

URBAN REGENERATION IN THE INTELLIGENT CITY

Richard KINGSTON
Lecturer
Planning & Landscape
School of Environment and Development
University of Manchester
Oxford Road
Manchester M13 9PL
England
Tel: +44 161 275 6883
Fax: +44 161 275 6893
E-mail: richard.kingston@manchester.ac.uk

Dominica BABICKI
Research Associate
Centre for Urban and Regional Ecology
University of Manchester
Oxford Road
Manchester M13 9PL
England
Tel: +44 161 275 6914
Fax: +44 161 275 6893
E-mail: dominica.babicki@manchester.ac.uk

Joe RAVETZ
Research Fellow
Centre for Urban and Regional Ecology
University of Manchester
Oxford Road
Manchester M13 9PL
England
Tel: +44 161 275 6879
Fax: +44 161 275 6893
E-mail: joe.ravetz@manchester.ac.uk

Abstract: This paper explores on going research into the *Intelligent City* as part of a wider EU 6th Framework Information Society Technology funded research and development project. Intelligent Cities (IntelCities) aims to pool advanced knowledge and experience of electronic government, planning systems and citizen participation from across Europe. IntelCities is a very large and complex research project but this paper will focus specifically on citizen engagement in regeneration processes and how this will manifest itself in the future Intelligent City. As part of the research a number of on-line interactive GIS systems are being developed, deployed and tested on citizens in the East of Manchester, an inner city area facing multiple deprivation and under investment over recent decades. The systems under development (forms of PPGIS) allow citizens and stakeholders in local communities to access local services through new technologies.

Keywords: public participation, urban regeneration, GIS, ICT, e-Planning

URBAN REGENERATION IN THE INTELLIGENT CITY

1 INTRODUCTION

The past 10 years has seen exponential growth in the use of the Internet for the delivery of a whole new set of services across the globe coupled with a growing reliance on new Information and Communication Technology (ICT) to support the functions and delivery of municipal services for urban planning and management. This paper will report on current research into Intelligent Cities (IntelCities) with particular reference to how urban regeneration is being undertaken when new ICTs are used to support the process of regeneration in East Manchester. The paper will examine the concept of the intelligent city through the development of an *e-City Platform* which is being tested across Europe as part of the research project. The paper will then go on to examine some of the specific tools which have been developed and tested along side current regeneration processes. The paper will then look at how ICTs and e-government practice can support the provision of better urban planning and management services in our cities.

1.1 IntelCities and New East Manchester

IntelCities is an EU Information Society Technologies 6th Framework Integrated Project. Its main aim is to help achieve the EU policy goal of the Knowledge Society by 2010 through new forms of electronic governance of cities and greater social inclusion through enhanced access to services by citizens and businesses. The research project aims to create a new and innovative set of interoperable, e-government services that will provide information to all citizens and businesses about all aspects of city life via interactive city-wide Internet based applications. This is being achieved through a number of Work Packages (see <http://www.intelcitiesproject.com/> for further details), but this paper will focus more specifically on Work Package 5 (WP5) – *e-Regeneration*. This WP is being led by Manchester City Council and the Universities of Manchester and Salford.

The City of Manchester has a long history of championing urban regeneration projects and is well placed for using parts of the City for the development and testing of new techniques in urban regeneration. With this in mind a large area of the city known as New East Manchester (NEM) is being used to implement the new e-government tools developed as part of IntelCities. The main characteristics of East Manchester are:

- 1,100 hectares east of Manchester city centre
- Loss of the traditional manufacturing base – 60% employment loss 1975-85
- 13% population loss in 1990s
- Collapse in housing market (it now forms part of the Manchester – Salford housing market renewal area (ODPM, 2004))
- 20% vacant properties and negative equity
- Low skills base, high crime, poor health, poor community and retail facilities

- Fragile economic base
- 52% households receive benefit
- 12% unemployment
- Poor infrastructure and environment

Over recent years, mainly since the Commonwealth Games were held in Manchester in 2002, the area has seen considerable inward investment to help regenerate the community after decades of decline. From the perspective of IntelCities there are two significant factors in the Manchester experience of using IT in managing urban change:

- the City has a long and strong tradition of support for the non -statutory sector and encourages community involvement. The means of undertaking community engagement and the success of these initiatives has varied but it is politically encouraged.
- There is an equally strong tradition of supporting the use of ICT in business and community development. This goes back over 14 years with the launch of the Manchester Host – the UK's first ever public access integrated email; the creation of a bulletin board and online database service in 1991, through to the development of the Electronic Village Halls in 1992 (Harvey et al, 2002), the Manchester Community Information Network in 1994 and the Manchester Digital Development Agency (MDDA) in 2003.

The underpinning philosophy of these initiatives has been that technology is a means to achieving sustainable regeneration, the promotion of entrepreneurship and enterprise and attracting the kind of investment which in turn continues to sustain these schemes. Linked to this is the 'joined up' approach which the City has pioneered in order to ensure that the wider community has access to, and is actively encouraged to, use these new technologies. It is through projects like the network of Internet access centres in libraries across the city and having the largest network of UK Online for Learning and Learn Direct Centres in the UK that has allowed a greater than average access to ICT by citizens in Manchester.

