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MAJOR CITIES OF EUROPE IT USERS GROUP

Mobile G2G services in the city of barcelona

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Previous experience

**Information system for mobile
devices of the “Guàrdia Urbana”
City Police**

Facts

➔ Barcelona citizens 1.600.000 (+ tourists, + immigrants, ...)

➔ Metropolitan area 3.500.000

➔ Catalonia region 7.000.000

➔ Urban Police: 2.500

➔ Regional Police: 2.400



➔ **Urban police main duties:**

- Traffic, accidents
- Vehicle information system – Car fines
- Civic behavior (fines)
- Street incidents (street equipment, municipal ordinances,...)
- Collaboration with regional police

Motivation, problem area

➔ Main problems:

- Prior System was not mechanized.
- Data was gathered manually using fine tickets.
- Each ticket was sent to the territorial unit to be classified.
- Information must be treated before entering into the system.
- No updated information.



Motivation, problem area

➔ Reason for changing:

- Improve efficiency and service level.
- Improve response capacity of Guàrdia Urbana.
- Provide better services to citizens.
- Permanent connection with corporate systems.

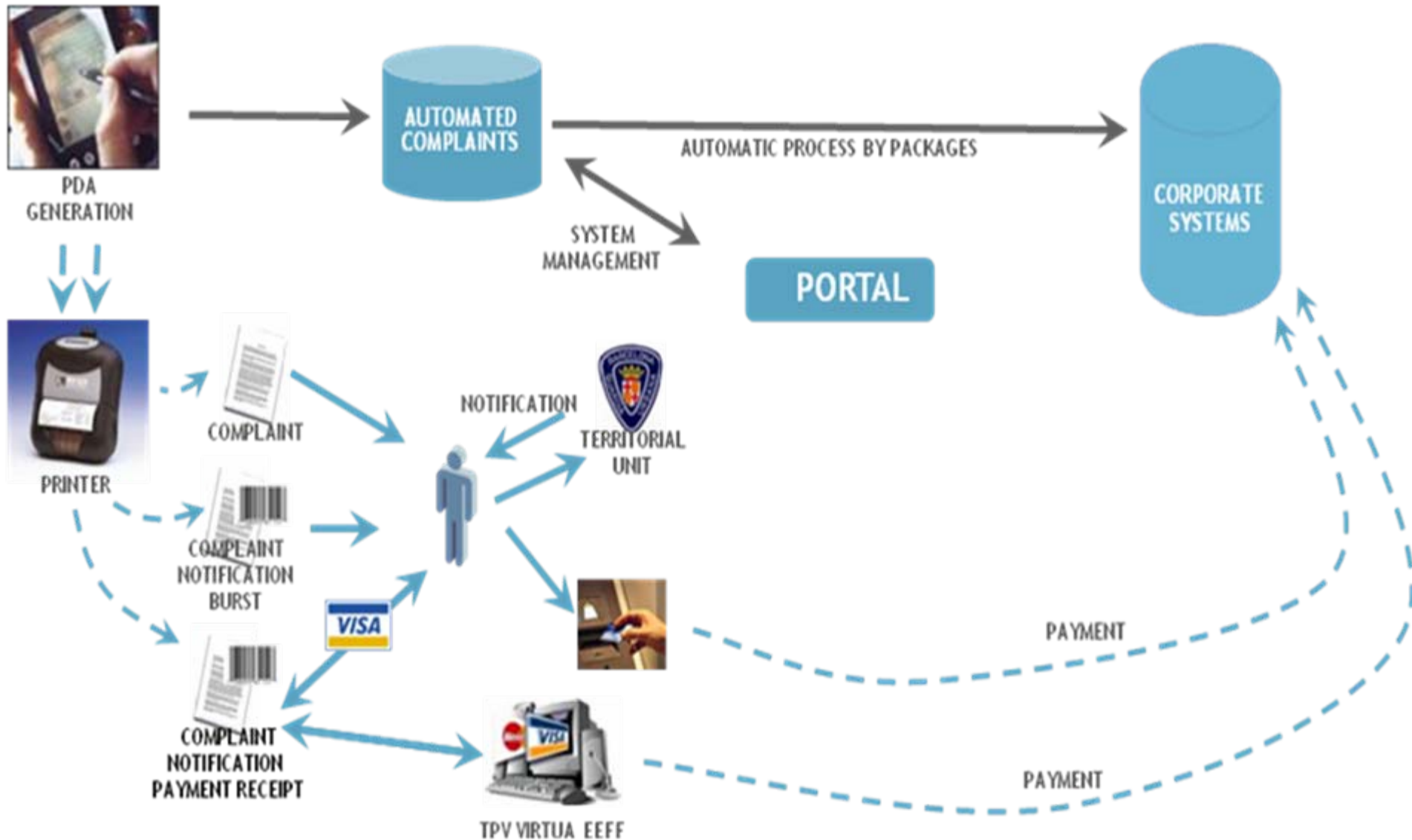


Objectives

➔ **The main objective was to obtain a system with the last technological mobility environment in order to:**

