, etc.
 - weather conditions and webcams installed on the network
 - RSS feeder, newsletter, opinion surveys, customer care on-line.
 - institutional information about the company and information about the infrastructure



Internet site www.autovie.it



Mapa Accessibile testo per la ricerca >>



Il traffico in **Tempo Reale** con la Cartografia Interattiva

Home Società Autostrada Sicurezza Assistenza Servizi Contatti

Traffico in tempo reale

Informazioni Traffico...
 A4 VENEZIA - TRIESTE, direzione ovest, Corsia di emergenza chiusa a causa di lavori di manutenzione, tra BARRIERA TRIESTE LISERT e REDIPUGLIA

Informazioni Traffico...
 A23 PALMANOVA - TARVISIO, direzione nord, Scambio di carreggiata, tra ALLACCIAMENTO A23 / A4 e UDINE SUD

Meteo

 **Gorizia**
Tempo: pioggia

Webcam

 A4 Barriera Trieste - Lisert 21/10 10:02

vai alla mappa >>



Map data ©2009 Tele Atlas - [Termini e condizioni d'uso](#)



Internet site www.autovie.it

Objectives and methodology of the evaluation

- evaluation of the user's response after the development of new Internet portal containing information services to users and value-added services
- trend analysis of parameters related to the use of different services of the website (from 2005 to 2009 - comparison between old and new portal):
 - number, duration and time of visits
 - services used