East Manchester has been successful in securing considerable funding from the central UK government and through European Regional Development Fund. As East Manchester was the site for the 2002 Commonwealth Games, there was a major investment in physical infrastructure and funding was received for East Manchester through the Wired-Up-Communities project which resulted in a local wireless network covering an area of 9,000 households. Approximately 3,500 PCs were purchased by residents at a subsidised rate and there are currently 1,250 users on the network equating to a much higher rate of Internet usage than the UK on average. The community website (<http://www.eastserve.com/>) has been developed by a local partnership of statutory and voluntary organisations led by the City Council and is seen as an important part of the regeneration process. It has been used as one of the vehicles for public engagement and testing the usability of the technology developed as part of IntelCities. The East Manchester Regeneration Company has

produced a Regeneration Framework (<http://www.neweastmanchester.com/>) which has provided a good baseline for building a set of desired functionality of a system to support regeneration.

2 ICT AND URBAN REGENERATION

2.1 Urban Regeneration in New East Manchester

Many recognise the important role ICT plays and should play in the planning process (Craig et al, 2002, Hudson-Smith et al, 2002 and Kingston et al, 2000, 2003). This is especially true with regeneration, a particularly complex process and in many ways a process that needs ICT as it is a particularly rapid and multi-faceted planning procedure. While ICT is useful in all aspects of regeneration, the focus in this section will be on defining ICT driven design and decision-making tools that are used, and could be used, in NEM. The reason for this is that tools in this area provide tangible means to help planners, policy makers and citizens of varying backgrounds build consensus about the design and development of a place. If used properly these tools are meant to help people make better planning decisions by enabling improved communication, design and analysis (Al-Kodmany, 2002). An essential ingredient in improving the decision-making process is improving the extent to which citizens are included in the decision-making process between and within governance structures (Healey, 1997, UNECE, 1998). Therefore the improvement of the regeneration process will be assessed by the manner in which it engages with citizens.

To understand what for what purpose ICT tools are currently being used, what purpose they fulfil and where potential exists for their further exploitation in NEM, a matrix has been developed that attempts to show how the regeneration process in NEM currently uses design and decision-making tools, what type of public involvement the tools support and what areas of the regeneration process could be assisted with such tools. A major element of the research in NEM focuses on ICT driven design and decision-making tools and how they assist with the regeneration process and therefore the type of public involvement the tools promote needs to be defined. In an OECD paper entitled 'Citizens as Partners: Information, Consultation and Public Participation in Policy-making' (OECD, 2001), the types of public involvement in government decision-making are defined as follows:

- Information and transaction – government informs citizens (one way process)
- Consultation – government consults with citizens (citizen's responses generally predetermined by government via multiple-choice, closed –question options)
- Deliberative Involvement – government engages citizens in consultation process (citizens encouraged to deliberate over issues prior to final response)
- Government – led active participation – government instigates consultation and retains decision-making powers
- Citizen-led active participation – citizens are actively engaged in decision-making processes, alongside government; citizen decisions become binding; citizens share ownership and responsibility over outcomes.

One of the aims of IntelCities is to provide the necessary tools, skills, knowledge and understanding to allow citizens to fully engage in the regeneration process. While City officials in NEM are not supportive of citizen-led active participation for all decision-making, they are committed to a comprehensive public engagement process which engages the public at different levels depending of the type of decisions being taken. A major task of WP5 has been to identify the types of design and decision making tools currently used by NEM and asses what new methods could be developed and tested to increase and make more effective public involvement in the decision-making process. The table below (Table 1) attempts to categorise these tools.

Table 1: Categories of NEM Design and Decision Making Tools in use/too be developed

Tool Type	Task
<i>Enquiry / Reporting & Tracking Services</i>	Enquiries on specific data requirements, from citizens: to policy / managers
	Reporting on monitoring / specific needs, from citizens / users: to managers / providers
	Information on city issues/plans from planners/managers to citizens
<i>Community Process Tools</i>	Tools that focus on how the planning process can become integrated into community building empowerment efforts.
	These tools assist citizens and planners/managers to work better together and information flows both from citizens/ users to planners/managers and from planners/managers to citizens.
<i>Asset Mapping</i>	These are tools for identifying and documenting a community's assets including cultural, historical, physical, economic and social
	Information on community assets from citizens to planners/managers
	Survey/historical information from planners/managers to citizens
<i>Visualising the Future</i>	Using a variety of 2D and 3D medium for both citizens and planners/managers to see how their community could evolve over time
	Future visions from citizens/planners/managers to citizens/planners/managers
<i>Impact Analysis</i>	Using a range of GIS applications, an impact analysis gives a community specific economic and physical impacts of future development plans.
	Analysis of impact from citizens/planners/managers to citizens/planners/managers
<i>Scenario Analysis</i>	Analysing a scenario involves a more comprehensive analysis of the many implications of a planning scenario
	Future visions/needs/wants/tradeoffs from citizens/planners/managers to citizens/planners/managers

Performance Based Planning This is the process of identifying and developing performance criteria to measure how effective a plan is over time and creates accountability through performance –based standards

Evaluation of plans from planners/managers to citizens/planners/managers

Predictive Modelling This is a process of looking at planning in the fourth dimension (time). Looking at issues such as what the long-term implications of population growth and sustainability issues of a master plan are over the next 30 years.

