



Analytics for Government

Better decisions,
smarter policies at less
cost and risk.

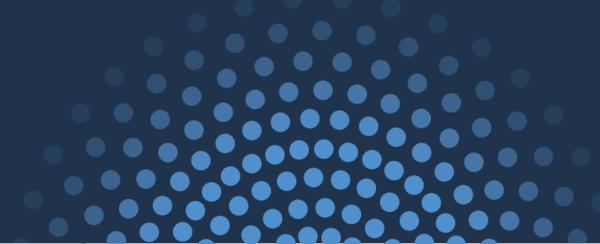


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Executive Summary

The UK Government is facing a period of unprecedented change. While entering a new phase of reducing the national debt without eroding the viability of essential public services, it must also bring the UK's exit from the EU to fruition.

Government departments are tasked with balancing the requirement to save money with the need to provide frontline services to a growing, ageing and diversifying population. Having made most savings through traditional methods, such as refining procurement and cutting resources, almost every department must now seek more innovative ways to pinpoint value-adding costs and cut those that inhibit reform or erode public value.

Part of that reform can be expedited by accelerating the provision of digitally enabled services. Doing so will also generate new volumes of rich data. These can be integrated with existing information sets and used as core evidence for leaders to make better informed - and therefore a greater number of 'right' - decisions, quickly.

The government recognises the need to completely reform the way the public sector operates, and the central role that improved information management will play. However, government departments still lag behind the private sector when it comes to information management and the sharing of insights. The Government must urgently review the ways in which it collects, analyses, exploits and shares information and insights, internally, cross-government and with businesses and the public.

Organisations from a range of sectors have embraced business analytics to help them understand their customers and optimise their performance. In particular, organisations are using analytics to take a more proactive approach to forecasting future demand, assessing the best course of action, reducing risk and improving outcomes. It is precisely this insight that the public sector requires if it is to manage the savings required by the ongoing Spending Reviews, without sacrificing the fairness or the services that the taxpayer deserves.

Reforming departments can learn from examples of best practice from across the private sector, and some from within the public sector too. This paper includes examples of SAS® Analytics helping organisations to increase revenue, minimise risk, better focus resources and even save lives. We also provide a roadmap to help departments as they evolve, drawing on the lessons learned by organisations that are already feeling the benefits of adopting a strategy around predictive analysis.





Introduction

Charting a safe course for a secure, prosperous and healthy UK in a time of unprecedented complexity.

Central government departments are facing one of the most disruptive periods of change since World War II. While still recovering from the recession of 2008 and delivering vital operational efficiencies and financial savings, the public sector is also tasked with 'making Brexit happen' successfully.

What this means is delivering a new way of operating in the world and a new way of working with our partners. Yet how can the civil service know how best to serve an as yet unknown future? This involves de-risking mission critical decisions; modelling negotiation strategies and policy outcomes at speed; and serving up next best actions when certain avenues are closed, as they may well be in such a complex period of discussion.

However, as important as analysing the Brexit situation is, central government departments must also continue with business as usual – continuing to drive public service reform, deficit reduction, fairness in society and economic growth – while meeting the ever-growing demand for services and resources.

Brexit aside, many of these challenges are not new to public sector organisations across the globe. What's different is the speed and complexity of the political, economic, demographic and security landscapes they must navigate – making wrong decisions more likely.

In the private sector, businesses across all industries are successfully managing to wrangle the same need to 'do more with less'. They too must uncover smart new ways to achieve this end goal without exposing their organisations to undue risk – and they manage to do so by grounding decision-making in real-time, context-rich evidence.

When it comes to reforming the services they offer, they deploy relevant technology to understand their customers' changing needs and to deliver services seamlessly through an appropriate mix of channels. The public sector has already begun the journey to reform. However, it can still learn much about digitalisation from the experiences of the private sector in order to accelerate the rate of digital rollout and citizen adoption. Also as a means to reduce costs, accelerate processes and gather more information about service users to create a positive feedback loop of improvement.

How well equipped is the public sector to meet the challenges of today and deliver a prosperous post-Brexit future?