2005

2006

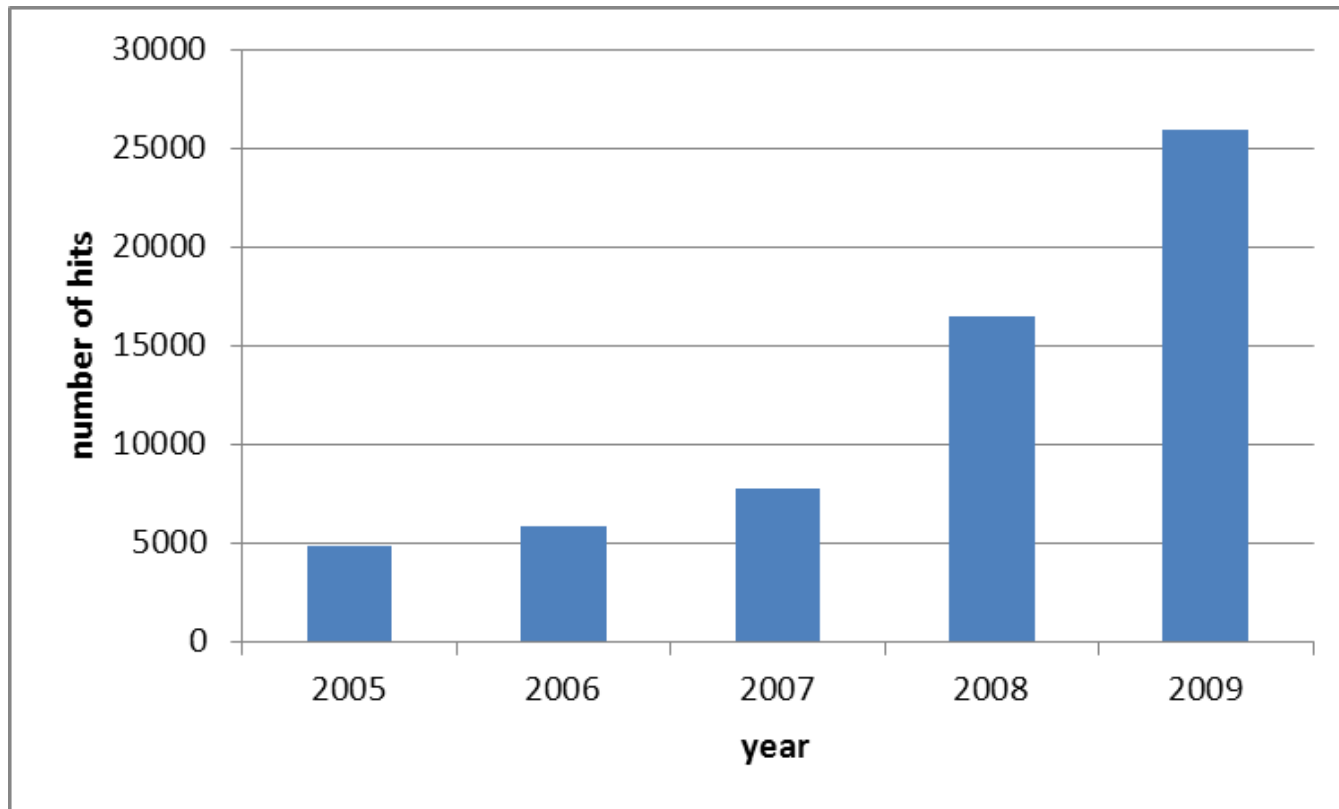
2007

2008

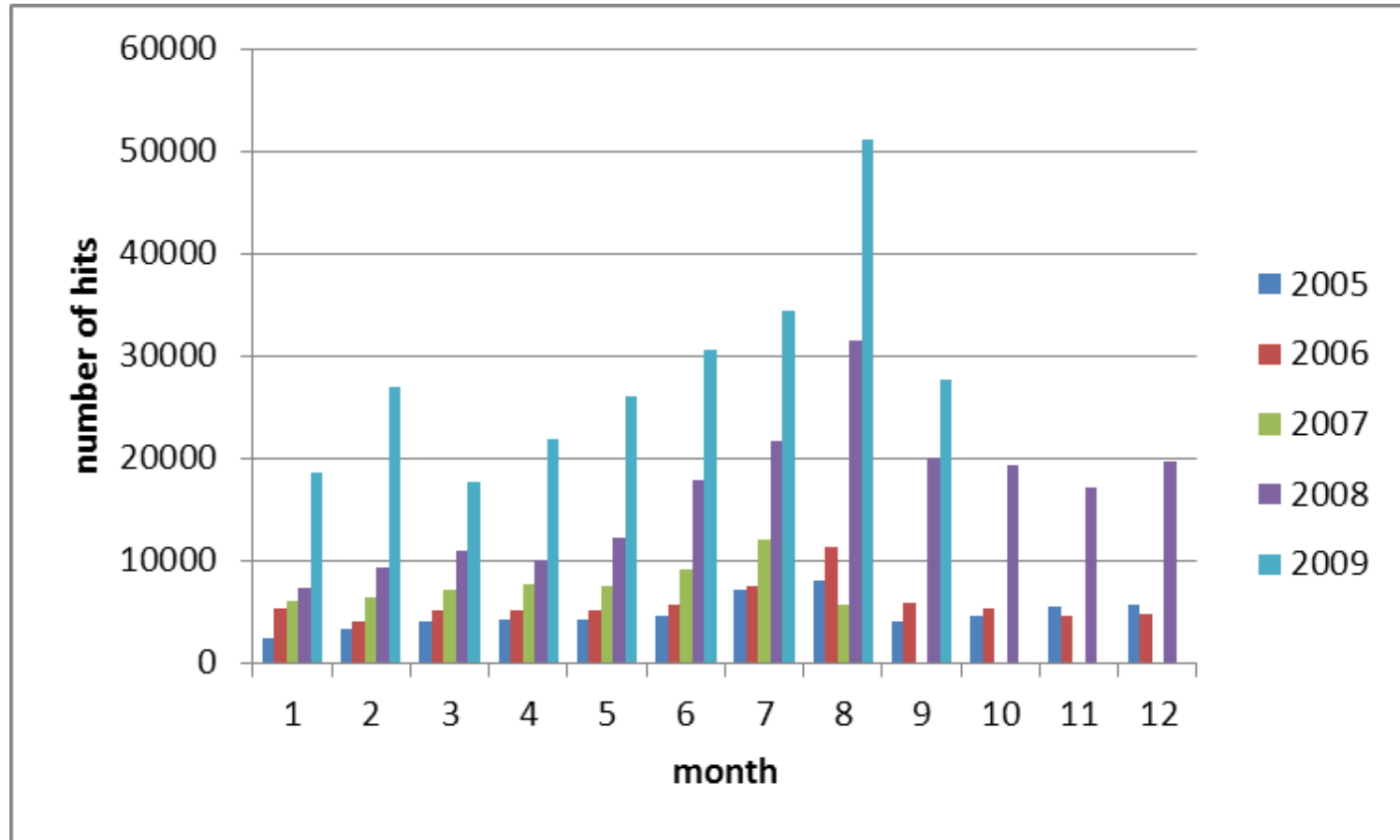
2009

Internet site www.autovie.it

NUMBER OF HITS – monthly averages for different years



