

QlikView

DEVON AND CORNWALL POLICE

A Customer Value Study



July 2012

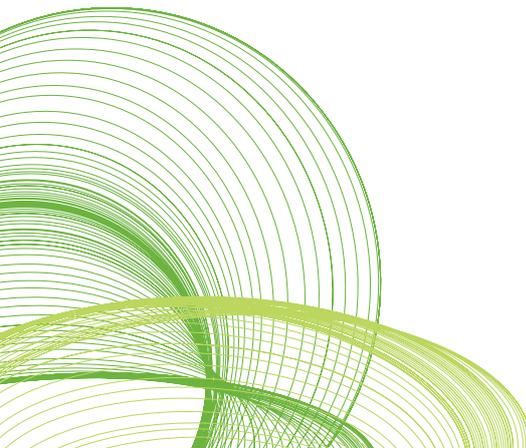
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QlikView

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Introduction

At Devon and Cornwall Police there is a strong drive to take a proactive and innovative approach to performance management, which has resulted in the use of the QlikView Business Discovery platform within the force. This was driven by the 'Performance and Analysis Department' who implemented the software extensively for use by officers and staff covering a multitude of reporting and analytical requirements. The overall management of QlikView is carried out by Richard Bullock, the Performance Analysis Manager who initially championed the force's use of QlikView.

The force was able to proceed with QlikView when following a thorough investigation into the IT options available, it was concluded that the significant cost savings alone from using QlikView as opposed to existing management information systems were enough justification for senior officers to proceed. In addition to the cost savings, a myriad of other benefits were later found and will also be explored within this report.

With the ever-increasing levels of data and pressures to present this data, information and analysis in a meaningful and timely manner internally, to the Home Office and other agencies and the general public, it became clear that more efficient and effective data management systems were required.

Devon and Cornwall initially chose QlikView to provide a robust, cost-effective solution to key reporting needs, with a view to also developing a large data warehouse and expand various Microsoft software licenses. However, the Force quickly established that QlikView offered significantly more benefits than they had expected and it had a much greater applicability to corporate reporting within the Force. This was due to the fact that the organisation could implement applications which could be applied to almost every function within Devon & Cornwall Police and thereby support the Force to increase performance, save time and significantly reduce costs.

The initial deployment and implementation of QlikView was surprisingly straightforward for Devon and Cornwall Police taking just under four weeks. The system went live on 1st February 2008 with one Qlikview report; subsequently they have gone on to implement and manage over 50 throughout the Force.

Executive Summary

Following in-depth interviews with the key performance analysts and managers at Devon and Cornwall Police, this report highlights the major advantages and value that can be gained by choosing QlikView.

The following statistics represent the most significant benefits realised from the adoption of QlikView at the Force:

- **£256,250 saving in labour time**
- **£80,000 saving in training costs**
- **£925,000 saving in technology costs**
- **97% accuracy rate in statutory data submissions for the national crime mapping initiative using QlikView against a national average of 67%.**
- **Delivers more accurate, detailed, relevant and useful management information than previously possible**

In addition to the high-level benefits, there have been a number of other impressive benefits that Devon and Cornwall Police have experienced since adopting QlikView:

- Helps to support operational effectiveness
- QlikView was very quick and easy to install due to the unique technology employed => Limited disruption and rapid re-paying of initial investment
- Very easy to operate for both the analysts and other personnel and easy for key staff to develop new applications/reports
- QlikView has supported the remodelling of many processes both within policing operations and those within the performance unit itself => greater efficiencies
- It has allowed the Force to develop a more consistent look and feel in regards to its communication literature and hence a more professional and corporate feel – this has far reaching human behaviour consequences
- Higher staff satisfaction levels – using QlikView the performance team take a more active role in data analysis and therefore Force performance
- For society and the community QlikView has supported an increase in policing 'quality', provided more detailed information on police work, and led to greater value for money for the tax payer.

