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Worcestershire Partnership Joined-Up Information System (JUIS)

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Introduction

The Research & Intelligence unit at Worcestershire County Council has developed the Joined Up Information System (JUIS) on behalf of Worcestershire Partnership

Worcestershire Partnership is the strategic alliance of key public sector organisations. This includes the County and District councils, West Mercia Police and Worcestershire Health Authority. The partnership has six priority areas:

- Learning and Skills
- Healthy Communities
- Economic Success
- Connecting Worcestershire
- The Environment,and
- Community Safety.

To tackle Community Safety, there are now four Community Safety partnerships across Worcestershire, one for each district in the north of the county, and as of April 2003 a single merged-partnership covering the three districts in the south.

This paper sets out how the concept of JUIS emerged, and how it has developed into a tool to support partnerships over the last three years.

Background

JUIS developed as an initiative based around Community Safety.

Every three years, the Home Office requires each Community Safety partnership to "audit" crime and disorder activities within their area. A crime reduction strategy is produced based upon the findings of this audit.

The audit consists of two main parts:

a. An analysis of a wide range of statistical data related to crime and disorder and quality of life, to identify "hotspots", trends and potential causes. This includes data from the police, local authorities, the health authority and the fire service.

b. A qualitative survey based upon the fear of crime.

The first round of audits was undertaken in 1998/99.

The partnerships in Worcestershire faced many challenges during the audit. Particular problems were encountered relating to the collection and analysis of statistical data:

- Each partnership had very limited resources to collect data
- None of the partnerships had a dedicated resource for data analysis
- Accessing relevant data proved difficult, due to data protection issues, and simply lack of availability
- Data quality and accuracy was poor

Worcestershire Community Safety Steering Group requested that Sgt. Paul Bogaard from West Mercia Police (on secondment to Worcs County Council at the time) investigate methods of improving information sharing between partner organisations. This would assist partnerships in performing the next audits in 2001/02.

Paul reviewed how information sharing systems had been established throughout the country. It became clear that several London boroughs, for instance Southwark and Harrow, had devoted significant time and money to implementing such systems. Hence, they were selected as models to follow.

The basic strategy was a "hub and spoke" approach. A team of data analysts developing a data warehouse would be at the hub, with each partner a spoke, having use of the data analysts and access to the data warehouse.

JUIS could have wider benefits other than Community Safety, but it was decided to have a Community Safety focus initially.

Steps to Information Sharing

The following issues needed to be tackled in order to develop an information sharing system:

- Create a resource for collecting and analysing data that partners could use
- Improve access and availability of relevant data – account for data protection provisions
- Improve the quality of data available
- Provide high quality data analysis, potentially using Geographic Information Systems (GIS) Mapping software, to enable results to be interpreted and communicated easily

Now, I will talk about how each of the four issues was addressed. Issues regarding funding will be discussed separately.

1 Resource for data collection and analysis

The Research & Intelligence (R&I) unit at Worcestershire County Council had been involved in the 1998/99 Community Safety Audits, albeit in a small way. This team had experience of data analysis and use of GIS. Hence, this team was ideal to utilise for collating and analysing data for each of the six Community Safety partnerships.

Within the R&I unit, two data analysts have been appointed to undertake work on the audits.

2 Improve Access to data

An information sharing protocol has been developed by West Mercia Police, in conjunction with the R&I unit, to overcome data protection issues. This is supported by the fact that Section 115 of the Crime and Disorder Act 1998 gives partner organisations new powers to exchange relevant information. Partners' chief officers have now approved the information sharing protocol.

The issue of producing an information sharing protocol was very challenging. We were fortunate to be guided by Sgt. Peter Wilson from the Crime and Disorder Team at West Mercia Police

Like many other partnerships, we have faced challenges with regard to sharing information. Issues surrounding data protection can be difficult to overcome. Initially, all partner organisations in Worcestershire were looking to approve one protocol document for all forms of information sharing.

However, each partner organisation could share a huge amount of information, for a variety of different reasons. It became clear that it would be very difficult to reconcile these different needs in one protocol. Hence, we decided to devise a specific protocol for our needs. The JUIS protocol is focussed around the exchange of specified datasets, for defined purposes. If a potentially sensitive dataset is involved, methods for depersonalising the data are laid out.

A countywide Community Safety Audit Team has been established to project manage the audit process. This has members from the R&I unit, each of the Community Safety Partnerships, and other partner organisations. This team has decided on the data that is required for the audit across the county, and is very useful in providing the R&I unit with relevant contacts to access data within each organisation.

To have a functioning information sharing system, it is very important to have key contacts within partner organisations. Whilst exchanging information requires appropriate systems to be in place to support and control the process, it is vital that there is trust between the partners involved.

3 Improve Quality of Data

It has been decided by the Audit Team to collect data at postcode level, wherever possible. This was chosen as most suitable because most organisations include postcode details in their datasets, and postcodes can be used as a building block for aggregation (e.g. to ward level). Postcode data also helps in identifying localised "hotspots", and generally solves the problem of the lack of co-terminosity between organisational boundaries (e.g. police beat areas do not normally match up to wards).