Future vision in a time scale from citizens / planners / managers to citizens / planners / managers

(Adapted from Boyd and Chan, 2002, p.13)

Whilst NEM make extensive use of a range of design and decision making tools to support their planning and regeneration functions it is apparent that NEM does not exploit ICT tools for these purposes to their full potential. This was particularly pertinent in the use of ICT tools for public consultation and participation. Table 2 below attempts to detail the steps in the planning process and map which ICT tools are currently used, for what purpose and how they promote public participation. The main theme emerging here is that while NEM use and are in the process of developing a range of ICT techniques and tools, they lacked a coherent process for using some of these tools for engaging citizens and stakeholders, exploring design options, assessing impacts and prioritising options for the re-design and development of the physical infrastructure and built form. Citizens have generally only become involved mid-way through the planning process rather than at the out-set when goals are being defined and options generated and debated.

Table 2: ICT Planning Tools Used by NEM

Generic Planning Process	NEM Planning Process	ICT Planning Tools Currently Used/<i>Being Developed in NEM</i>	Type of ICT Planning Tool	Type of Public Consultation ICT Planning Tool Promotes
Issue Identification / Baseline Studies	Identify area to be regenerated & research and consultation proposals	Eastserve Network	Enquiry/Reporting & Tracking Services and Community Process Tool	Consultation
		<i>Tracking Neighbourhood Change GIS System</i>	<i>Enquiry/Reporting & Tracking Services</i>	<i>Consultation</i>

		<i>Environment on Call & Crime on Call</i>	<i>Enquiry/Reporting & Tracking Services</i>	<i>Consultation</i>
Engage Stakeholders	Research & Consultation Proposals	<i>e-Consultation GIS Tool</i>	<i>Enquiry/Reporting & Tracking Services</i> <i>Community Process Tool</i> <i>Asset Mapping</i>	<i>Could be used in promoting all the different types of public consultation</i>
Develop Process	Research & Consultation Proposals	<i>lack of use of ICT tools</i>		
Inventory Conditions	Research & Consultation Proposals	<i>Tracking Neighbourhood Change</i>	<i>Predictive Modelling</i>	<i>Information & Transaction</i>
Analyse Trends	Research & Consultation Proposals	<i>Tracking Neighbourhood Change</i>	<i>Predictive Modelling</i>	<i>Information & Transaction</i>
Explore Design Options	Research & Consultation Proposals & agreed regeneration plan	<i>Salford 3D Visualisation</i>	<i>Visualising the Future</i>	<i>Consultation / Deliberative Involvement</i>
Assess Impacts	Consultation & Evaluation for Drawing up Implementation Plan	lack of use of ICT tools		
Prioritise Options	Consultation & Evaluation for Drawing up Implementation Plan			
Implement Plans	Agreed Regeneration & Implementation Plan With Delivery Plan (Timescales)			
Analysis and Evaluation	Monitoring, Control & Report	System K	Performance Based Planning	Information & Transaction

Table 2 above can be used to inform us what kind of ICT design and decision-making tools are being used and what their purpose is in the NEM regeneration process (Pemberton-Billing, 2005 and Babicki, 2005). Most importantly, however, the Table provides some insight to where additional tools could assist with the regeneration process. As seen in the Table, according to the research done to date, there are very few ICT tools that are currently being used to assist with the design and decision-making process in NEM. In particular the grey-filled cells identify those areas where policy makers could make more use of such tools. While a small amount of new tools are being developed that will be used in different stages of the regeneration process (shown in Table in grey italics), none of them specifically promote either government-led active participation or citizen-led active participation with the context of the OECD (2001) criteria outlined above. This is an area that needs to be developed further as there is a clear need for more effective and more inclusive public involvement in the regeneration process. This is an important point for the IntelCities project as a whole which has as an overall aim to improve urban governance and sustainability through the development of the 'eCity Platform' (e-CP).

2.2 The e-City Platform

At the heart of the IntelCities research project is the creation of a set of new and innovative interoperable e-Government services that will provide information to citizens and businesses about all aspects of city life via interactive city-wide internet-based applications through a multi-purpose e-CP. The platform will demonstrate how technology can contribute to the planning and administration of cities, leading to long term sustainability and successful urban environments. The system will provide a city wide information system that will make all aspects of what is 'going – on' in the city available to all, and aid decision makers in planning future development and services. The key benefits of the use of the e-CP will be the delivery of streamlined city government, city management and city regeneration processes, which will lead to more efficient use of city facilities and resources and improve the economic competitiveness of the cities by:

- Providing 24 hour access to city information and services, supporting the day-to-day needs and activities of citizens, business and visitors alike;
- Integrating information from city authorities, utility and transport system providers, leading therefore to a more efficient city management and administration; and
- Enabling cities to have better urban planning through more reliable visualisation and prediction of how planned changes in the city will affect peoples' lives.