- More accurate, timely and consistent data provision to external bodies such as the Home Office– Devon and Cornwall has one of the highest accuracy rates of all forces within the UK for the crime mapping initiative.
- QlikView allows the force to manage increasing information demands from external bodies such as the Home Office, in terms of data quality, analysis and performance whilst utilising less resources.
- Enterprise level self-service access for all, through a range of outputs, including interactive reports, excel and pdf.
- Allows operational systems such as the Command and Control or Forensics systems to be selected for their operational effectiveness without the need to build in additional reporting functionality as QlikView extensively covers all corporate reporting needs.

QlikView Reports

With the help of QlikView, Devon and Cornwall have extended their range of applications from a core of just six taking up to a month to produce, to well over 50, some of which can be produced in seconds. The breadth of information coverage gives the force almost unlimited options for analysis and reporting on all their data.

“It’s about getting the right information out at the right time in order to make decisions. QlikView enables this.”

The following is a brief description of some of the applications produced by Devon and Cornwall using QlikView and the value they have gained:

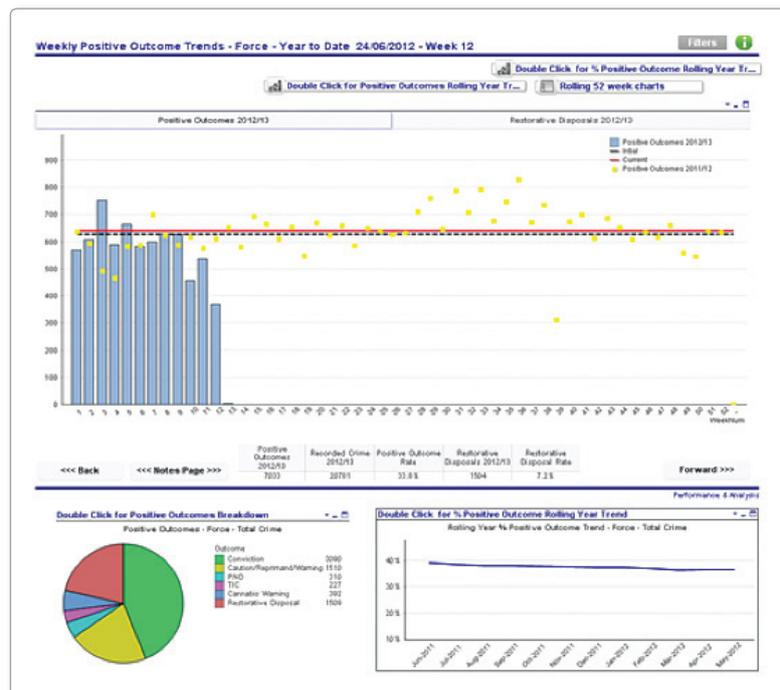
THE WEEKLY CRIME APP

This is the most frequently used QlikView application as it provides the Force with the Trend and Performance Statistics (TAPS) which are vital in driving daily operations. Before QlikView, the report took the performance team 3 hours a week to produce. It could only be analysed based on geography at a force level and limited to only a weeks' worth of data at a time. Furthermore it would then take another week each year to re-establish the report. The level of analysis and detail to which the end user could request was therefore pre-determined and inflexible.

The force has experienced three major benefits since using QlikView for the weekly report over the previous system which was based in Excel:

1. The colour coding system helps to quickly highlight any policing quality issues, for instance assigning the incorrect disposal for a crime.
2. There is now much more detailed information available from the performance unit which aids policing strategy and resource allocation. For example, crime information may now be drilled down according to type, number, geographic location and specific dates.
3. The savings in time taken to produce the report (reduced from 3 hours per week to instantaneous) equates to 200 hours per year. How this extrapolates to money saved is detailed later in the report.

This weekly report has recently been supplemented with a daily crime report. This report details crime levels on a daily basis, and is used at daily tasking meetings. Prior to QlikView this level of reporting was not possible, due to the timings of meetings and staff availability to create the reports. With QlikView the production of a daily report is automated and delivered in a timely manner to the daily tasking process.



