

**Access Control
and
Freight Delivery
in
Rome's Historic Core**

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STA - The Mobility Agency of the City of Rome

Environment

Traffic Impacts :

Congestion

Pollution

Environment

Reduce the impacts:

- Quality of life
- City attractiveness
- Economic growth

Mobility Related Data

Population	2.8 Million
Urbanised Area	500 Km²
Vehicles Per Resident	0.7
Parking Space Per Vehicle	1/6
Daily Total Trips	5,6 Million
Two Wheeled Vehicles	0.6 Million
Modal Split	60/40
Local Congestion Index	2 MVh/Hr

Management Model

MEASURES



SUPPLY

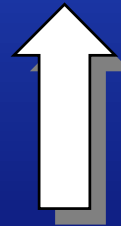
**NETWORK
MANAGEMENT**

**MANAGEMENT
SYSTEMS**

PARK & RIDE

**ACCESS
CONTROL**

**PUBLIC
TRANSPORT**



**ON STREET
PARKING**

**I.T.S.
TECHNOLOGIES**

NEW SERVICES

Management Model

MEASURES

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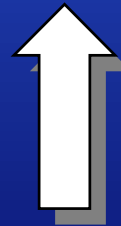
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NEW SERVICES

Access Control Policies

- **Tourist buses within ring road (GRA)**
- **Only catalytic vehicles in a vast central area (rail road ring)- *PLANNED***
- **Traffic limitation in historic centre (ZTL)**

Access Control to ZTL

POLICY

- 1989: Decision to create limited traffic zone (ZTL)
- 1994: Enforcement of traffic zone
- 1998: Pay Access Introduction
 - Payment for permit: 340 EURO
 - Residents free, Business hours, Uniform user profile for authorised

TECHNOLOGY

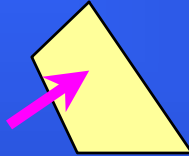
- 1996: Realisation of the automatic access control system prototype
 - 10 gates, Control centre (basic functions), Investments: *1 Meur*
- 1996-1998: System s.w. development,
 - Technological demonstration (400 equipped cars)
 - Investments: *1,5 Meur*
- 1999: Design & procurement of the full system
 - 22 gates (29 lanes), 35.000 on board unit and smart card, Control centre, Investments: *4.8 Meur*

Who access the ZTL

- Residents (14.000 vehicles) - *PERMIT*
 - Special business needs (16.000 v.) - *PERMIT*
 - Temporary access - *PERMIT*
 - Two weels vehicles (450.000 !)
 - Service fleets
 - Freight lorries (< 3,5 t)
-
- Time: 6,30 - 18,00 (Mon. - Frid.)
14,00 - 18,00 (Sat.)

