



Implementing data quality metrics and standards to enhance crime-fighting throughout the force's jurisdiction and beyond

“Poor quality and inconsistent data had become major inhibitors to the successful use of technology in crime prevention and intelligence. By introducing Informatica Data Quality, we have been able to align all of our data to internal and external quality standards. This has made a marked difference to the quality of what our information systems can provide to officers on the streets and detectives examining cases.”

— Graham Dawson, Head of Information Services, Humberside Police

Humberside Police is one of the 43 police forces in England and Wales, covering a wide geographic area of north east Lincolnshire, north Lincolnshire and the East Riding of Yorkshire, along with the urban area of Kingston-upon-Hull. In evaluating its ability to meet the requirements of several forthcoming nationwide police information initiatives, Humberside Police identified that poor data quality and inconsistency had become significant inhibitors in its ability to leverage technology to tackle crime and provide accurate intelligence.

The force's information systems team therefore embarked on a project to create a powerful platform for analysing, standardising and enhancing data across its multiple crime, nominal and vehicle systems. At the heart of the challenge was the need to identify the extent of the data quality issues at hand, in order that they could be addressed directly with the teams responsible for data entry and systems management.

Data quality has become pivotal to police forces in England and Wales as they work to implement several key IT initiatives aimed at enhancing policing efficiency. These initiatives include IMPACT, the proposed programme for information sharing, analysis, briefing, investigation and crime recording; and MOPI, the Management of Police Information. From a broader perspective, there is an ongoing requirement for police forces to supply quality information in order to support initiatives to better integrate the nation's criminal justice IT systems.

FAST FACTS

CUSTOMER

Humberside Police

CHALLENGE

Enhance data quality according to an agreed set of data quality standards for a regional UK police force, ensuring that officers can be armed with the greatest amount of accurate information at the right time when attending incidents and detecting crime.

INFORMATICA SOLUTION

Informatica Data Quality

BENEFITS

- Ability to define data quality metrics and monitor, cleanse and enrich crime-fighting information to ensure police officers are provided with timely and accurate information
- Reduce business risk and investment risk involved in maintaining information systems through better management of data quality
- Reassignment of personnel to other tasks through reduced administration burden for information systems

For the modern police force, technology plays an integral role in an officer's ability to detect crimes, collate evidence and work to apprehend suspects. Humberside Police, like many others in the country, realised that in order to exploit the information that new technology was providing - for example, vehicle number plate recognition systems and their role in correlating the whereabouts of potential suspects - better quality data was required so that information gathered could be better applied to the tasks of crime prevention and criminal intelligence. Enhancing data quality had the potential to generate dramatic improvements in the effectiveness of key crime and intelligence information systems.

The Challenge

Humberside Police is no different to any other police force in England and Wales in that it faces a multitude of information challenges in modern crime-fighting. The ever-increasing mobility of criminals and suspects results in an increasing need for co-operation between different forces, while the drive at Government level for a more 'joined up' approach to criminal justice requires more effective information sharing between local police forces, specialist police divisions and

other organisations. If information accuracy cannot be assured because of inadequate data integration and quality standards, the risk is that police will be unable to act on intelligence information with confidence and will find it more difficult to make correlations between different pieces of information in order to pursue suspects.

One factor that was already obvious before the data quality project commenced was that the innumerable sources of data that could enter police information systems created enormous scope for poor quality data. For example, if a vehicle was seen leaving the scene of a crime and reported by a caller to an emergency service, the quality of information provided is typically subject to the caller's personal knowledge of vehicles. Moreover, any inconsistency amongst police departments or personnel in the way in which the data was entered could add to quality problems.

"Crime-fighting has long depended on the quality of information, but with that information becoming increasingly digitised, the ability to ensure it is consistently of high quality is absolutely critical," said Graham Dawson, Head of Information Services for Humberside Police. "Whether responding to emergencies or working on long-running cases, we need to ensure that we are providing officers with the right information at the right time. Data quality is at the heart of that requirement."

Previously, Humberside Police had relied on staff being able to identify discrepancies that impacted data quality and cleanse the information systems manually. However, with data quality having become a critical need for the force and the public agenda dictating alignment of data to internal and external quality standards, Humberside Police recognised that it needed to undertake a discrete project to enhance the quality of its information.