All government departments need to test their thinking; de-risk operational, real-time decisions; and more accurately plan for future needs as different forces impact the socio-economic landscape. All of which means they must have the tools and capabilities to make precise decisions at speed, using reliable data. Two factors are key here:

- 1. Public sector organisations can and should collect a wider range of data than they did even two years ago**
- 2. Insights gathered should be shared across collaborating government departments and agencies**

Why so? Because the richer the data, the more precise the insights and the better the outcomes. Imagine the Department for Transport (DfT) being able to expand the scope of public consultation on proposed new airport infrastructure by gathering opinion via social media and verbal interviews in addition to its online response forms and consultation events. This would provide much deeper and more nuanced understanding of public sentiment towards the proposal and give the DfT the ability to quickly analyse feedback on any future iterations of the proposal, using repeatable, cost-effective methods.

Secondly, such insights should always be shared with associated departments. In the instance above, DfT evidence should be shared with the Department for Exiting the European Union and the Department for Business, Energy and Industrial Strategy, both of which have a stake in any international transport developments.

Today, there is a remarkable opportunity to improve the way government operates. In fact, the Digital Economy Bill makes provision, amongst other things, for the support and enablement of public services using digital technologies. Accelerating digital government programmes CSR, notably reforming services, driving fairer access to government resources and generating additional savings through efficiencies. However, the quality of government data must also improve, if more accurate insights are to be drawn from it through advanced analytics.

Into a new value-based approach to efficiency gains

Advanced analytics opens the door to a new era of efficiency gains. How so? Having come to the end of a long and controversial period of cost savings that has largely involved improving procurement and cutting back on real estate and resources, government must ask how it will approach the next phase. How will it make those savings and reforms without cutting services so much that they no longer provide meaningful support to UK citizens?

The business world is adopting advanced analytics to help it pinpoint spending and savings priorities – bad costs (activities that are negative or add limited value) and good costs (activities that are essential or add value).

All of this important work is already underway. The following public and private sector case studies demonstrate levels of reform and efficiency that have already been achieved as a result of deploying advanced analytics to help solve some of the most pressing issues facing business and government departments.



Case Studies

Delivering meaningful transformation: The benefits of foresight over hindsight

In the book *Competing on Analytics*, Thomas Davenport and Jeanne Harris identify a range of companies which turned superior use of information into their main competitive advantage – including industry leaders Amazon, Dell, UPS, Proctor & Gamble, Honda and Tesco. Through building strategies on data-driven insights, these information-savvy firms can better identify the true drivers of financial performance, target their best customers, accelerate product innovation, optimise supply chains, etc. And, these information-based strategies have generated impressive business results.

The authors drew particular attention to the way these information pioneers make use of not only traditional business intelligence software, but also advanced analytics. The distinction is one of hindsight versus foresight. Traditional business intelligence provides better and faster hindsight by improving the quality and integrating historical data. This ability to understand what has happened is vital – particularly in the public sector, where the absence of reliable baselines and benchmarks still hampers performance. But the fact remains that hindsight can only enable organisations to improve their reaction time to what has already happened. And, in this fast-changing world, what happened in the past is becoming less reliable as an indicator of what will happen in the future.

The science of prediction made simple

In contrast, advanced analytics provides these top-performing organisations with both insight to understand why things have happened, and the foresight to predict what is likely to happen next. This enables them to plan the best course of action, reduce risk and improve outcomes. Put another way, these firms recognised the competitive advantage of being proactive, rather than just reactive.

The most forward-looking organisations understand that to maintain that advantage they have to accelerate their 'speed-to-insight', arriving at new intelligence before their competitors – or in the case of government organisations, before circumstances change and other players take the lead. These also know that the richest, most accurate and therefore the most valuable insights can be arrived at when those insights are steeped in contextual information. Either way, the ability to analyse real-time data is now key. Think about the advances that could be made in policing and anti-terrorism if video surveillance could be analysed in conjunction with social media feeds on a near real-time basis.