The Access Control to ZTL

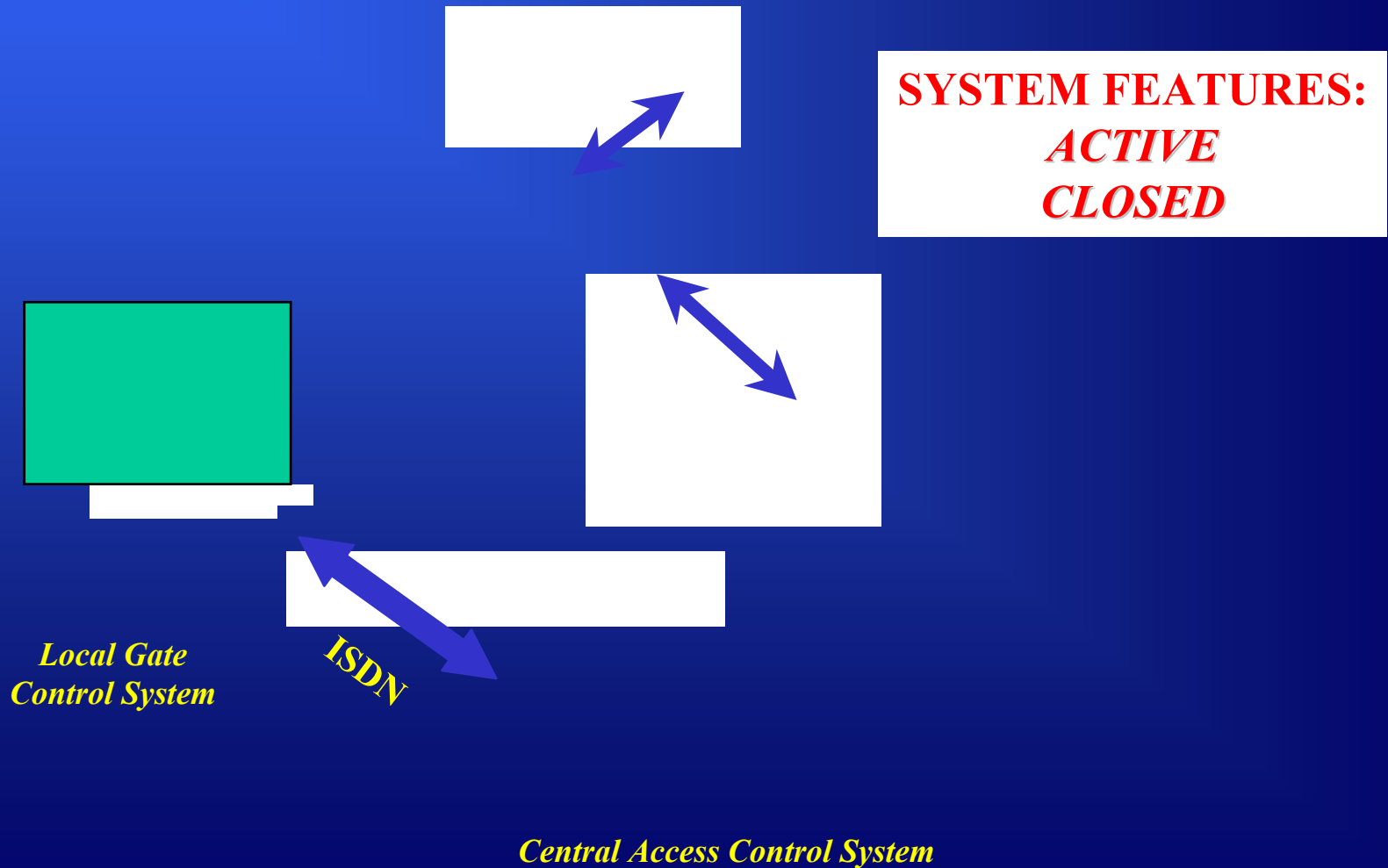
CAPITALS
PROJECT
TEST SITE



- Test experience in CAPITALS+ (STA, ATAC);
- A fully operative system on 24 hour working period;
- Technical approvals, solution to privacy problems, EMC test
- Municipality acts and integration of National laws, special approvals;
- First approved system in Italy.

)

System Architecture



On Board Unit

**OBU
On-Board Unit**

·OBU development, Telepass-compatible, enabling access to LTZ and parking payment via Smart card;

·Read/written/debited by the transponder Smart-card development, able to support future Road-Pricing services;

**Smart-card:
Prototype**

**Smart-card:
Final design**

·Scalable compatible smart-card, able to be used in conventional parking-meters;

Integration in the environment

Board - ground transponder



TV camera (enforcement)