THE BALANCED SCORECARD

This is a summary report of key metrics and forms a high level view for all business decisions at every level of the force. KPI's are displayed on one page and highlighted in red, amber or green according to whether they have been achieved, alongside a trend direction of travel. The interactivity of the application then allows the user to drill down from a force to a local level in a matter of seconds. This is a report that Devon and Cornwall would not have produced before QlikView. It has already proven its worth, providing an overview of performance on one summary sheet, hence removing a lot of the 'guess work' and helping to make more informed decisions and hence improved effectiveness.

“We never really had the summary level information on how the force was performing; it would have been off the top of the head.”

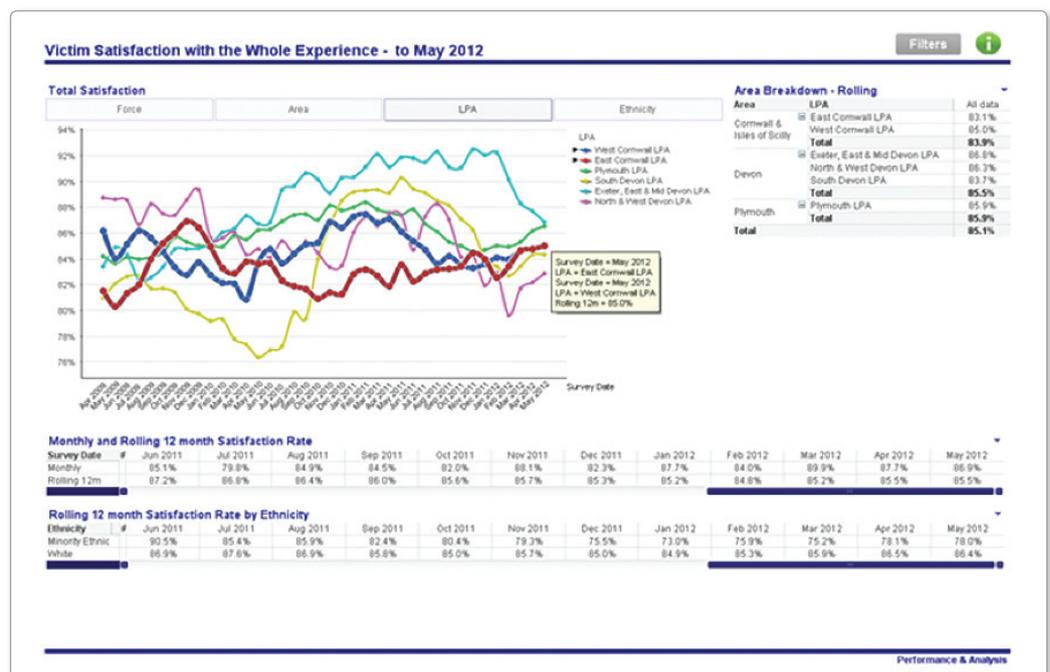
THE HR REPORT

From an information point of view, this report allows the force to see how many officers and staff they have, where they are geographically, what roles they are performing at a specific time and what their ability is to achieve their objectives, through monitoring of absence. It also allows monitoring of equality and diversity. As an example, this application can be used to determine why there are less officers in a particular geographical area and the impact of performance of this. By clicking on the report the user may drill down through to station level which from an operational perspective allows the force to be more proactive. The information can be analysed to a high degree of detail which delivers greater insights and supports modelling of future policing demand to resources. management. The consequence of this is that QlikView supports an improvement in police performance.

Before QlikView	With QlikView
1 person 3 weeks per month to produce 4 simple charts	1 hour to update the report
Limited interactivity within the report	Ability to drill down significantly improved
No data set matching capability for more in-depth analysis and interpretation	Ad-hoc queries may be accessed on a 'self-service' basis
14 days to process ad-hoc queries	Greater interpretation of information possible

VICTIM SATISFACTION AND PUBLIC CONFIDENCE APPS

Data is gathered for this application by contacting the victims of crime, and also members of the public more widely to ask them about their experience of the police, for example, for a victim of crime were they satisfied with the service they received, were they provided with enough information on what the police were doing, did they think more could have been done etc. Before using QlikView to produce the performance information, and to answer ad-hoc questions on the data, this task used to require one fulltime member of staff. Now the information is available in a number of formats, including an interactive app, pdf summary and if necessary on a 'self-service' basis (therefore a few seconds) and in much greater detail with trend charts and tables on satisfaction by force, geographical area, team, crime type, etc.