- Improve working methods of the police officers.
- Reduce management time.
- Access to updated information at the moment.
- In situ introduction of the data into the central database without the need to be treated before.
- Reporting of the incidences and immediate resolution.
- Communication with others systems of the organization.

The new process



Main features



➔ System components:

- A mobile office, which included a personal agenda, e-mail and alarms.
- Interactive urban guide with access to city equipments (City Guide).
- Access to corporative information systems.
- Printed ticket with notification and payment burst.
- On-Line reporting incidences with photos to Municipal Incidences System (IRIS).
- Option to pay the fine via credit card and get a printed pay receipt.



Main features

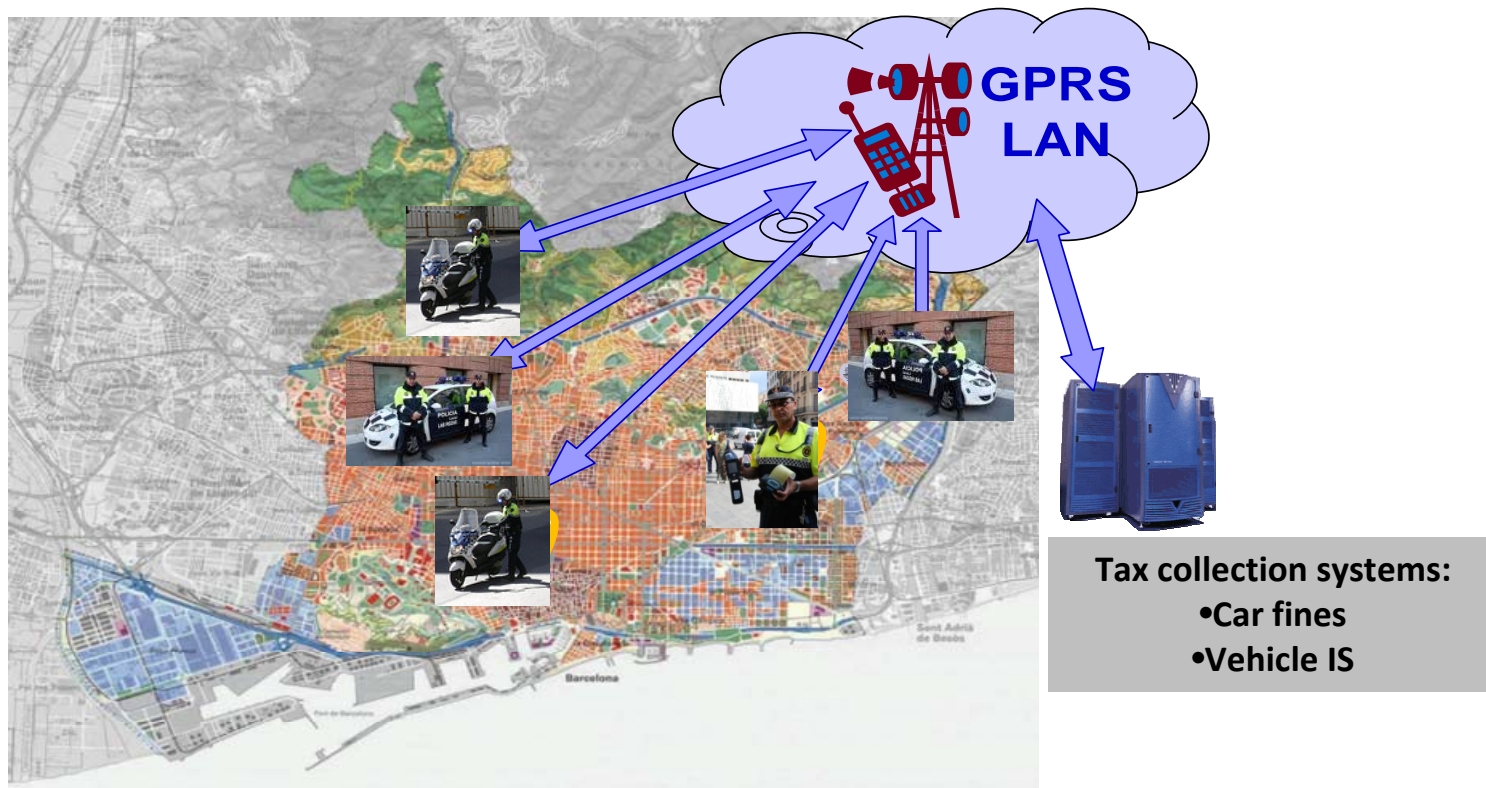
Results:

- More than 650 PDA devices are used 24 x 7.
- More than 76 % of normal complaints are made via PDA.
- About 1.800 agents use the system.
- Reduction of administrative burden, around 33% of complaints are notified at the same moment.
- ROI achieved in two year.

The image shows two overlapping forms for reporting a traffic violation. The top form is titled "Notificació de denúncia per presumpció infracció de trànsit" and the bottom one is "per presumpció infracció de l'Ordensança". Both forms contain fields for location, date, time, vehicle details, and driver information.

AJUNTAMENT DE BARCELONA		Pagament notificant identificació targeta		Refugi de pagament	
Guàrdia Urbana		[Barcode]		[Barcode]	
Notificació de denúncia per presumpció infracció de trànsit					
LLOC		DATA		HORA	
Codi		ART. INFRINGIT		GRUA	
ORDEN COMPETENT		INSTRUCTOR EDI EDIENT			
OBSERVACIONS					
IDENTIFICACIÓ					
NOM O RAO SOCIAL					
DOMICILI					
MUNICIPI					
PROVINCIA / PAIS					
MATRÍCULA		CURSE		COLOR	
MARCA		MODEL			
DATA CALIBRACIÓ		DATA REVISIÓ			
DATA 1ª PROVA		HORA 1ª PROVA		RESULTAT	
DATA 2ª PROVA		HORA 2ª PROVA		RESULTAT	
PROVA EN SANG		C ENTRE SANGRAT			
IMPORT		IMPORT REDUÏT		DATA LIMIT PAGAMENT REDUÏT	
ADREÇA DE DESTINACIÓ DE LA DENÚNCIA					
DENUNCIANT		NOM ADJENT		UNITAT	
Signatura Agent		Signatura Denunciador		Signatura Contingent	

Technology



- System is based on the use of mobile devices with Windows Mobile.
- The development on client used with .NET technology and Oracle Lite.
- On-Line operation with or without GSM/GPRS network coverage.
- Use of Bluetooth technology between mobile devices and printers.

New wifi municipal network

➔ Wifi municipal network only for municipal services.