Enforcement

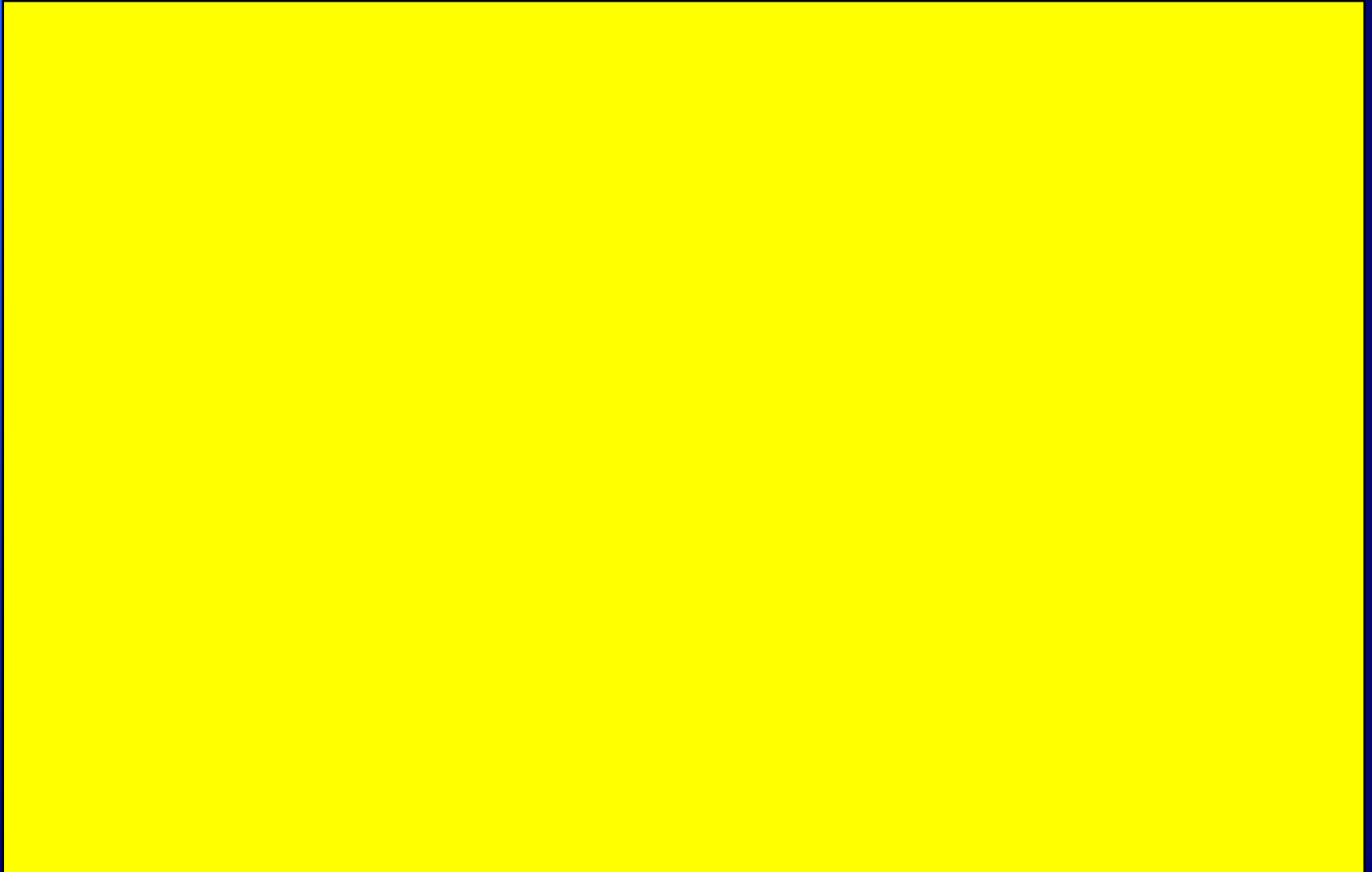
üOCR: Improvements on the automatic identification of vehicles plates.

