Policing, Digitalisation and Building a Data Driven Organisation:

Chief Constable
Andy Marsh QPM
Topics

- Body Worn Video
- Advanced Predictive Analytics & Visual Graphics
- Mobile Digital
- Robotics
Introduction to Avon and Somerset Constabulary

2700 Police Officers
2300 Police Staff

The core city of Bristol

Rural areas such as Exmoor

1.65 Million population
1,850 square miles
Body Worn Camera
Why Body Worn Video?

• Maintaining the trust between the public and the police service.
• Increasing evidence led prosecutions.
• De-escalation of public order incidents.
• Reducing Complaints.
• Providing best evidence from an independent source.
• Officer skill enhancement/career development.
• Improved personal safety of officers.
Body Worn Video
Benefits of Use

- Reduction in complaints – 66% reduction since launch.
- Reduction in Use of Force – 20% decrease.
- Public confidence – 7% increase.
- Keeping staff safe – 66% drop in days lost through injury.
- Earlier guilty pleas – 4% increase where BWV used.
The Context we are operating within...

Demand management

Staff wellbeing

Harm and risk

Budget cuts

Productivity

Partnership/collab
A typical Day for Avon and Somerset police...

2348 Phone Calls

2 Reported Missing People

mental health related calls

Police SeanUnderwood @sean_police · Nov 20
What a shift.
1 x sudden death (Not suspicious).
2 x medium risk juvenile #mentalhealth missing person's
1 x high-risk mental health missing person
1 x mental health person to negotiate of a high building.
All 4 persons eventually safely now getting help
The need to draw insight from large volumes of data

- 200,000+ offenders
- 139,000 recorded crimes per year
- 1.8 million ANPR hits per day
- 2 million+ persons
- 1 million+ locations
- 439,000 Calls for service per year
- Crime, Custody and Intel
- 890,000 Calls per year
- Call Handling
- Officer Airwave
- 90 Million+ officer GPS pings per year
- 5,500+ ARS Employees
- HR Information
- 3,000 recorded collisions per year
- Road Collisions

Predictive modelling and Visualisation
In **12 months** every part of Avon and Somerset Constabulary will be driven through **predictive analytics and visualisation.**

Smart Data creates **Smart Policing**
Past
Before self service analytics and insight...

- Static Spreadsheet/PDF Based Reports
- Only basic questions could be answered via reporting
- Not engaging for staff
- Limited ability to democratise insight effectively
Now
Dynamic, interactive and near real time Insight

- Dynamic, Interactive and near real time dashboards
- User driven diagnostic and predictive capability
- Engaging and empowering for all staff
- Business driven data democratisation at all levels

- Advanced analytics
- Cutting edge visualisation software (app based)
- Self-serve environment
- Near real-time
- Enterprise role out
- Built into operational processes e.g. tasking
- Boardroom to front-line
- Transformational
- Agile, low cost and high benefit realisation
- Presents significant savings opportunities
Democratising Insight

The critical people delivering our service! They are thirsty for insight to support day to day decision making...

Operational practitioners
First line managers
Problem Solvers

Operational Data

KPIs

Diagnostics

Executives
Analysts
Researchers

The privileged few, who cannot scale the required level of organisational insight.
Critical Operational Insight

Where are the current crime hotspots in my area?

Where should I be conducting proactive patrols today?

Where are the top demand locations in my area?

Which live crimes should I prioritise and review?

What does my team case workload look like?

Who are the top high risk unmanaged offenders living in my area?

What are my teams abstraction rates next week?
A ‘data-first’ culture and the importance of data literacy

This is not just about the technology, the journey also requires us to….

Create a culture and mind-set that is ‘data-first’, where data-driven thinking is at the core of everything we do – baked in to the DNA of the organisation at every level.

“Data literacy is the ability to read, work with, analyse and argue with data regardless of your role, skill level, or the tools you use”
Insight to Action

This

Through strong data driven leadership

Must convert to...

- Improved response
- Better service standards
- Reduced harm
- Reduced demand
- Efficiencies
- And so on.
The Benefits
Benefit Areas

- Understanding and reducing Demand
- Improved call handling productivity
- Better Problem Solving
- Tighter Offender / Victim Management
- Tighter Case Management
- Improving Data Quality
Our response to the number of calls relating to missing people and concern for safety from our local hospital trusts.