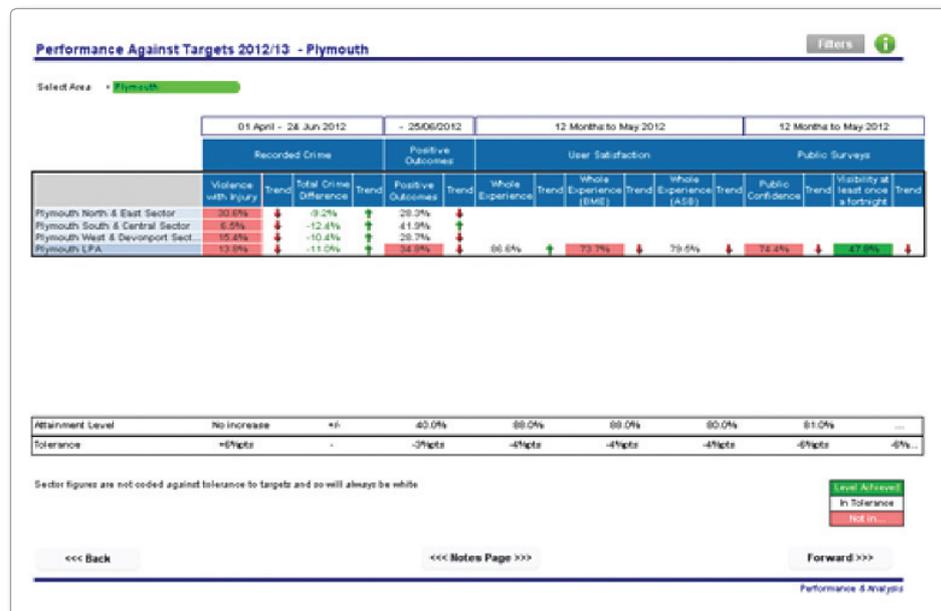


WORKLOAD APP

This application shows the number of crimes each officer currently has on their workload with the intention of highlighting any imbalances so that resources can be employed in the most effective and efficient manner. This also helps to increase officers' work-life balance by preventing too much pressure being placed upon individuals. Before QlikView this would have taken one person two hours per week to produce a static top level excel report. Now the report simply runs automatically once a week, saving a significant amount of time AND the user may drill further down into the information, for instance out of the 7,000 crimes that have taken place, who is dealing with them and for how long have cases been open etc.

QUALITY APP

QlikView has enabled the force to produce this application when previously they had limited ways of knowing what the quality levels of their investigations and police work were, most of which were time consuming to produce. This is extremely powerful as not only does it help to improve operational effectiveness and standards but it also has the subsequent effect of improving police perception and satisfaction among the community. As an example the report highlights how a specific officer is going about his investigation against a variety of force benchmarks – are they ringing the victim up to keep them updated, have they met with their supervisor etc. This can then be viewed as a percentage against attainment levels set based on Force expectation, and drilled down to specifics such as types of crime in a unit or a particular officer.



OTHER 'BACKGROUND' APPS AND REPORTS

Before QlikView most of the analysts' time was spent producing disparate, mainly static reports that were not connected due to the data being generated from differing systems and the 'silo' approach to information reporting.

By using Qlikview, the Force is able to extract the data from these disparate systems and produce the equivalent reports in very little time (although with much greater depth of information and interactivity). In addition because all of the data has been combined within QlikView, more reports can be produced which link the data sets and provide deeper analysis. As a result, a far greater insight into performance issues is possible through the linking of previous disparate data reports, adding more and more value to the Force.