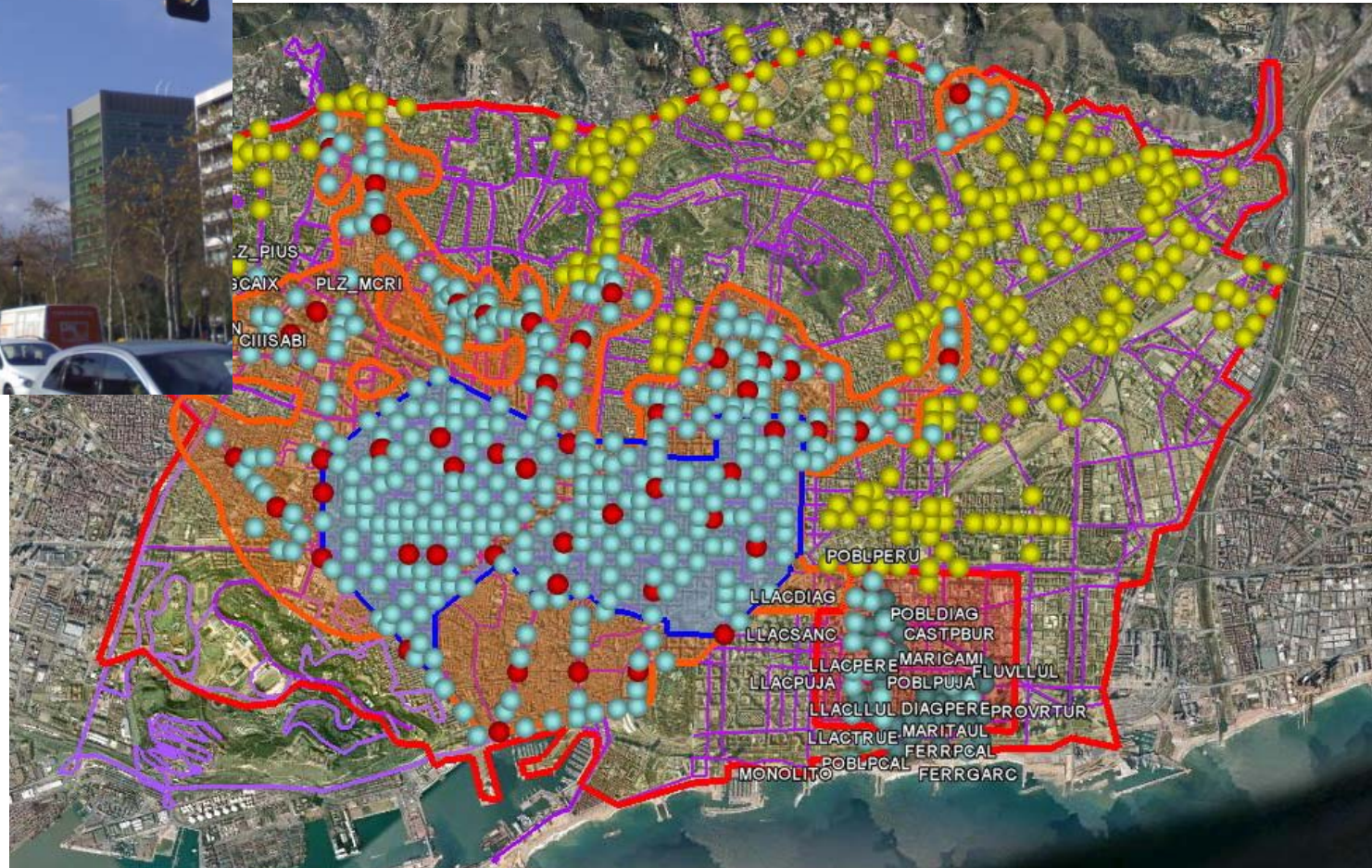
- Wifi Mesh technology.
- 500 antennas.
- 1 phase: 50% territorial coverage.
- 80 % of services already installed.
- Start operative 3Q 2010

➔ Future use:

- Mobile devices communications.
- Video surveillance.
- Traffic lights.
- Street information panels.
- Parking systems (blue + green zones).
- Garbage collection.
- Bicing.
- ...



Corporate wifi network



Major outcomes / results

➤ **Benefits for the Guàrdia Urbana Police.**

- Improve of capacity of response, efficiency and effectiveness of the activities carried out at street-level.
- Introduction of concepts such notification in-situ to the offender.

➤ **Benefits for the City Council:**

- Increase in the quality of data entry for future claims.
- Reduction of administrative burden and general administrative costs.

➤ **Benefits for the citizen:**

- More freedom to pay on voluntary period (discount).
- Efficiency use of the public expense.



Conclusion and outlook

➔ **The key factors of Success are the following:**

- It is "everybody's Project".
- Motivation, attitude and implication of police.
- Use the communication channels of the Guardia Urbana.
- Progressive deployment by territorial units.
- Total replacement of the manual fine ticket.
- Constant and centralized support.



Conclusion and outlook

➔ **Lessons learnt:**



- Introduction of eGovernment means changes in the internal processes.
- We were able to renew the working tools, keeping its productivity and efficiency.
- The focus on an intensive and non-personal use of mobile devices (3 shifts).
- The investment can be recovered in a short time (ROI).
- Management platform will be needed when a bigger amount of devices.

Outlook

➤ Outlook:

- Extending the system to the other municipal services of Urban Planning, Tax Office, Public Highways, Maintenance and Fire Brigade.
- Renovation of the PDA devices and software update.
- Access to other forces such as Traffic Department.
- PDA is able to connect Wi-Fi Networks as well as GPRS/GSM.
- Locate the officer via GPS to store the address of the complaint.

Mobile systems roadmap for the municipal services

Analisis of new opportunities for mobile systems to municipal services wich develop their activity on "the street".

History

New opportunities requirements

- Meetings with Sectorial Managers to explain the initiative and to analyse mobility application groups.
- Diagnosis of the pre-existent platforms current situation and identification of the technical and functional requirements of the new opportunities.