A large amount of postcode data has been exchanged, including police (crimes and incidents), health authority (mortality rates and low birth weight babies) and local authorities (school exclusions, free school meals recipients and GCSE results, benefit claimants).

The quality of data can still be variable. To address this problem, data-cleansing software has been used. The software uses a standard set of base data (either Ordnance Survey Addresspoint or Post Office Address Format) which is reconciles against the data we provide.

Datasets e.g. Crime or Benefits needs to be converted to Comma Separated Variable (.csv) format to be used in conjunction with the cleansing software.

The crime data we use contains the date, time, street name, postcode, post town and crime type for each crime. The cleansing tool can fill in missing postcodes and/or correct wrongly assigned postcodes by examining the other address details against Addresspoint or PAF.

There are two stages to the cleansing process:

1. "Automated" cleansing – as the title suggests, this is performed by the software without any involvement from the user, except in the initial setting up.
2. "Interactive" cleansing – after the "automated" stage, the software produces a list of queries, which are addresses that it cannot reconcile. The user then has to manually reconcile these, where possible. It might be that isn't enough detail in the original data to progress further e.g. M5, Worcester. In which case, this record could not be cleansed.

The data that we use tends to be 80-85% accurate, and the cleansing process can improve the accuracy by 5-10%. Even though our datasets are fairly small, with up to about 40,000 records, an increase in accuracy of 5-10% adds significantly to the value of the resulting analysis.

The cleansed data is outputted in a standard format (in compliance with BS 7666), which can then be linked to local and national gazetteers.

4 Increasing the Quality and Availability of Data Analysis

The County Council is in the process of commissioning a new GIS (Arcview). This is being utilised for analysing data. The Internet capability of the GIS (ArcIms) is also being used to develop a website to provide partners with access to data and maps over the World Wide Web.

Screen shots of the website are included below. It is located on the GIS server at Worcestershire County Council, and contains ward data for Worcestershire and the West Midlands on several topics:

- Demographic data (e.g. from census)
- Datasets from partners including Crime, benefit recipients and mortality

Figure 1 – JUIS homepage

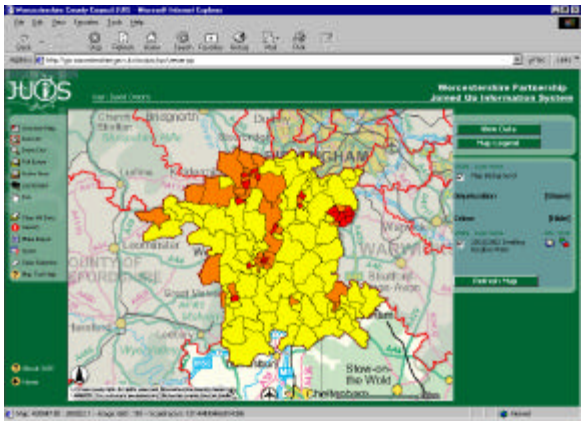

Figure 2 – Thematic map – dwelling burglary by ward, Worcestershire

Each dataset can be layered onto an OS base map (either 1:10,000, 1:50,000 or 1:250,000, 1:1,000,000) depending on what resolution is selected.

Partners can also take advantage of the query function. This enables the user to identify areas which fit particular criteria, for instance wards in Worcestershire with a crime rate of greater than 50 per 1000 of population.

The GIS component of the website is password protected, with each partner having a user name and password to login.

Current Activities

Worcestershire Partnership has endorsed the project. The JUIS team produced detailed statistical analyses for each Community Safety Partnership in Worcestershire in 2001/02. More recently, we have been working with Herefordshire and Worcestershire Fire Brigade on developing their Incident Risk Management Strategy.

The capability of the JUIS approach is now being more widely recognised and implemented, particularly regarding Performance Management. We are currently developing Performance Management Frameworks for the Local Public Service Agreement (LPSA), the Substance Misuse Action Team (SMAT) and the Worcestershire Community Strategy in addition to on-going work with Community Safety partners. This shows the focus is now much wider than community safety, and we provide partnership support and problem-solving to agencies, particularly around performance management.

JUIS is also currently being used to develop a set of local level deprivation indicators for Worcestershire, to identify areas of need and opportunity across the county.

Funding

JUIS has been funded by 13 partner organisations. The majority of the funding has come from the Worcestershire community safety budget. This has paid for data analysts, and the data cleansing software.

Effectively, it saves each partnership employing a dedicated data analyst, thus saves them money, and encourages a common approach across partnerships.

Building on Success

We aim to develop JUIS into a "centre of excellence" for data analysis –continuing to support the needs of partner organisations and the community as a whole, by helping partners to develop more effective policies, using a problem solving approach.

The possibilities for expanding the GIS-based website are immense. The range of datasets can be developed to encompass the business community amongst others –particularly considering the material that will emerge from the new census, which is now being integrated with the JUIS website (www.juis.org.uk), both for partners and the general public, going live in August 2003.

Conclusion

JUIS is successfully demonstrating the benefits of partnership working. It brings together Best Value with the e-government/Modernising government agenda to form a coherent vision for sharing information in Worcestershire.