This will be supported through the improved interaction between business, developers, local administrations and citizens by promoting social inclusion, extending citizenship and 'ownership' of plans and proposals. The concept of a 'one-

stop' intelligent metropolitan information infrastructure as the platform to secure knowledge and as the basis for delivery of a wide range of integrated services, like:

- greater intelligence in the internet services and system through integrating a wider variety of data systems in cities, government, utility and transport services;
- real-time features such as traffic and transport information through real time monitoring and global positioning; and
- better land use and planning information through GIS and similar.

This is illustrated in the conceptual diagram in Figure 1 below showing how citizens would interact with the different services. From the perspective of the citizen the e-CP will be completely invisible and in a sense non-existent, indeed many on-line services will 'look and feel' the same – it is the back office environment which has radically changed.

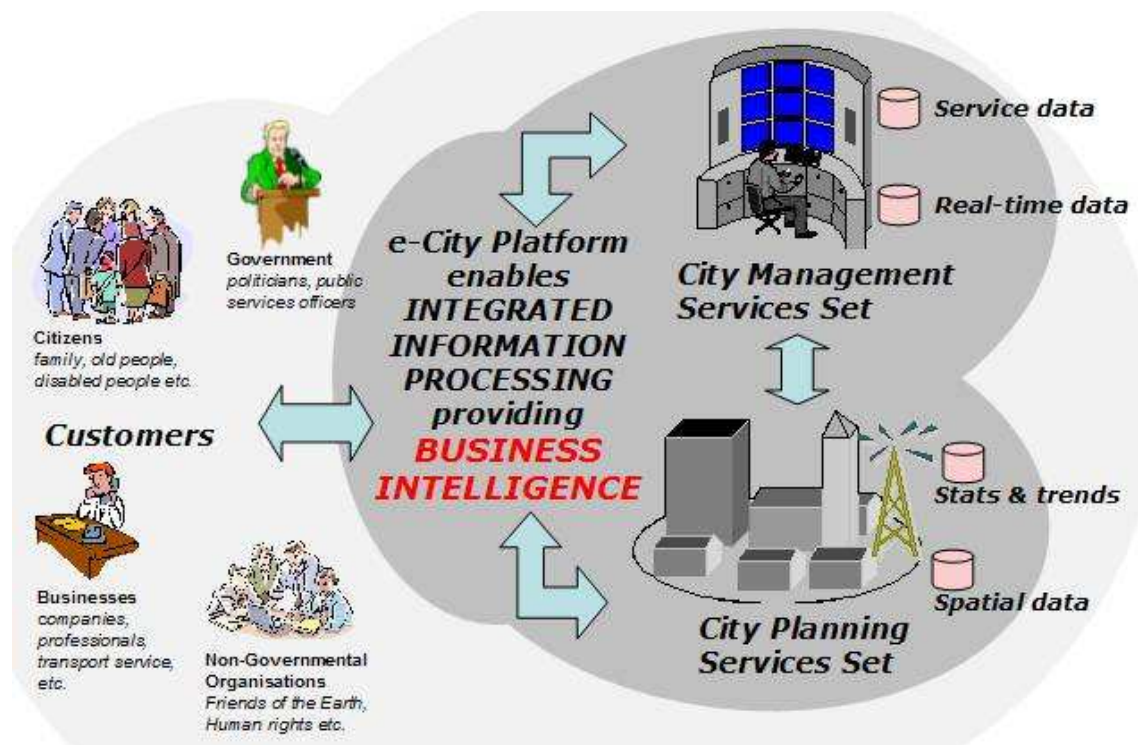


Figure 1 The e-City Platform Concept

The focus of WP 5 has been on the development of a set of systems for specific use in urban regeneration and their integration with other city systems. It encompasses the physical, social and economic elements of regeneration and their interdependencies. This work is being developed in the context of the key priorities set by urban administrations and partners to ensure successful and sustainable regeneration, based on:

- economic development resulting in new industries and employment opportunities to replace old;

- reversing the decline of populations in inner city areas and encouraging new forms of city living with the services to support this;
- tackling social exclusion and improving the quality of life;
- improving the business environment and attracting new investment and jobs; and
- promoting democratic renewal and re-engaging citizens with civic life.

The work package will produce a city vision for the city in the knowledge economy and a set of targets to enhance regeneration. WP5 aims to produce a system to support improved decision making in the strategic planning process by engaging citizens in planning regeneration. The result is an assessment on how technology and, in particular, how data that is captured, stored, interrogated and used by different stakeholders, is supported by the shared e-CP.