üIdentification algorithm with two procedures and a success plate reading of about 85%;

üExperimental trial from August;

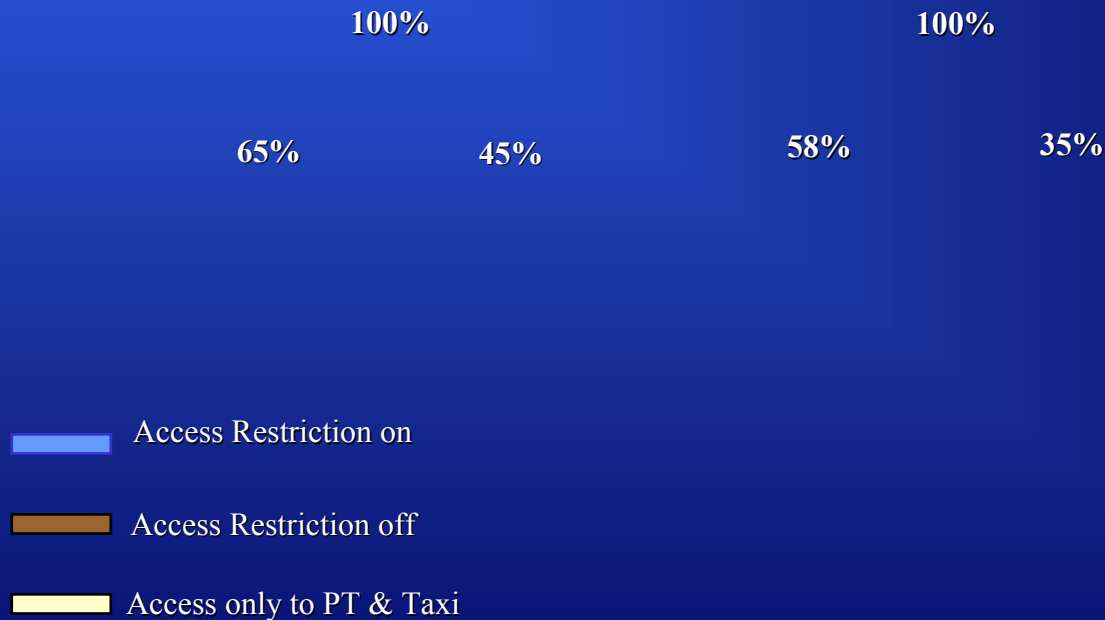
üExpected reduction of violations and traffic.

Flows at gates of ZTL



Preliminary results on ZTL:

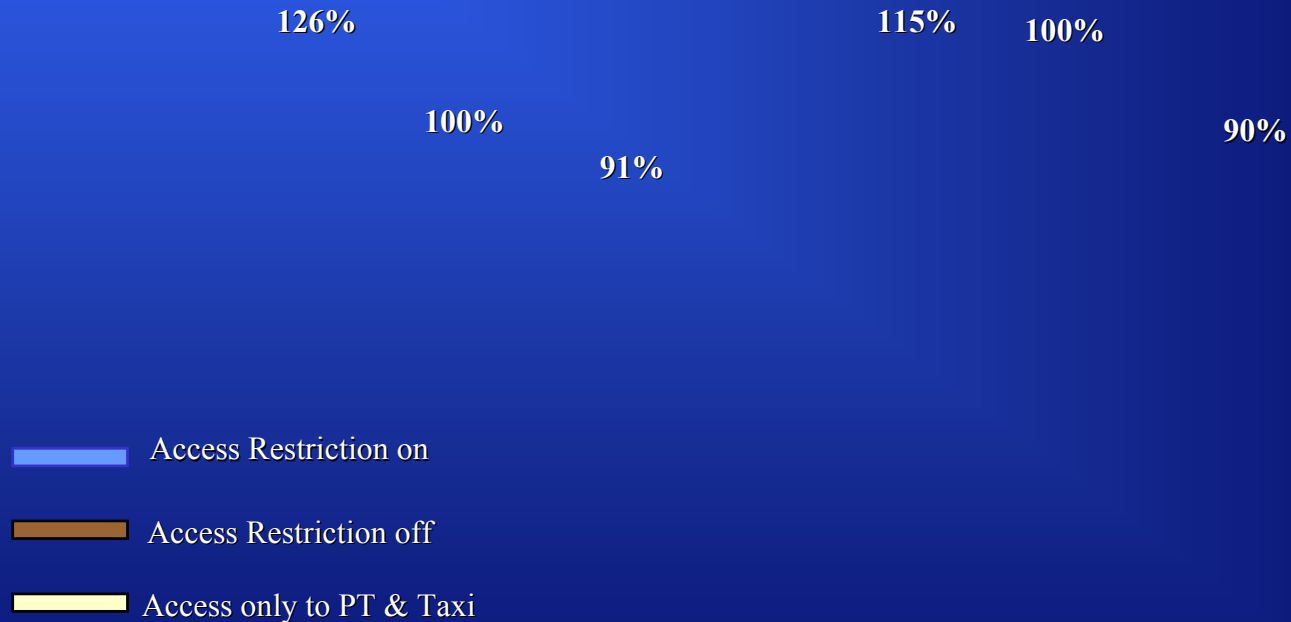
Traffic data vs Demand management measures