Future platform definition model

- Meetings with IMI's technical managers to obtain a current situation map and opinions on the final scenario.
- Definition of the future platform services and components according to the considered needs.
- Infrastructure, projects and services proposal linked to the new mobility platform.

New identified initiatives (1/2)

Municipal sector	Projects
General services-Districts	<ul style="list-style-type: none">▪ i1 Neighbourhood officer▪ i2 District inspectors
Urban planning and infrastructures	<ul style="list-style-type: none">▪ i3 Public works control▪ i4 Monuments maintenance▪ i5 Expropriation projects▪ i6 Maintenance of historic heritage
Education, Culture and social welfare	<ul style="list-style-type: none">▪ i7 Housing for immigrants▪ Prostitution control▪ Sport and public facilities inspection▪ City schools inspections
Social action and the citizen	<ul style="list-style-type: none">▪ i8 Homeless attention▪ i9 Social agents for conflicts solution▪ i10 Social emergencies▪ i11 Social workers

New identified initiatives (2/2)

Municipal sector	Projects
Environment and public services	<ul style="list-style-type: none">▪ i12 Trees management▪ i22 Garbage collection services control▪ i13 maintenance of public elements and furniture
Prevention, safety and mobility	<ul style="list-style-type: none">▪ i0 Urban Police PDA▪ i14 Emergencies tracking and support for fireman and urban police▪ i15 Incident management for BSM
Economic promotion	<ul style="list-style-type: none">▪ i16 incidents tracking in city markets▪ District inspectors for economic activities▪ i17 Mobility for technical people in economic promotion
Tax collection Agency Basic information dep.	<ul style="list-style-type: none">▪ i18 Tax collection inspectors▪ Economic activity inspection▪ Inspection for building fords and licenses for public space use
Urban landscape and quality of life	<ul style="list-style-type: none">▪ i19 monitoring and control of subsidies for “BCN posa’t Guapa”▪ i20 Inspection for public usage ordinance

Prioritization of mobility initiatives

Prioritization of initiatives based on :

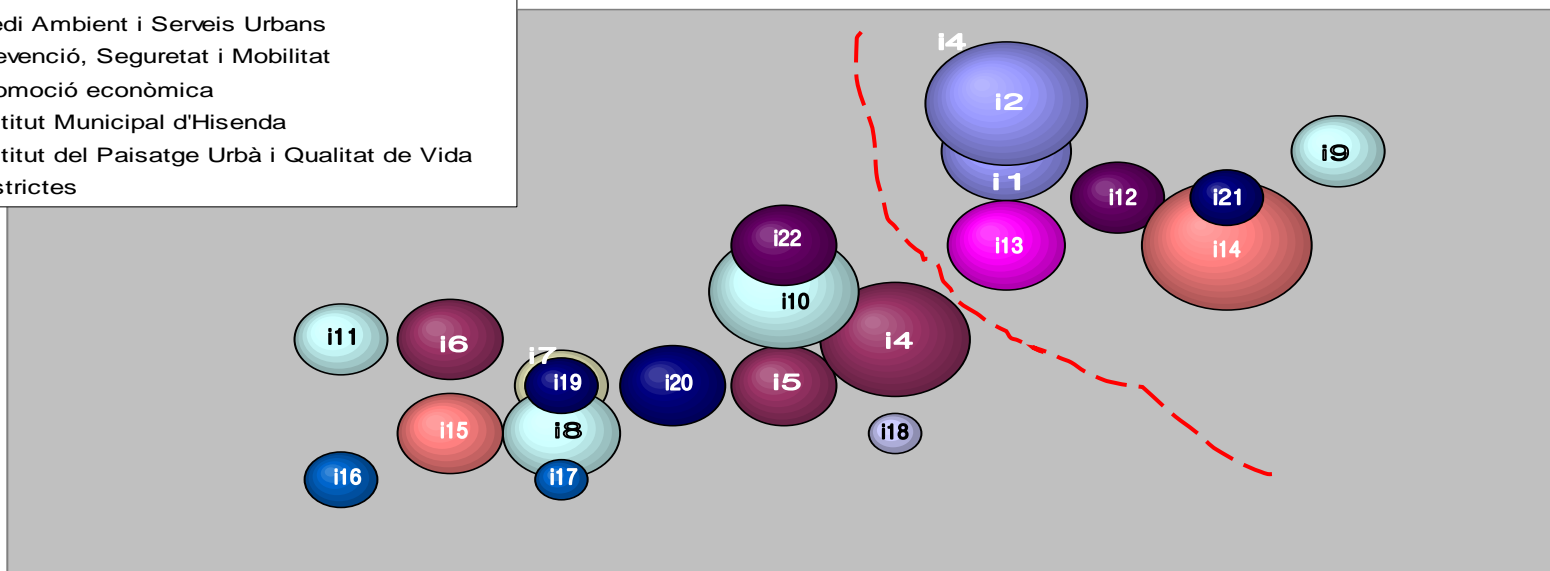
Added value, easiness and cost of implementation
(30 initiatives)