"Informatica offered us the most functional and flexible solution for addressing our data quality needs. We trialled it extensively in a proof of concept exercise and found that it exceeded our requirements for migrating information to a data quality platform and cleansing it. This project had to embrace seven separate information feeds into our datawarehouse, and having tested the data quality platform, we were fully confident about using it with any of our information systems, which are accessible from 2,500 desktops."

— Graham Dawson, Head of Information Services, Humberside Police

The Solution

Humberside Police selected the Informatica Data Quality solution to introduce both a data quality platform to enrich its existing information systems and ensure that data quality standards were met for the long term. The project was also supported by Explorer (UK) and Unisys, the other major partners in the exercise.

Informatica was selected primarily because its data quality solution best met the technical specifications required by Humberside Police in order to ensure fast migration of the force's information to a data quality platform. This was supported by a largely automated set of processes for assessing, cleansing and enriching data.

By being able to provide a single data quality platform for integrating, cleansing and assuring quality of data from a multitude of source systems, Informatica proved that it could provide Humberside Police with a singular view of crime and intelligence data.

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In addition, the cross-system fuzzy matching capabilities of Informatica Data Quality would enable police to quickly identify links between known individuals and crimes, as well as between incidents recorded in different systems, overcoming the barriers of previously poor quality data and lack of a unified data management standard. For example, a person who went by different names in different parts

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of the country could be better assessed as a suspect in a number of what appeared to be similar crimes.

"While many of the data quality problems we used to have were deep-rooted, others were far simpler. Many of the people listed in our information systems go by several names, have names that are difficult to spell, can be spelled in different ways or have their titles missing. This means that we are always in danger of holding multiple entries for the same person, and in some cases suspects will give differing details to deliberately try to beat the system. That's where the data quality project has helped by enriching our data - we are now able to assure quality of information, making it far easier to identify correlations and therefore fight crime," said Mr. Dawson.

The data quality platform, one of the first of its kind instigated by a police force in England and Wales, is now fully operational and is proving to be wholly effective in enhancing the quality of crime-fighting information and intelligence. As well as raw text and data files, Informatica Data Quality could be used to assure the integrity of information across image files, fingerprints and DNA records.

One of Informatica's UK partners, Explorer (UK), led the exercise with Humberside Police assisted by Unisys. Explorer (UK), with their technical team of consultants provided guidance and support throughout the evaluation period and continue to provide technical support and consultancy.

The Results

The full results of the investment in Informatica Data Quality have yet to be quantified, but several milestones have already been achieved and Humberside Police is satisfied that the objectives are being met and that return on investment is being achieved. Firstly, the force is confident that its information systems will meet all of the stipulations of the IMPACT programme.

One major area of progress to date has been the accuracy of information in the systems, assessed by quantifying what percentage of records conform to data quality standards. The results, which span more than 150,000 nominal records, have been dramatic. Whereas previously police information analysts established that 83 per cent of vehicle registration records conformed to data quality requirements, that figure is now nearing 97.9 per cent. Accuracy of information held about vehicle types/manufacturers is now 98.7 per cent.

Having introduced a data quality platform and a programme of enhancements to meet the series of ongoing police effectiveness initiatives, Humberside Police is now looking to extend the data quality platform to cover mobile devices. This will aim to ensure that information, both data and images, gathered by officers and entered into mobile devices conforms to the quality standards now required by the force's central information systems.

"We now have complete confidence that we are providing much better quality information to our officers no matter where they are and what the circumstances," said Mr. Dawson. "With Informatica we have quickly been able to introduce a much improved data quality environment, enhance how we manage our information and even free up members of the team for other tasks. Having already met our initial objectives for enhancing crime-fighting information and intelligence, we are targeting our resources at making our information systems even more effective for modern policing."

NUTS AND BOLTS

- Data Quality: Informatica
- Sources: Various bespoke multiple format feeds from seven key applications covering: command and control, client reporting, intelligence and major incident enquiries; Third-party systems, again using multiple formats
- Target: Microsoft-based datawarehouse plus Autonomy for information search
- Platform: Various industry-standard platforms



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