McKinsey & Co. estimates that by digitising information, disseminating public data sets and applying analytics to improve decision making, governments around the world can act as catalysts for more than \$3 trillion in economic value. It should come as no surprise, therefore, that some enlightened public sector organisations have already begun to adopt the best practices of the private sector to improve their information management and exploit this precious asset.

The following case studies provide pointers for wider reform across the whole public sector.

Reactive Hindsight versus Proactive Foresight





Increasing revenues by preventing fraud and error: Taxation

With the tax gap sitting at around £34 billion, preventing error and fraud – reported to be hitting the £16 billion mark – remains a key priority for the Government and HMRC.

Following the Spending Review of 2015, HMRC was tasked with making £717 million of sustainable resource savings a year by 2019-20, much of which would be delivered through digitisation of tax collection and a smaller but more highly skilled workforce. In fact, £1.3 billion has been reinvested to transform HMRC into one of the most digitally advanced tax administrations in the world, with access to digital tax accounts for all small businesses and individuals by 2016-17. This measure is projected to deliver an additional £1 billion of tax revenue by 2020-21.

HMRC and the Department for Work and Pensions (DWP) adopted predictive analytics to fight fraud.

- **HMRC's Connect system**, which includes SAS advanced analytics, has allowed them to integrate and analyse numerous separate data sources and to segment the UK population and identify patterns of behaviour. Those patterns indicate things ranging from simple errors, to people who need more support complying with their tax obligations, to those deliberately evading tax. HMRC also uses Connect to assess whether repayments are necessary and eligible claims can be processed faster. In the period to 2008/09, the implementation costs totalled some £18.8m, while increased yield was £572 million – a remarkable return of 30:1. By the end of 2012, the system had returned extra tax yields of £2 million. HMRC has a similar predictive analysis application to detect corporation tax fraud, which is expected to deliver even higher ROI.

Using predictive analytics has been so successful that according to the Single Departmental Plan 2015-2020 for HMRC, the department has secured an additional £100 billion in additional compliance revenue as a result of actions taken to tackle evasion, non-compliance and avoidance.

- **The DWP system**, Centric, used SAS Analytics to enable a single customer view across the DWP, HMRC and Local Authorities highlighting inconsistencies between income and benefits received. As a result, the system is also effective in reducing error, estimated by the DWP to account for double the losses caused by fraud. As a result of the investigation, HMRC and DWP produced a joint strategy to fight fraud and error.
- **Looking to the future** HMRC's new agreement with SAS creates a modern Enterprise Data Hub, enabling all parts of the department to work on common data sets across many activities from analysing economic policy to debt collection.

In Ireland, the Irish Tax & Customs Authority needed a more effective and affordable way to predict and prevent fraud.

- SAS gave them a way to combine multiple analytical techniques – from supervised to semi-supervised to unsupervised – to score the likelihood of fraud, even for people or organisations that have no history of previous offenses.
- Likely cases can be prioritised depending on the level of risk and the investigative resources required. Data can be fed back into the models to reduce the number of false alarms and missed cases. So successful is their model that the Irish Tax & Customs Authority now uses it in real-time transactional environments.

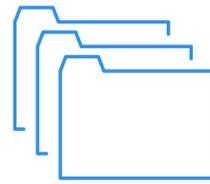
Enhancing customer insight and cost-effectiveness: **Welfare**

By deploying advanced analytics the retailer Shop Direct has won industry awards for the depth of customer insight it deploys to create groundbreaking personalised customer experiences. With SAS analytics the online retailer now has a smarter way to manage, process and analyse big data. What this delivers is a much deeper understanding of customers in order to create extremely personalised online experiences that can be adapted in a real-time environment, driving more cost-effective sales. The firm's group sales rose three percent to £1.74 billion. Its pre-tax profits grew 512 percent from £6.6 million in 2012/13 to £40.4 million. Perhaps the most important indicator of success is that 84 percent of sales were completed online.

Similarly, Tesco uses advanced analytics with its Clubcard data to analyse millions of shopping baskets a week. The result is a better understanding of customer behaviours, which informs decisions regarding product lines, store locations and special offers. Since its introduction, Clubcard holders have accounted for around 80 percent of sales, the response rate to targeted offers is over ten times the average for direct mail – and Tesco's sales have increased by 52 percent.