PROJECTS SELECTED

1. NEIGHBOUR OFFICER (i1)
2. DISTRICT INSPECTORS (i2)
5. STREET FURNITURE MANAGEMENT (i13)
6. URBAN LANDSCAPE (i21)
7. EMERGENCIES SUPPORT (i14)
3. HOMELESS (i9)
4. CITY TREES MANAGEMENT (i12)

- Serveis Generals
- Urbanisme i infraestructures
- Educació, Cultura i Benestar
- Acció Social i Ciutadana
- Medi Ambient i Serveis Urbans
- Prevenció, Seguretat i Mobilitat
- Promoció econòmica
- Institut Municipal d'Hisenda
- Institut del Paisatge Urbà i Qualitat de Vida
- Districtes

+
Added value
-



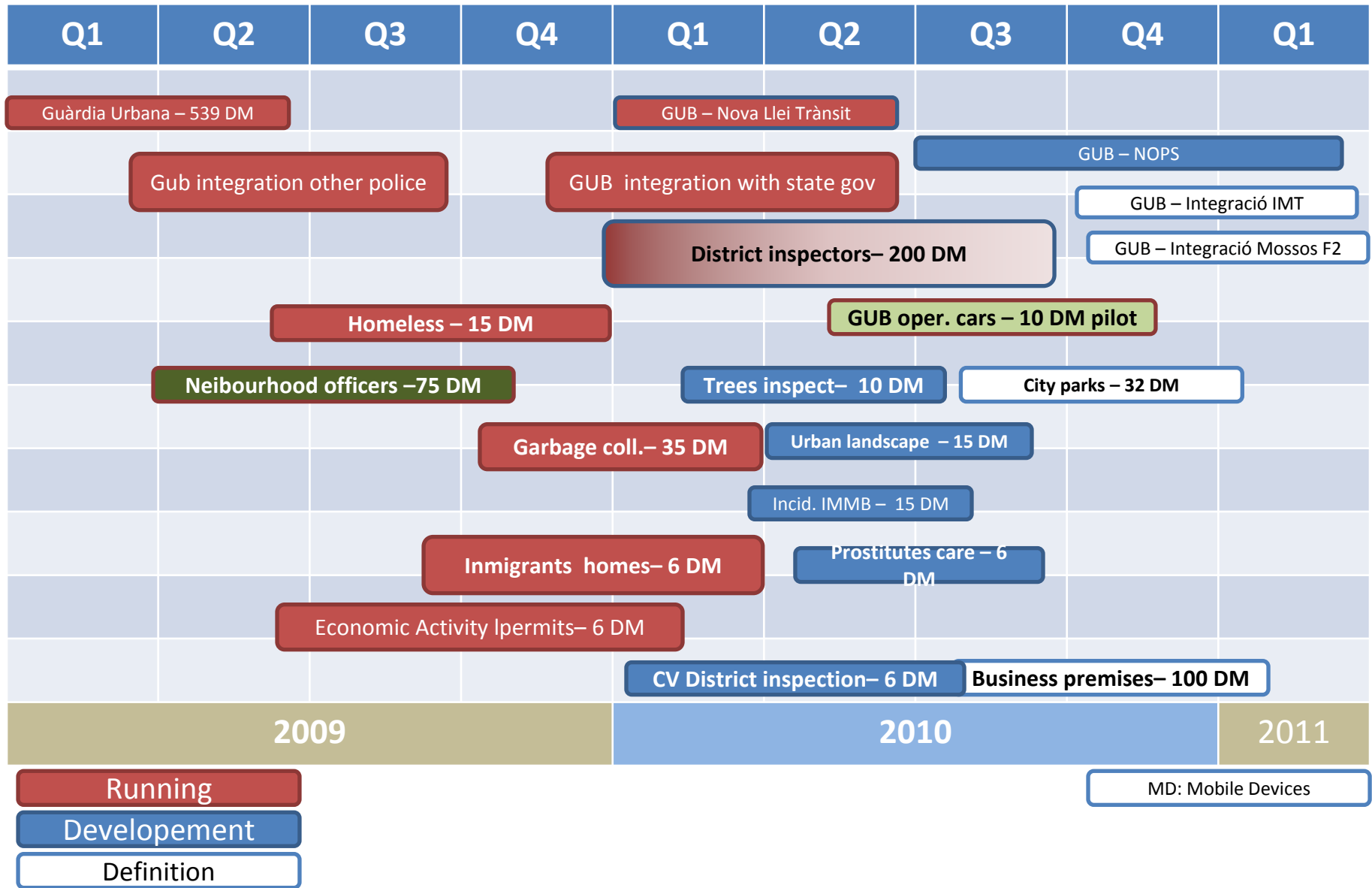
- Easiness of implementation +

Action plan 2009 - 2011

Selected mobile initiatives (1/2)

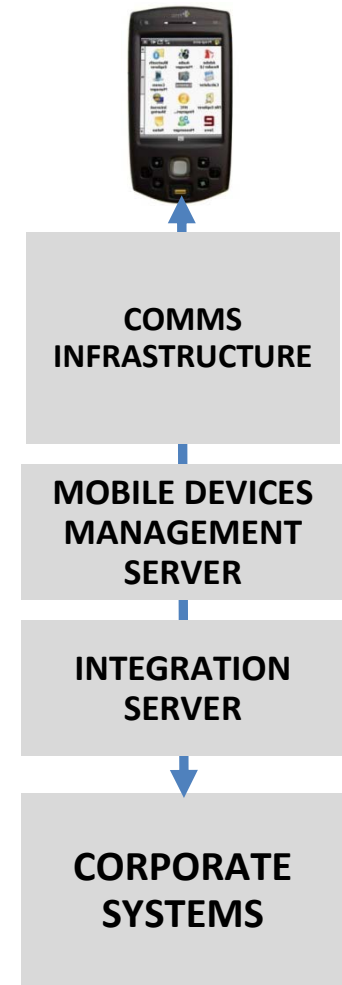
Selected initiatives	Mobile Devices	Comments
Urban police	639 PDA	<ul style="list-style-type: none"> • Renovation and increase. New applications. • Estate police database Integration. • Evolution of notification processes according law.
City trees management	45 PDA	<ul style="list-style-type: none"> • Increase functionality
District inspectors	200 PDA	<ul style="list-style-type: none"> • All information needed for inspectors on site • Paper documents reduced and eliminated. (City guide, prior licenses and inspections...)
Homeless care	15 PDA	<ul style="list-style-type: none"> • More detailed following of social services activities • Access to central information
Neighbourhood officers	75 PC-mobile	<ul style="list-style-type: none"> • Access to information in central databases of all municipal departments • Immediate response to citizens demands on site
Urban landscape subsidies	15 PDA	<ul style="list-style-type: none"> • All information needed for inspectors on site • Paper documents reduced and eliminated
Urban Police and firemen operations management	10 PC-mobile	<ul style="list-style-type: none"> • Coordination between police and firemen on site and central operations offices • Task automation: Dispatching, resources assignment, reporting
Economic activity inspection	70 PDA	<ul style="list-style-type: none"> • All information needed for inspectors on site. • Synchronization of municipal databases.
Garbage collection services control	37 PDA	<ul style="list-style-type: none"> • All information needed for inspectors on site. • Control of garbage collection routes planned.

Selected mobile initiatives (2/2)