Examples include: **Crime Mapper App** – matches of crimes, incidents and outcomes, and consequent link to attrition within the crime process; **The Local Investigation Review** – this matches data from the quality report, workload report and HR data indicating possible links between staffing levels and outcomes; **The Scorecard** – this matches data across numerous data sets. This consistency of the data being in one system rather than spread across numerous systems and then brought together manually helps to improve data accuracy and also delivers the information in a streamlined and consistent format.

In addition to these 'internal' value adding reports, by using QlikView the analysts have been able to provide extremely accurate data to the public domain. Again, by using the data matching capabilities, reports have been produced that match internal crime data with external data, for instance data from the Ministry of Justice on whether or not an individual was charged. This then builds an accurate picture for the public to view the types of crime that are happening in their area, how many, what the outcomes are etc. **Devon and Cornwall can now boast a 97% accuracy rate using QlikView against a national average of 67%.**

“We can match the data up extremely easily with QlikView, we are more accurate and it takes phenomenally less time.”

This ability to provide accurate data is of course even more relevant with the introduction of www.police.uk. It has far reaching effects in terms of transparency, increasing public satisfaction because the ability of a particular force to provide the information people want reflects the public perception towards policing effectiveness and value for taxpayer's money.



Daily Crime Summary 2012-13

Select Table | Filters | Offence Group

Total Crime Summary - Force Area

Offence Group	Year to Date*	Last 28 Days*	Last 7 Days*	28/06	27/06	26/06	25/06	24/06	23/06	22/06	Daily Limit*
Homicide	33.3% (4)	0.0% (1)	% (0)	0	0	0	0	0	0	0	0
Serious Assault	4.8% (153)	16.3% (50)	8.3% (11)	0	1	2	3	3	0	2	2
Other Assault	10.4% (2565)	6.2% (789)	-1.5% (203)	15	27	24	32	48	30	27	29
Common Assault	40.0% (1251)	32.0% (636)	40.0% (135)	9	25	20	28	25	18	9	16
Harassment	26.6% (1141)	18.8% (347)	10.8% (92)	11	15	12	12	11	21	10	12
Other Violence	-10.0% (135)	-9.6% (47)	-14.3% (12)	2	1	2	1	1	5	0	2
Sexual Offences	-0.4% (454)	-1.3% (148)	32.1% (37)	0	0	0	0	5	1	5	5
Robbery	-5.2% (109)	-11.8% (20)	16.7% (7)	1	1	1	1	1	1	1	1
Domestic Burglary	-9.5% (802)	-4.6% (269)	-21.1% (56)	8	0	4	12	8	8	8	12
Other Burglary	-13.8% (1240)	-21.3% (368)	-28.8% (94)	16	15	14	10	14	11	14	16
Theft of Vehicle/TWOC	-0.3% (351)	20.4% (118)	34.0% (35)	5	3	11	5	3	7	1	4
Theft from Vehicle	-13.7% (1251)	-23.7% (419)	-16.3% (123)	10	14	22	25	19	18	15	15
Vehicle Interference	-7.4% (88)	8.0% (27)	-66.7% (2)	0	0	0	0	0	0	2	3
Shedding	5.1% (1695)	8.2% (493)	20.0% (120)	13	17	18	20	8	20	14	20
Other Theft	-7.4% (3418)	-6.3% (1116)	-4.7% (281)	33	35	38	58	34	30	50	41
Handling	43.2% (48)	-15.0% (17)	25.0% (5)	1	0	1	1	0	1	1	0
Fraud & Forgery	37.8% (738)	13.7% (241)	38.0% (69)	5	0	19	14	6	0	9	6
Criminal Damage	-7.0% (4464)	-7.3% (1228)	-4.4% (308)	31	44	48	61	41	44	37	50
Drug Offences	-3.4% (1184)	-14.9% (370)	-5.9% (112)	11	22	12	16	12	17	22	14
Other Crime	24.2% (528)	20.0% (182)	-9.1% (38)	5	2	4	0	1	6	4	5
Total	1.2% (21789)	-3.4% (6778)	-3.8% (1730)	182	244	260	314	240	258	231	253