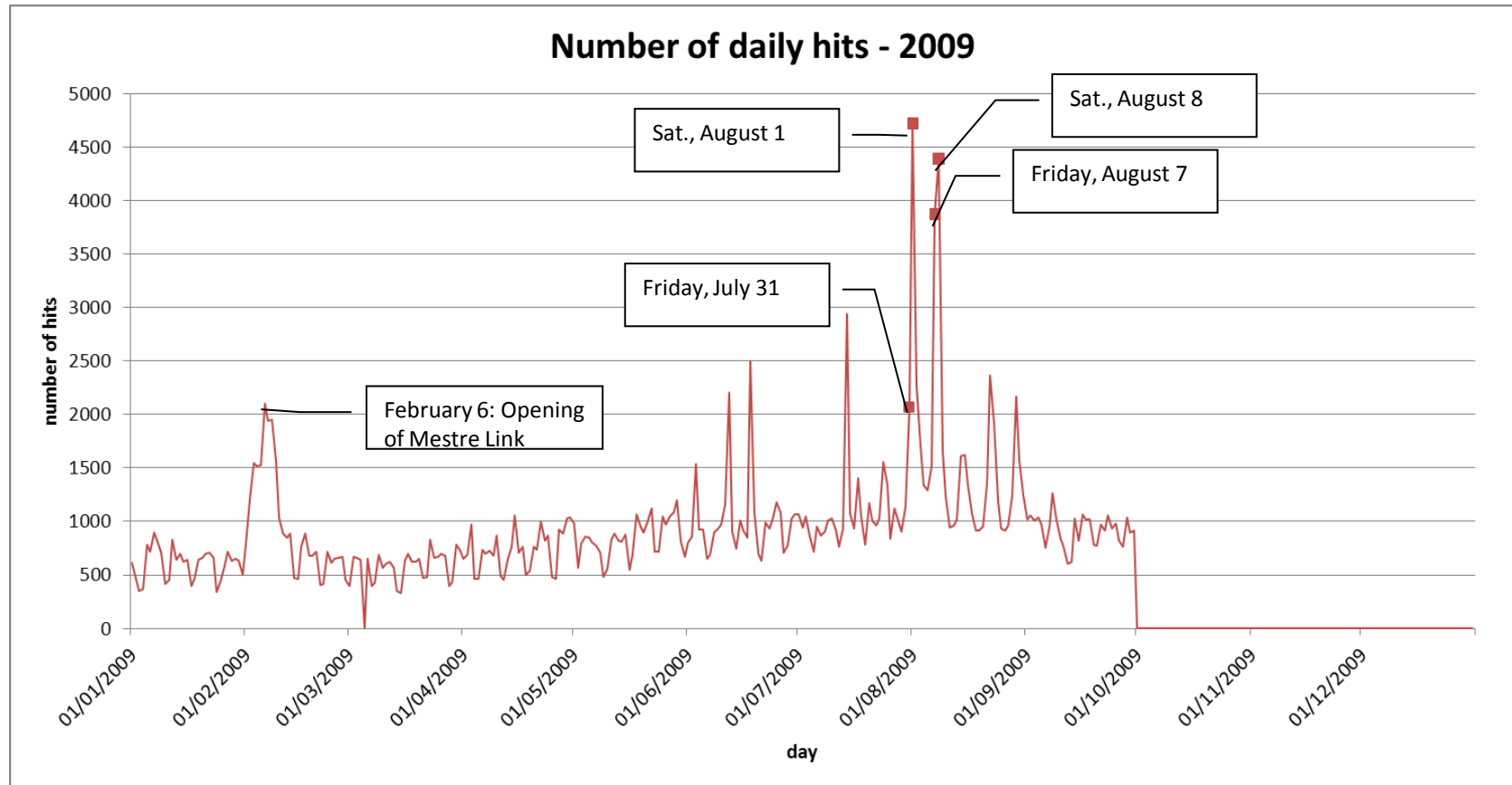
Internet site www.autovie.it



more visits and hits in the summer, when traffic flows related to tourism are high