The e-CP is based on the CORBA standard (Common Object Request Broker Architecture), an open, vendor-independent architecture and infrastructure that computer applications use to work together over networks. A CORBA-based program from any vendor, on almost any computer, operating system, programming language, and network, can interoperate with a CORBA-based program from the same or another vendor, on almost any other computer, operating system, programming language, and network. Anyone developing a new or upgrading a legacy system can work and interact with the e-CP by providing a wrapper written in CORBA to link between their systems and the e-CP.

3 DEVELOPMENT AND TESTING OF THE e-CP

Within the e-CP framework outlined in Figure 2, the e-Regeneration Work Package (WP5) links end users through a web interface client in the first instance. It is anticipated that in the future these services will also be available through hand-held devices and cable TV channels. The services provided in the three pilot studies outlined in the following section are being tested with citizens of NEM during 2005. Figure 3 below outlines the structure of the three systems and how they fit in to the e-CP. The systems developed across the whole of IntelCities are following the open source model of software development following a range of data standards such as e-GIF (electronic government interoperability framework), OGC (Open GIS Consortium) and XML. This allows for improved flexibility and adoption for working with legacy systems on the one hand and emerging technologies on the other.

At the time of writing live testing of the systems was being developed but had not taken place due to changes in the timing of public participation on specific regeneration projects. The systems have been tested by Manchester Digital Development Agency for e-GIF compliance and work is underway to make the three systems compliant with the e-CP platform. The aim of the three pilot studies is to investigate how the delivery and management of current and future services will be operated by the local authority and used by citizens and businesses. The first two systems developed, Environment on Call and Crime of Call, mirror and enhance two

of the City's current services while the third, e-Participation develops new methods to allow citizens and business to participate in urban regeneration and planning processes.