Measurements inside ZTL (Corso Vittorio)

Preliminary results on ZTL:

Traffic data vs Demand management measures



Measurements outside ZTL (via Muro Torto)

Rome Central Area Freight Delivery (1)

- **Freight entering in the City: about 90.000 tonn/day**
- **The historical centre represents 1.1% of the surface area of the city of Rome but absorbs 33% of the freight**
- **The remaining 98.9% of the area of Rome, consisting of 1270Km², absorbs a mere 66% of the freight.**

Rome Central Area Freight Delivery (2)

Rome Central Area Freight Delivery (3)



Private Area
Dedicated bay
Curbside
Illegal parking

Metropolitan Deliveries Trend

(range 0-30 Km)

Sustain. growth

Flat economy

Freight Delivery in ZTL

(Proposed Lines of Action)

- **Monitoring system of the freight distribution process**
- **Integrated road pricing (access, circulation, parking)**
- **Bay system reorganization:**
 - *inumber,*
 - *ilocation,*
 - *imultiusage by time of the day*

Freight Delivery in ZTL

(Proposed Line of Action)

- **Integrated system (logistic & distribution):**

- ñ *Siting of logistic bases e for ZTL deliveries*

- ñ *Set up of warehouses shared at street level for of paek deliveries (night?)*

- ñ *Incentives for promoting better loading factors and low emission vehicles*

- (5 Meuro already allocated by the Municipality)*

Innovation in freight delivery: the CIVITAS initiative

**5th RTD Framework Programme,
Key Action 2 ‘Sustainability and Intermodality’
CIVITAS call (October/December 2000)**

Rome and Barcelona teamed in the proposal:

MIRACLE

**(Mediterranean Initiative for Rationalised Accessibility
and a Clean, Liveable Environment)**

- Freight delivering addressed as a top priority**

Innovation in freight delivery: the MIRACLE proposal

- Anticipated resistance to access restrictions aims to be balanced through technical improvements enabling deliveries to be planned with a booking facility for nearest protected kerbside to doorstep;**
- Operators are segmented into those who have/will introduce low-emission vehicles (EURO4 vans) and those who do not;**
- Willingness-to-pay for services needs to be investigated to suggest scenarios that differentiate tariff segments for these groups of operators;**
- Introduction of new niche market for services related to kerbside reservation, payment, enforcement, combining elements of paid on-street parking and travel information services.**

Transition towards Road Pricing

***Pricing Objective: Modal shift from private transport to public transport and Reduction of congestion.
Within PRoGR=SS (EU 5th FP) in Rome:***

–First Phase: Access Control

–Second Phase: Payment for Access Control (only authorised individuals)

- Annual Permit (1998)

- Conversion to Automatic Access Control System (2001-2002)

- Per Trip Charge (2002-2003)

- Duration of Stay Charge (2004-2005)