Violence with Injury Summary - Target: To Ensure No Increase - Force Area

Year to Date*	Last 28 Days*	Last 7 Days*	28/06	27/06	26/06	25/06	24/06	23/06	22/06	Daily Limit*	
Violence with injury	9.9% (2726)	7.0% (643)	-1.4% (215)	15	28	26	35	52	30	29	31

Domestic Abuse Crimes and Non Crime Incidents - Force Area

Year to Date*	Last 28 Days*	Last 7 Days*	28/06	27/06	26/06	25/06	24/06	23/06	22/06	Daily Limit*	
Domestic Abuse	1.6% (6263)	5.8% (2014)	-6.6% (454)	42	69	62	62	89	67	63	70

* Percentage increase/decrease compares the Year to Date, Last 28 Days and Last 7 Days with the same dates last year and in this report are relative to 28 Jun 2012. The figures in brackets give the number of crimes recorded for the period this year. Daily Limit is the number of crimes recorded that should not be exceeded to achieve target or no increase over previous year.

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Performance & Analysis

Cost Savings Analysis

Detailed below are the key ways in which Devon and Cornwall Police have reduced their costs with QlikView.

Time Savings = £51,250 per year

Whilst this report is focused on the six largest applications that are generated within QlikView, it must be noted that they only represent a limited view of the total savings as there are an additional forty apps and further tasks that are not mentioned within this document. The total time saved was therefore estimated to reach five-figures.

Below is an assigned cost saving figure to the time element saved in order to calculate what the real cost would have been to the force of gaining the increased capacity by increasing personnel numbers, instead of using QlikView.

Average salary => £20,500

7.5 hours worked per day

227 days worked per year – 260 minus 25 days holiday and 8 statutory holidays

Satisfaction Report – 1 full time person

Scorecard – 2 days per month => 24

Report	Workings	Days saved/bought
Satisfaction	1 fulltime person	227
Scorecard	2 days per month	24
HR	15 days per month	180
Crime Stats	6 requests/wk @ 2 hrs/request = 624 hrs per year	83
Workload	2 hrs/wk = 104 hrs per month	14
Incident	3 days per month	36
		Total: 564

Therefore, 564 days were saved and given an average of 227 days worked per year equates to 2.5 staff members.

2.5 x £20,500 = £51,250 saving per year

These time savings are the result of comparisons against the time taken in year one of implementation to produce the information, and are not representative of the time taken to produce the information at time of this report being written.

The potential training savings would have been equivalent to 16k per year, due to the centralisation of performance reporting, the setting up of a new unit to centralise reporting and the potential changes to IT within the organisation within the period being considered for the value study.

“The vast majority of performance information now goes through QlikView, we don’t touch many other products, whereas before we would use Business Objects, Cognos, Excel, SPSS, Word, PowerPoint – now it gets done in one place.”

It is estimated that the savings made in training costs have averaged around £16,000 per year.

National Management Information System NMIS = £185,000 per year

NMIS was provided to Devon & Cornwall police by NSPIS, as an attempt by the central police IT agency to produce a universal performance reporting and business intelligence system in one consistent way across all forces. Every force was required to have it installed for Crime and HR reporting. Now the provision of NMIS data to the Home Office is still a requirement, however using QlikView, Devon and Cornwall simply provide the required data in the pre-agreed format but much more easily, quickly and accurately through the use of QlikView.

The budget for NMIS was £185,000 per year, to pay for both licensing and internal development of the solution, in the areas of Crime and HR reporting.

Summary of cumulative cost savings

The table below shows the cumulative cost savings achieved over 5 years since QlikView was installed:

Year	NMIS	People saved/ gained	Training	QlikView (includes training costs)	Cumulative saving
1	185,000	51,250	16,000	78,000	174,250
2	185,000	51,250	16,000	14,000	412,500
3	185,000	51,250	16,000	14,000	650,750
4	185,000	51,250	16,000	14,000	889,000
5	185,000	51,250	16,000	14,000	1,127,250
Total	925,000	256,250	80,000	134,000	1,127,250

Budgeted cost savings over 5 years = £1,127,250