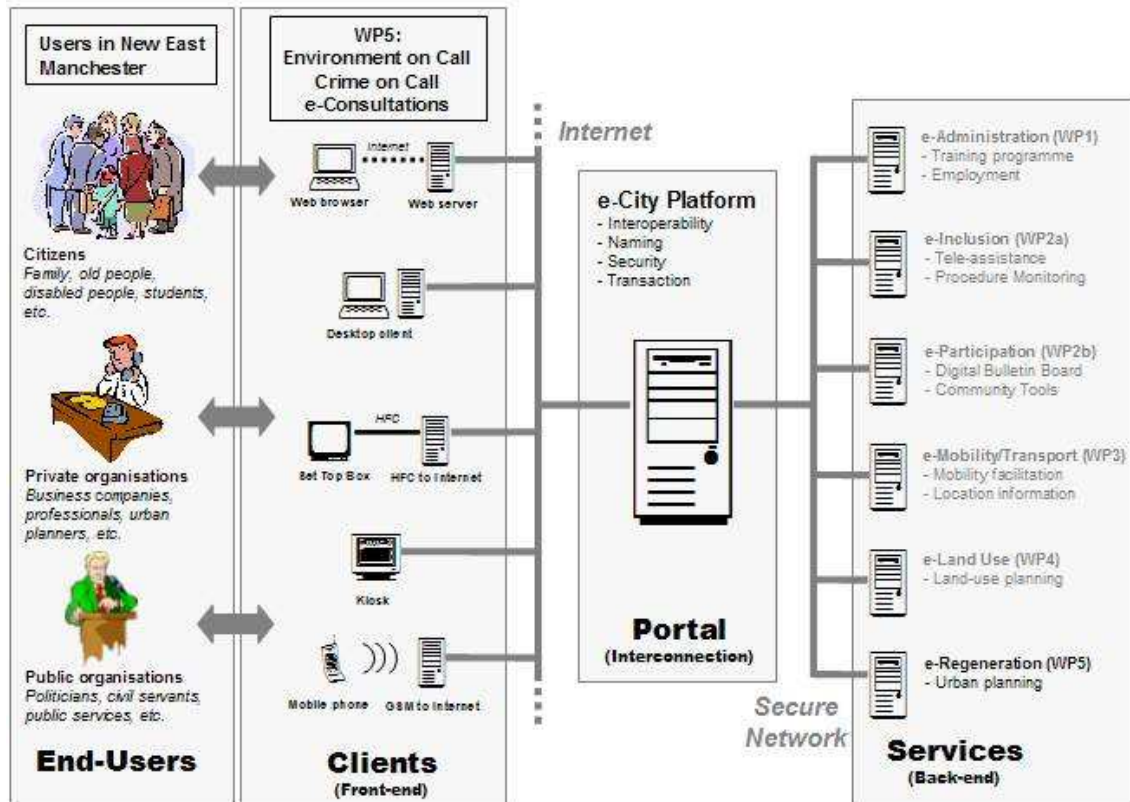


Figure 2 WP5 and the e-City Platform

3.1 Environment on Call and Crime on Call

Manchester City Council's Environmental Services allow citizens to report issues and find out about services through a part of their web site called Environment On Call. This is the City Council's contact centre for all environmental and operational Services. At the moment it is possible to contact Environment On Call via telephone, textphone, text messaging or e-mail with any reports or enquiries about the street environment. Staff are on hand to take telephone enquires Monday to Friday from 8am to 8pm. Citizens can also use a series of on-line forms to report particular environmental problems. For example, you can report a problems with grounds maintenance such as parks or gardens or road and pavement problems. You are required to describe the problem and be as specific as possible with regards to its location. It is also necessary to leave contact details. In many cases Environment on Call staff are forced to telephone the person making the call to clarify the exact location. Once the electronic enquiry is received a call centre operative uses an in-house GIS and attempts to identify the exact location on a map based on instructions received. The same procedure applies if a citizen telephones the City Council to report a problem rather than using the on-line method. Once the location has been identified the operative produces a report which is then forwarded to the relevant

team on the ground to deal with the problem. This involves a pro-forma with the necessary details on a map. The Crime on Call system works in exactly the same way, the only difference is that the issues being reported related to different types of crime such as car crime, burglary, anti-social behaviour etc. The system works by sending information to the New Deal for Communities Crime and Safety Officers rather than directly to the police. This has worked well within the community as people have felt more comfortable informing the community organisation rather than dealing directly with Greater Manchester Police.



Figure 3: Environment on Call Public GIS

As mentioned earlier one of the central aims of WP5 and of IntelCities as a whole has been the 'delivery of streamlined city government, city management and city regeneration processes which lead to more efficient use of city facilities and resources and improve the economic competitiveness of cities (<http://www.intelcitiesproject.com/>). The development of the Environment and Crime on Call systems as part of WP 5 clearly support this aim. The inclusion of a GIS interface to the current city services allows citizens to identify the exact location on the map themselves, select the service domain (e.g. broken pavement or crime example etc.) fill in the necessary details and then send the enquiry to Environment on Call or Crime on Call (see in Figure 3). The advantage of the system under development is that the enquiry goes directly to the relevant team who deal with the specific service providing a report of the problem and a map. In some circumstances it is expected that the system will be further developed in the future to be transmitted directly into a vehicle, such as a refuse collection truck if it related to a missed bin or

a grounds maintenance truck if it related to parks and gardens. With regards to a reported crime the message could be directly texted to officers patrolling the area concerned. As well as providing a more streamlined service between citizen and street operative, the system also provides new intelligence on service delivery and management. The system generates a geo-referenced database which allows policy makers to monitor the types of complaints and enquiries being reported. The report also includes a URL allowing them to recreate the users map with a point layer representing specific comments. This allows the Council to map and monitor the spatial location of the different types of service enquiry allowing them to investigate persistence problems and target resources appropriately.

3.2 e-Participation

The focus of the systems described above is on reporting problems or making enquiries and not about consultation and participation. The e-Participation system however is aimed at supporting and improving open and transparent dialogue which has a spatial planning and regeneration focus. The system allows citizens to discuss new proposals or identify issues relating to space and place within their community. As shown in Table 2, the e-Participation system can fulfil the tasks set out by tools categorised as providing 'enquiry/reporting & tracking services', as well as acting as a 'community process' and 'asset mapping' tool. While this tool can be used to facilitate all the different types of public participation processes listed in section 2.1, ideally it will be used to assist citizen-led participation in the regeneration decision-making process. In this scenario, users start discussions and debate issues and thereby, in a sense, create their own geo-referenced community database.