Challenges Expected: Pricing Levels

- **Current fees:**

- authorised permits: 670.000 LIT (equivalent to 12 P.T. monthly passes)
- on-street parking: approx. 3.300.000 LIT annually

- **Road pricing has the objective of rationalising the system, based upon:**

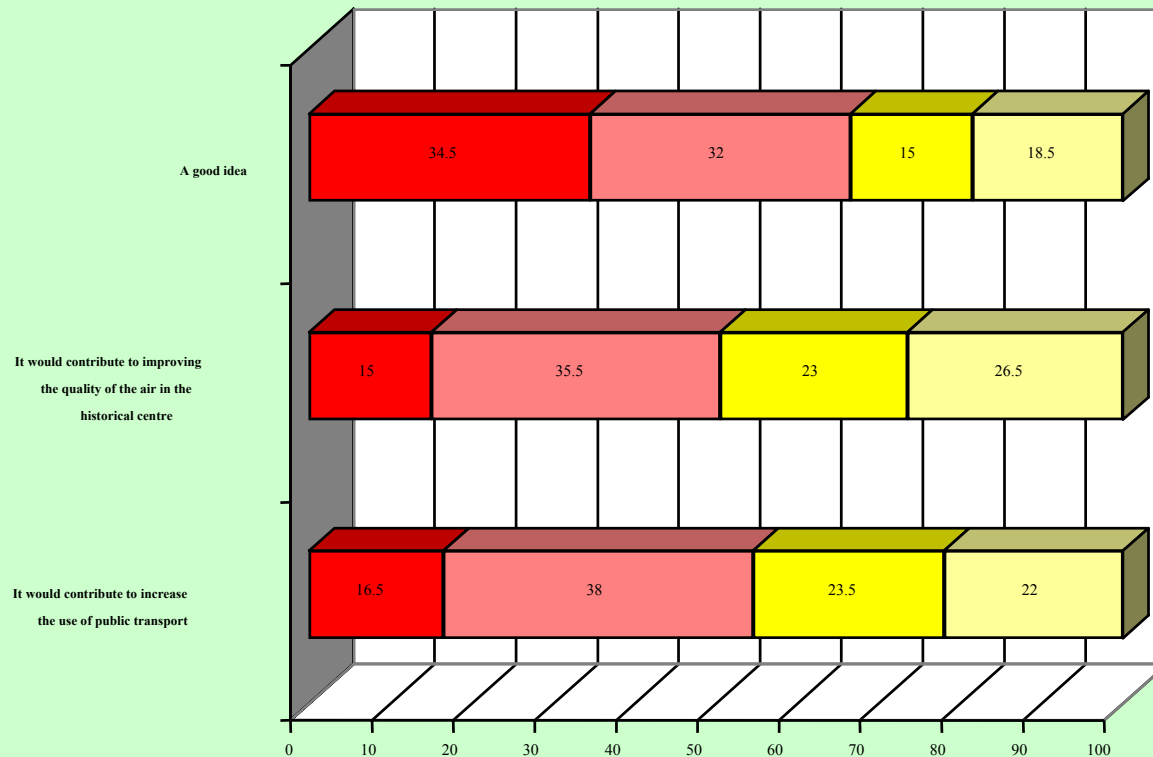
- Modelling exercises
- Political feasibility

Acceptability of Pricing

- **Circulation restrictions issues were addressed in 1989-1994**
- **Response registered in 1998, upon payment requirement:**
 - **Outcries: parliament members and journalists, as opposed to “common” man**
 - **Perception: appears to be positive, since the privileged pay for a benefit**
- **Future acceptability issues:**
 - **illegal entrances reduced (transition to automatic system)**
 - **motivation for pricing: based on political agenda**
- **Expected acceptability division**
 - **Residents: supportive**
 - **Businesses: not negative**
 - **Authorised users: divided**

Acceptability of Pricing

SHOP OWNERS



Base: total sample

Very Fairly Little None

Clean Zone

It can be reality!