In the same way, DWP has used SAS advanced analytics supported by experts from SAS to gain deeper insights about its customers and to support other operational areas, quickly and significantly increasing ROI.

One such area is detecting internal fraud. By automatically analysing DWP employee behaviour and their interaction with data resources the organisation has saved over 400 man years since deploying SAS analytics, equating to £12 million per year. The organisation has also created a single unified data warehouse and can now provide evidence of compliance to DWP's Senior Information Risk Governor.



Developing pension policy

The Pensions Service within DWP has made similar use of SAS advanced analytics to improve insight into the needs of around 15 million pensioners and pre-pensioners. Faced with an ageing population and decreasing budgets, the Pensions Service has used SAS-led 'Customer Insight Engine' to identify short-term demands on resources, and target marketing campaigns designed to encourage pensioners to switch to lower cost channels. The system allows policy analysts to assess the distributional effects of possible changes to pension policy and their likely impact on specific groups of individuals. Because the model delivers a 100-year view into the future, teams can better understand the financial situations of future generations of pensioners too.



Policy simulations

When introducing a new type of benefit, analysts don't always have access to historic data in order to map the potential impacts of policy change during and after transition. SAS technology has been employed in the development of a microsimulation model that allows analysts to make assumptions about who might move onto a new benefit based on insights derived from those on the current system and other external data sources.



Preventing fraud and errors

In addition, development of Centric – a cross-departmental view of customer data built on a rules-based selection and referral process – now pinpoints internal errors as well as citizens suspected of making claims for benefits to which they are not entitled. The number of potential referrals for investigation currently stands at 1 million per week, prioritised in terms of revenue impact. Using this system DWP is also supporting greater fairness by identifying those who are not receiving the benefits they require.

It's also a highly agile system, where new rules can be created in a few weeks rather than the previous three to six months; thereby transforming ROI. In terms of driving cost-efficiency by supporting repeatability and making the system easy to use for more employees, SAS Education created a bespoke training course for the organisation.

In addition to these projects, DWP has also used SAS advanced analytics to evaluate the effectiveness of many of its services and activities, including Job Centre Plus back to work programmes and child maintenance.

Improving risk management and resource optimisation to save lives: **Public Safety**

The London Fire Brigade (LFB) has adopted a similar approach to integrating external data with its own and using SAS predictive analytics to optimise performance. Internal records of where fires have occurred in the past are now integrated with a range of external data – including census information, land use and lifestyles – to produce ‘future fire risk’ maps of London. The maps inform budget allocation and enable the LFB to target its limited firefighting and preventative resources to the buildings and people most at risk.

Using SAS Analytics literally avoids the need for expensive and high risk ‘fire fighting’ across the London area.

The Irish Probation Service, with 10,000 cases on its books at any one time, has been able to analyse the outcomes of its interventions, research new strategies and collaborate with other justice agencies using SAS. All of which has the net effect of improving the risk of crime to local communities. Because many of the data harmonisation and reporting capabilities can now be automated, the organisation can spend less time on manual data gathering and much more time on strategic objectives such as analysing the factors that affect reoffending and the long-term outcome of sanctions.