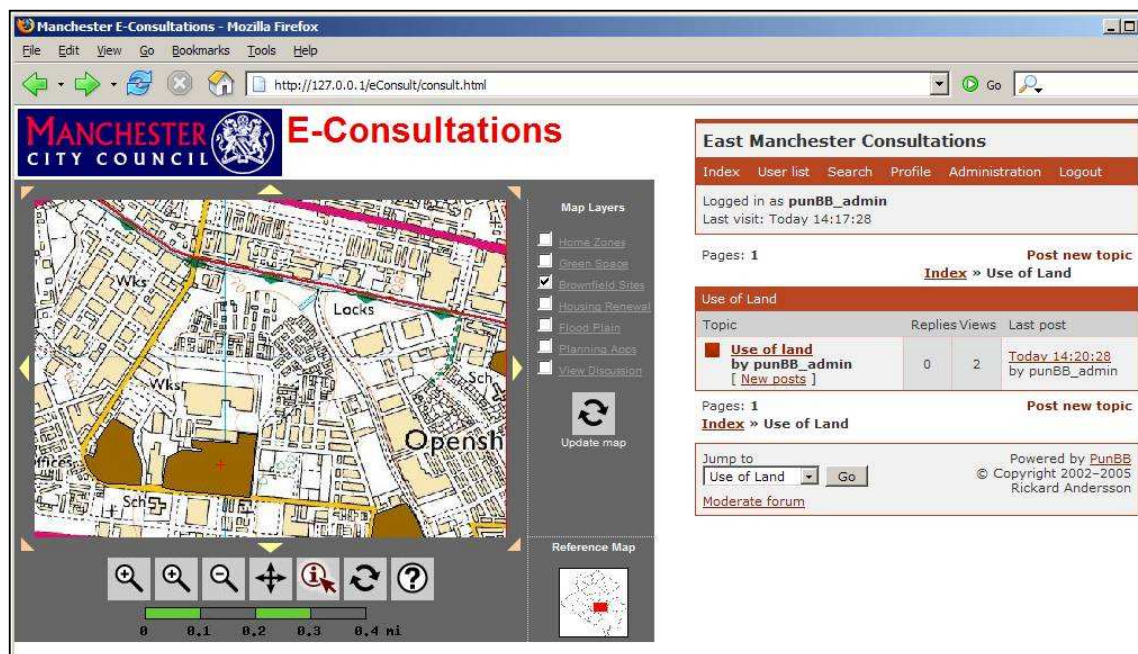


Figure 4: PPGIS with integrated discussion forum

The e-Participation tool uses the same base technology as the other systems developed for WP5. The system is based on the OGC compliant Web Map Server (WMS) technology and supports a range of spatial data formats including ESRI Shape files, MapInfo and various raster data formats such as geoTIFF. It also has functions for the inclusion of further geospatial layers to show relevant spatial policy data and information, etc. It makes use of CGI executable files for the processing and management of user comments and feedback using the PERL scripting language. The system also incorporates a geo-referenced discussion forum written in PHP and uses a MySQL database to store user discussions as shown in Figure 4 below. Users can navigate the map by zooming and panning into an appropriate location and turning relevant map layers on or off and querying these layers for relevant attribute information. A discussion can be started by switching to the appropriate mode and clicking on an appropriate location. The user then activates the discussion forum by creating a topic and initiating a discussion. Other users can search the map for discussions based on a specific topic, keyword or click on point locations on the map to view previous users comments and make appropriate comments themselves.

It is anticipated that NEM and the City Council officials will initiate discussions on specific urban regeneration issues at specific time intervals as and when the policy process dictates in parallel with community-led initiatives. The discussion forum can syndicate the latest discussions to other web sites/pages to highlight the latest activity. There are still a number of key operational issues to be overcome during the coming months, such as:

- should a moderator be present for discussions;
- what spatial data layers should be included;
- an evaluation system to provide questionnaires and interactive weighting and priority setting for users to give feedback on plans and programmes;
- a layer for information providing access to photos, text, 3D VRML, etc;
- facility for users to link to their own text and graphics allowing users to provide their own material; and
- should users be able to upload their own spatial data rather than just comments and ideas.

All three systems developed use the same underlying system architecture using OGC compliant WMS technology, MySQL for storing enquiries in a database, PHP for the discussion forum and PERL for processing the enquiries. They also meet the UK's electronic Government Interoperability Framework standards (e-GIF). While the systems developed here are focused on NEM, they are scalable and can be expanded to include the whole of the Manchester Metropolitan district and the wider city-region. Indeed the system can work in any place by changing the spatial data to the appropriate location.

4 E-GOVERNMENT AND THE PROVISION OF BETTER SERVICES

4.1 Improving Public Participation

As one of the responses to the Lisbon Strategy, The eEurope 2005 Action Plan was launched at the Seville European Council in June 2002 and endorsed by the Council of Ministers in the eEurope Resolution of January 2003. The principal aim of the eEurope initiative was to harness the power of ICT in order that it may provide a favourable environment for private investment, job creation and productivity and growth, while modernising public services and giving all citizens the opportunity to participate in the global Information Society. On June 1 2005 the European Commission announced, i2010 – also known as ‘European Information Society 2010’ with an aim to promote growth and jobs in the European Information Society and media industries. The new five-year strategy, which is meant to succeed the previous eEurope 2005 initiative, provides a comprehensive framework for the development of the digital economy. In this respect, EU policy instruments such as regulatory initiatives, research, and partnerships will play a key role in the implementation of the new strategy. According to the European Commission, the i2010 initiative will contribute to the implementation of three policy priorities:

- **Create an open and competitive single market for information society and media services within the EU.** To this end, the Commission will propose the following initiatives: an efficient spectrum management policy in Europe (2005); a modernisation of the rules on audiovisual media services (end 2005); an updating of the regulatory framework for electronic communications (2006); a strategy for a secure information society (2006); and a comprehensive approach for effective and interoperable digital rights management (2006/2007).
- **Increase EU investment in research on information and communication technologies (ICT) by 80%.** Europe currently lags behind in ICT research, investing only EUR 80 per head as compared to EUR 350 in Japan and EUR 400 in the US. Among other initiatives, i2010 will promote trans-European demonstrator projects to test out promising research results, and take measures to better integrate small and medium-sized enterprises in EU research projects.
- **Promote an inclusive European information society.** The Commission will propose an **Action Plan on e-Government for citizen-centred services (2006)**; three “quality of life” ICT flagship initiatives in the areas of ageing, intelligent vehicles, and multilingual digital libraries (2007); and a number of actions to overcome the geographic and social digital divide, culminating in a European Initiative on e-Inclusion (2008).