Qlik used by neighbourhood teams to identify themes and build evidence locally to support problem solving plans.

Led by a local Chief Inspector this project achieved reductions in demand from all six trusts in the force area:

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Concern for Safety/Missing Demand Storm Incidents % Change*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weston General Hospital</td>
<td>-22.2%</td>
</tr>
<tr>
<td>Royal United Hospital Bath</td>
<td>-9.5%</td>
</tr>
<tr>
<td>North Bristol Hospital (Southmead)</td>
<td>-16.7%</td>
</tr>
<tr>
<td>University Hospitals Bristol</td>
<td>-42.5%</td>
</tr>
<tr>
<td>Taunton Hospital (Musgrove Park)</td>
<td>-19.5%</td>
</tr>
<tr>
<td>Yeovil Hospital</td>
<td>-2.6%</td>
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*3 months data from Qlik Sense taken on 25 January 2019.
Technology and Creativity – Transforming an Organisation
## A&S IT Mobilisation Expenditure

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<tbody>
<tr>
<td>Laptops*</td>
<td>£30,000</td>
<td>£2,851,000</td>
<td>£202,000</td>
<td>£1,074,000</td>
<td>£4,157,000</td>
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<tr>
<td>Mobile Devices</td>
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<td>£642,000</td>
<td>£166,000</td>
<td>£2,081,000</td>
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<tr>
<td>BWVC</td>
<td>£997,000</td>
<td>£3,000</td>
<td>£313,000</td>
<td>£0</td>
<td>£1,313,000</td>
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<tr>
<td>IT Infrastructure</td>
<td>£644,000</td>
<td>£3,997,000</td>
<td>£257,000</td>
<td>£0</td>
<td>£4,898,000</td>
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<tr>
<td>IT Rollout</td>
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<td>£611,000</td>
<td>£576,000</td>
<td>£41,000</td>
<td>£1,228,000</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>£1,681,000</strong></td>
<td><strong>£8,725,000</strong></td>
<td><strong>£1,990,000</strong></td>
<td><strong>£1,281,000</strong></td>
<td><strong>£13,677,000</strong></td>
</tr>
</tbody>
</table>

*Includes expenditure on desktop replacement*
RPA at ASC; A case for automation in policing
Robotic Process Automation (RPA)

- RPA is software automation of business processes using a 'digital workforce' which can be trained to mimic the activities of business users.

- RPA has been explored by Avon and Somerset Constabulary through a recent Proof of Value, a project which has been a great example of bottom up innovation and process owner interaction.

- The proof of value has proven the RPA capability against key systems (Niche, DMS, SAP) and delivered several automated processes into non-production environments.

- Through detailed discovery work, the PoV has identified the potential benefits of deploying RPA technology at the force leading to a powerful business case for its implementation.

  - 12 opportunities, out of a total of 54 processes assessed, are estimated to deliver ~20 FTE back to the business if automated.

- As well as saving officer and staff time, other significant benefits have been identified.

  - Increased support to victims through more timely victim referrals and support
  - Improved data and intelligence for operational planning through automated linking
  - Improved compliance through improved data quality and accuracy
Use Case: Referring Victims of Crime to specialist support

Current process
Officers manually assign victims of a crime to a relevant Lighthouse Support Unit within the Crime Recording System (NICHE)
– Victims are then contacted by their nearest Lighthouse centre and offered the appropriate support
– Volume; approx. 4100/month almost 50,000/year
– Officer Time per case; 3 minutes

Key issues
inconsistent referrals leads to
– missed SLA
– significant backlog in Niche
– impacts victims who may experience a delay in receiving the appropriate support

RPA Process –
Robot will work through central database assigning victims to a relevant Lighthouse Support Unit within NICHE based criteria set by Lighthouse team

Benefits
– Officer hours saved per week – 45
– Increased compliance against the statutory regulation from Ministry of Justice to assign victim within 48 hours
– Lighthouse Support Unit have greater visibility of the workload and can prioritise accordingly
– Victims receive a more timely service from the force
“When you two have finished arguing your opinions, I actually have data!”

Questions?