Technical center for mobility

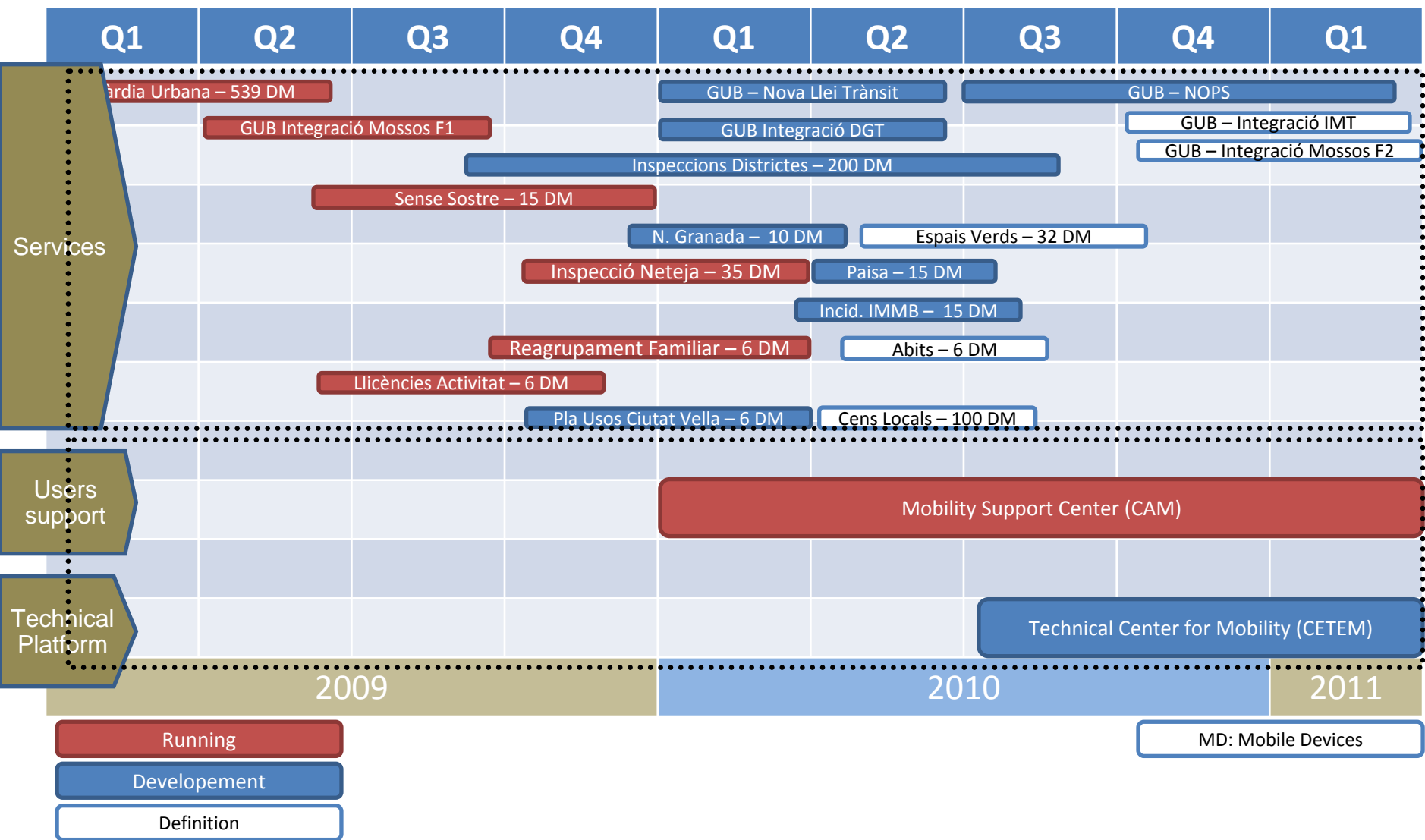
SERVICES	ACTIVITIES
TECHNOLOGICAL ARCHITECTURE	<ul style="list-style-type: none"> ▪ Technological architecture definition and evolution ▪ Integration with corporate systems
DEVELOPEMENT: COMMON MODULES AND SERVICES	<ul style="list-style-type: none"> ▪ Mobile Framework ▪ Common modules for all applications: ▪ Geo-position, synchronization, access to corporate DB
SISTEMS EXPLOTATION	<ul style="list-style-type: none"> ▪ Technical platform for all mobile applications ▪ Application deployments in mobile devices ▪ Wireless deployment and administration ▪ SLA control
LABORATORY	<ul style="list-style-type: none"> ▪ New versions of platforms and frameworks coherent with rapid devices evolution and changes in technology



Mobility Support Center (CAM)

SERVICES	ACTIVITIES
FIRST LEVEL Users support integrated with corporate help-desk	<ul style="list-style-type: none">▪ First level Incident management▪ User profiles administration▪ SLA control
SECOND LEVEL THIRD LEVEL Specialized	<ul style="list-style-type: none">▪ Special unit for mobile systems▪ Coordination with providers▪ Problem management
Advanced mobile devices administration (MDM)	<ul style="list-style-type: none">▪ Advanced management of devices and release management▪ Security management▪ SLA with users definition
Mobile devices Logistics (LOG):	<ul style="list-style-type: none">▪ Devices distribution and collection▪ Inventory control. Quality control.▪ Manual application deployment (SD)

Action plan 2009 - 2011



Thank you for your attention