Concerning e-government, the European Commission’s i2010 Communication notes that making public services “better, more accessible and more cost-effective” is a “key challenge”. In spite of considerable advances achieved in the rollout of electronic public services, the Communication stresses that **“much remains to be done to demonstrate economic impact and social acceptance” of e-government.** In addition, there is still a need to develop “common interfaces, portability of identity from one system to another and authentication systems”, the

Communication says, as well as for “new practices, new skills and different rules”. (European Commission, 2005). The IntelCities project clearly addresses e-government aspirations expressed in i2010. More specifically, on the issue of public involvement and planning, IntelCities visibly supports the EU’s Action Plan on ‘e-Government for citizen-centred services’ by enabling ‘citizens and business to play a far more participative and inclusive role in city planning via more reliable city modelling, predictive planning and advanced visualisation technology’ (IntelCities, 2005).

4.2 Improving Policy Analysis and Resource Targeting

As detailed above, the development of Environment on Call, Crime on Call and E-Participation and the provision of these services in NEM is a visible step in addressing the goals of improved e-government. While Environment of Call and Crime on Call are limited in their ability to improve government decision-making and focus more on increasing government efficiency, the e-Participation system is capable of both increasing efficiency and the role of citizens in decision-making.

As well as improving the types of services offered to citizens it also provides opportunities for improving the management of cities and helping achieve long term physical, social and economic sustainability. For example, the Environment on Call system’s database stores geo-referenced complaints and enquires based on the type of complaint made. This allows policy officers to monitor in a GIS the spatial dispersion across the city of service use. They can monitor in real time whether there is clustering of particular problems and target resources appropriately as and when problems occur. For example, if a cluster of missed bins or vandalised cars are appearing in a particular part of the city they can investigate why this is occurring at particular locations and take the necessary actions to alleviate any problems.

This research is on-going and it is anticipated that results of current experiments will be reported upon in further user testing in Manchester. It is envisaged that the e-CP will continue to be developed and enhanced to work across a number of European Cities. Future outcomes of this research will depend upon the EC deciding on whether to adopt this type of system across Europe.

Acknowledgements

This research was funded by the EU’s 6th Framework IST Programme No. 507860. We would like to thank the project coordinators Manchester Digital Development Agency and the many people in NEM who have been involved in this work.

REFERENCES

Al-Kodmany, K. (2002) GIS and the Artist: Shaping the Image of a Neighborhood in Participatory Environmental Design. In Craig, W., Harris, T. and Weiner, D. (ed.) **Community Empowerment, Public Participation and Geographic Information Science**. London: Taylor & Francis.

Babicki, D. (2005) **ICT and Regeneration in New East Manchester**. IntelCities WP 5 Report, University of Manchester (unpublished report).

Boyd, S. and Chan, Ray (2002) **Placemaking Tools for Community Action**. <http://www.placematters.com/Documents/RESOURCES/OpenBackgnd.html>. Accessed on April 20, 2005

Craig, W., Harris, T. and Weiner, D. (eds.) (2002) **Community Empowerment, Public Participation and Geographic Information Science**. London: Taylor & Francis.

European Commission (2005) European Commission unveils new Information Society strategy. Press release 2nd June <http://europa.eu.int/idabc/en/document/4340> Accessed on 5th June 2005.

Harvey, P.M., Green, S and Agar, J (2002) From Cotton to Computers: the Social Contexts of Virtual Manchester. In Woolgar, S. (ed) **Virtual Society**. Oxford: Oxford University Press.

Healey, P. (1997) **Collaborative Planning – shaping places in fragmented societies**. London: Macmillan.

Hudson-Smith, A., Evans, S., Batty, M. and Batty, S. (2002) Online Participation: The Woodbury Down Experiment. **CASA Working Paper No. 60**. London: CASA, UCL.

IntelCities (2005) **About IntelCities** <http://www.intelcitiesproject.com/> Accessed on 4th May 2005.

Kingston, R., Evans, A., and Carver, S. (2003) Public participation via on-line democracy. In S. Geertman J. and Stillwell (eds), **Planning Support Systems in Practice**. Berlin: Springer-Valag.

Kingston, R., Carver, S., Evans, A. and Turton, I. (2000) Web-Based Public Participation Geographical Information Systems: An Aid To Local Environmental Decision-Making. **Computers, Environment and Urban Systems**, **24(2)**, 109-125.

ODPM (2004) **Market renewal pathfinders: learning lessons**. London: ODPM.

OECD (2001) **Citizens as Partners: Information, Consultation and Public participation in policy-making**. Paris, OECD.

Pemberton-Billing, I. (2005) **The Regeneration Process in New East Manchester**. IntelCities WP5 Report, University of Salford (unpublished report).

UNECE (1998) **Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters**. Geneva, UNECE.