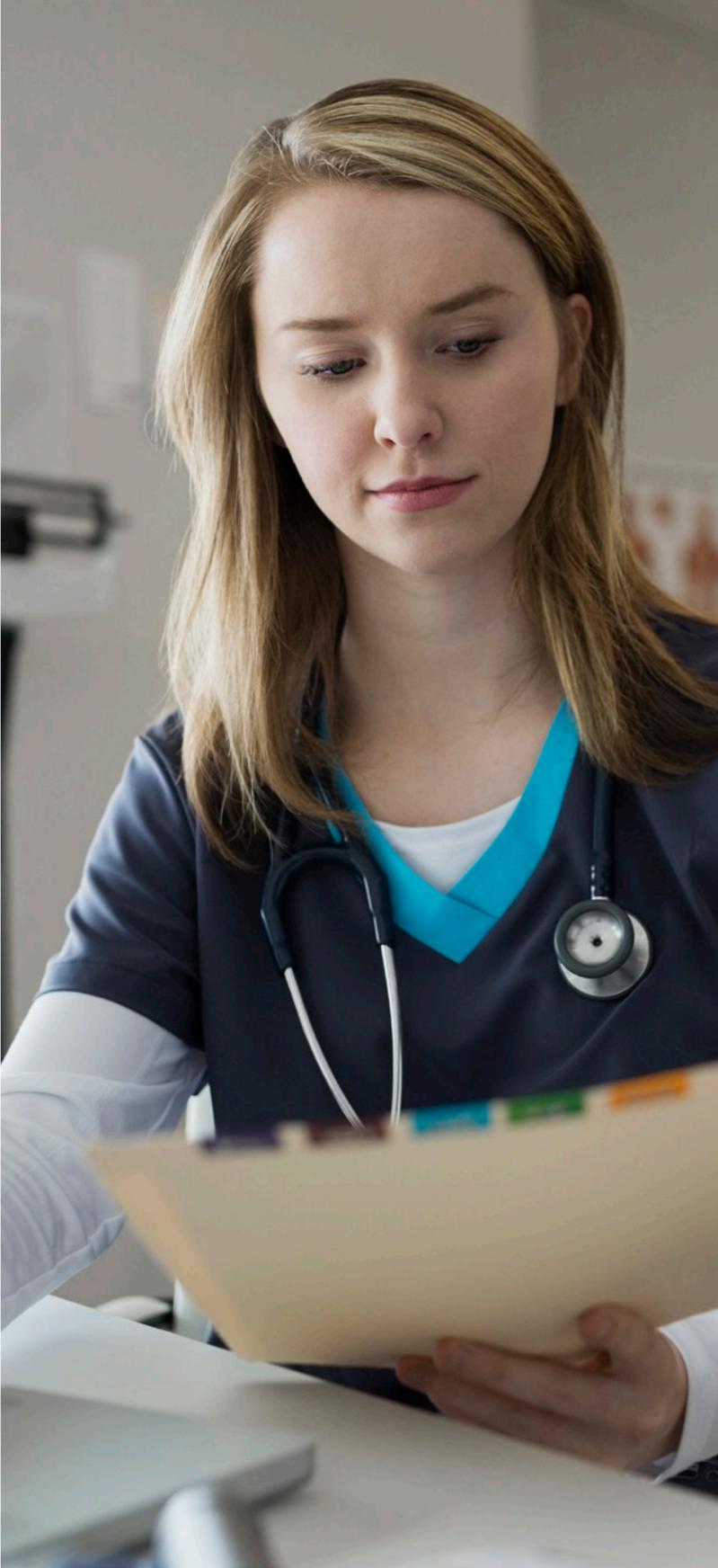
In the private sector, for example at Waitrose, optimising performance means assuring stock availability and optimising customer service, while holding the minimum stock possible and reducing waste. Recognising that the use of internal, historical sales data alone was limiting its scope to predict stock requirements moving forward, Waitrose has added external data to the mix, including: weather forecasts, upcoming sporting events and TV schedules. By applying SAS predictive analysis, the supermarket has been able to reduce its stockholding and waste by eight percent and four percent respectively, and decrease order amendments by 40 percent.

Similarly, one of the UK’s biggest commercial television providers uses SAS analytics to analyse in real time the risk of customers dropping their subscriptions. What is even more interesting is that the firm’s contact centre associates can customise products packages to meet the tastes of customers. This has the effect of driving satisfaction and minimising the risk of customer churn.



“We are the first brigade to use such sophisticated analytics... SAS software enables us to prioritise and understand risk [and] base our decisions on real facts, rather than second guessing. As a result, we are preventing fires and saving lives.”