Internet site www.autovie.it



greater use of the site during the great summer exodus or exceptional events



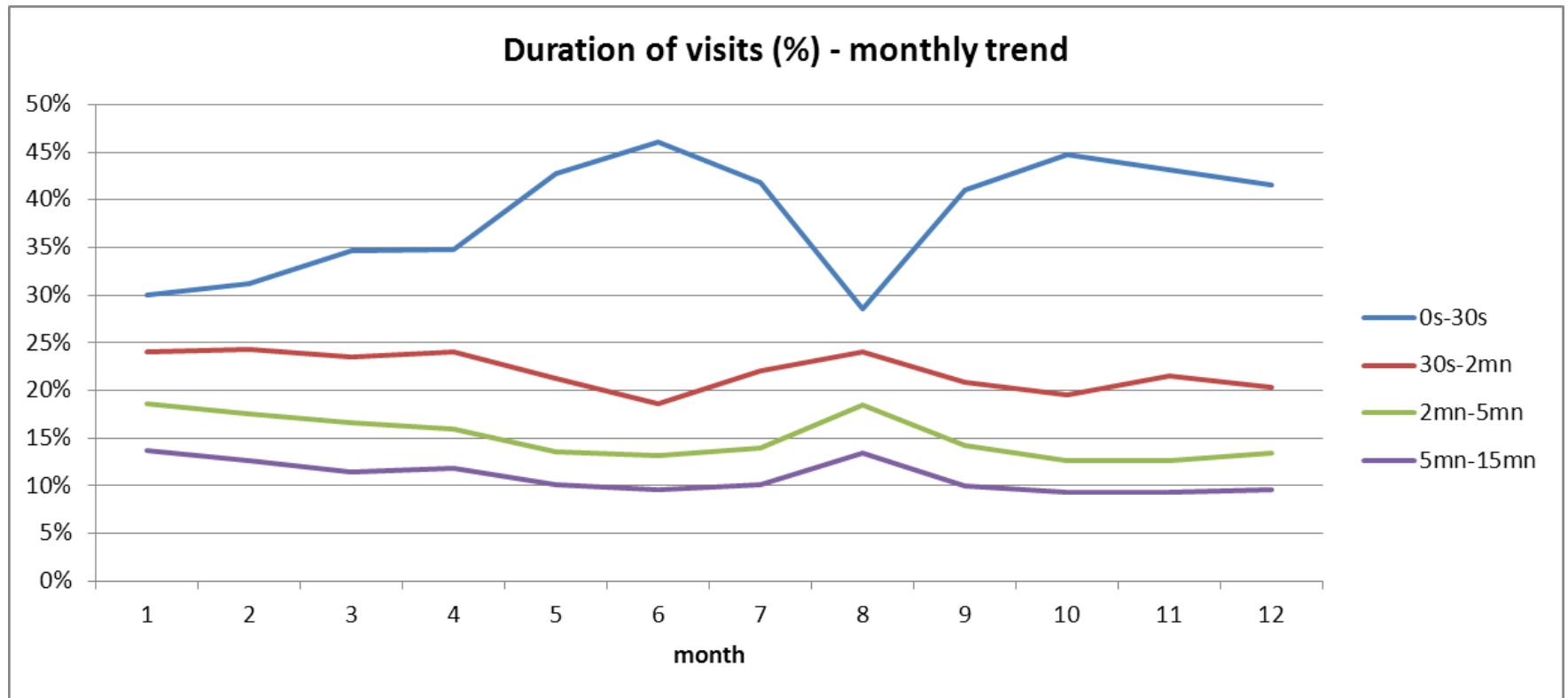
Internet site www.autovie.it

NUMBER OF VISITORS – USED SERVICES

Real time services	Percentage of views on total pages viewed
Traffic news	31%
Webcams	23%
Weather forecasts	22%
Other services	24%











over 75% of page views are related to traffic information, webcams and weather forecast

Internet site www.autovie.it



increase of lengthy visits in August at the expense of short visits (< 30 sec) → non-habitual users looking for detailed information



ASPECT	PERFORMANCE
Centralized Monitoring of Stretch	<ul style="list-style-type: none">•  reduction in average rate of anomalies:•  in all months•  not in all tool gates and for all types of anomaly
Accidents rate	<ul style="list-style-type: none">•  different trends in different sections:•  A4•  A23•  A28•  best starting conditions, but improvement below the national average
Internet web site	<ul style="list-style-type: none">•  exponential increase of visits•  use of the services with higher added value

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Thanks for Your attention

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