Andy Mobbs, Risk Information Manager, LFB



Optimising performance to improve outcomes: **Health**

NHS Blood and Transplant

Despite the government's commitment to ring fence health budgets, the reality is that a growing, ageing and diversifying population means pressure on the limited resources of the NHS will only grow. To achieve the necessary efficiencies, without compromising frontline services or fairness, will require a radical transformation in the way the NHS operates. This overhaul is already underway with NHS Blood and Transplant (NHSB&T), one of the first public sector organisations to understand the importance of an evidence-based strategy, supported by SAS advanced analytics.

The challenge faced by NHSB&T is optimising its performance to meet growing demand, and to do so both equitably and transparently. For this department, the consequences of making the wrong decisions can be fatal and, with demand outstripping supply for donated organs by over 230 percent, the margins for error are extremely limited. Accurately matching donors to recipients, and maximising the chances of success, involves assessing probabilities and risk across multiple variables, including blood group and tissue type compatibility, size, waiting time and clinical need.

The complexity and speed of the decision-making required continues to increase rapidly as science and new practices develop. In addition, the NHSB&T must at all times ensure and demonstrate fairness of access in terms of both geography and demographics, so all patients have the same chance of treatment and quality of life.

Using SAS advanced analytics, the NHSB&T's raw data is properly validated and corrected, and is then subject to complex analysis to understand the multiple factors that influence survival rates, waiting times and donor consent. Detailed comparisons of performance between Transplant Units – taking into account the variation in their patient mix – can also be used to understand and correct fall-offs in performance at an early stage. Also, the insight is used to predict demand and plan, to ensure the right theatre capacity and surgeons are available in the right place, at the right time, to optimise the number of transplants.

Royal Brompton & Harefield NHS Foundation Trust

From its base in London, Royal Brompton & Harefield NHS Foundation Trust provides cutting-edge treatments to people with heart and lung disease. With growing demand for its services, the organisation needed to find a way to minimise risk to patients from post-operation infections.

The Trust has integrated clinical systems with SAS and data concerning infections into a single data pool. Physicians can analyse data directly from lab results, and automatically generate graphs to study infection patterns, developing best practice principles to aid recovery rates and so that patients can be discharged faster. This frees up beds, increases throughput and cuts the cost of every patient stay.

Other use cases for SAS analytics at the Trust include assessing bed occupancy patterns; helping A&E staff to evaluate treatment options and risks in complex cases; automating reporting for its intensive care unit; and determining optimum treatment plans to avoid the undue risks that can occur when exposing patients to inappropriate or unnecessary interventions.



Protect and defend by predicting and preventing: **National Security**

The national security agencies manage a diverse and fast-changing set of risks and challenges. Terrorism, climate change, inequalities in natural resources, cybercrime and reduced control of critical national infrastructure are just some of the challenges the agencies must overcome to ensure the safety and prosperity of their countries.

Meeting these challenges, while juggling budget cuts, will require a more joined-up, preventative approach across defence, the police, intelligence, border agencies and the private sector - both within the UK and internationally. To succeed, a step change is needed in the way these organisations manage, share and exploit their information.

Although this shift towards more intelligent use of information has been heralded in high-level strategy documents for some time, the implementation has so far been patchy - concerns around poor planning, overspend on procurement and failures within the MOD have highlighted.

There are numerous examples of national security organisations around the world that are using SAS Analytics to transform their performance and save lives:

- **A European border agency collects and analyses information on all people who travel to or from their country by air, rail or sea. The agency is therefore better equipped to spot potential security risks and intervene, sometimes before the risk even reaches the country.**
- **A US national agency integrates and analyses a range of data to identify the operational, financial and social networks involved in the deployment of improvised explosive devices (IEDs). In Iraq, this work has resulted in the significant reduction in the number of IED incidents, deaths and injuries.**
- **A US military operation uses predictive analysis to identify unusual patterns of activity to detect and prevent cyber attacks on mission critical systems.**
- **A European Commission project integrates, analyses and shares forensics and ballistics information from across all member states to provide a joined-up approach to fighting international terrorism and crime.**

Each of the above initiatives represents the foundations of a more agile and efficient national security.

Working with an ever-changing set of circumstances and learning how to leverage data to predict future outcomes is something that the GB Rowing Team could teach the national security services a little about. The team uses SAS to collect a wide range of data from an even broader number of personnel and training and competitive environments, using predictive analytics to identify performance peaks, injury risk and to uncover the marginal gains that will really make a difference to the team's mission. This analytical capability is something that was relied upon to help deliver the medals of the 2016 Olympics.



“SAS gives the British Army a much greater insight into vast volumes of information held within their systems. By sufficiently aligning and simplifying the data, the British Army now has the power to make better-informed decisions about manpower planning, driving efficiencies and new opportunities for innovation.”

Simon Dennis, Client Director, Government, SAS UKI

Allocating resources fairly to drive up efficiency: **Defence**

Supporting, organising and deploying more than 200 trades – from Infantry and signaller to engineers and plant mechanics – is both a complex and time consuming task for the British Army.

So the organisation has deployed SAS to analyse and more efficiently allocate manpower and resources. The initiative has initially saved UK taxpayers more than £20 million while ensuring these armed forces are suitably resourced to fulfil their roles.

With significant volumes of data about personnel, including their skills and experience, spread across the organisation, SAS data analytics solutions can provide the British Army with valuable insights into available resources as well as optimise and improve valuable information.

Using advanced analytics the army has been able to realign expenditure and reduce waste to a total of £770 million.

Smart policing takes shape

Project ATHENA, a joint venture between West Yorkshire Police, Sheffield Hallam University and other public sector organisations is helping the force to respond more effectively to a crisis.

The team has developed a mobile app that allows citizens to write their own report about an incident, add voice recordings or stream video and send it to police. By combining sophisticated analytics with social media listening and advanced text mining the police can make better decisions about how to respond to crises.

Babak Akhgar, Professor of Informatics and Director of the Centre of Excellence in Terrorism, Resilience, Intelligence and Organised Crime Research (CENTRIC) at Sheffield Hallam University, put it best when he said: “The SAS solutions enable us to sift through enormous quantities of data extremely quickly, so we can cut through the noise to the critical facts. Quickly capturing all information relevant to a specific incident will help emergency services build situational awareness rapidly.”

Better understanding fast changing situations and deploying resources for maximum effect is a finely tuned capability in many private sector firms. For example, Barclays Bank uses SAS advanced analytics to improve sales efficiency, optimising proactive decision-making related to sales activity and business management. This allows the leadership team to clearly see how the business is building via its sales team’s performance and by identifying possibilities to more effectively deploy its people.

In a similar way, the Royal Bank of Scotland deploys advanced analytics to identify valuable customers that its business managers should focus on, which helps to focus resources more effectively and deliver an enhanced level of service to engaged clients.



The roadmap to public sector reform

These examples have illustrated how SAS Analytics can underpin a smarter, inventive and more proactive approach to reforming public services and optimising performance - even in the face of ongoing cost cutting and increase demand. Each organisation is at a different stage of its journey. But all are united by their adoption of better information management practices to improve efficiency and to protect or even improve frontline services.

It should now be quite clear that a lack of good quality, non-siloed information is a key reason for inferior planning and significant financial waste in the public sector. Making knee-jerk decisions that deliver short-term cost reductions can actually result in higher overall spending, or leave organisations exposed to increased risk of being unable to operate effectively and deliver the right services to the right citizens.

Government would like departments to wholeheartedly embrace a data-driven decision-making strategy instead, leveraging fresh, accurate 'evidence'. It highlights that this approach is vital to ensure that government departments have the information to perform optimally today and in the future, and to embed continuous improvement and efficiency into 'business as usual' – not just as a response to budget constraints.

All of this can be achieved using technologies that improve departments' ability to evaluate and compare costs, to model policy outcomes and to conduct comprehensive risk assessments. Advanced analytics can help decision-makers to understand cost and value-drivers, and proactively influence future demand. SAS solutions can work alongside other open analytics software to help drive ROI from existing investments. It will also gain cost efficiencies from analytic repeatability – rather than reinventing the wheel in order to answer every new policy or operational question.

But how can the public sector embed the use of data analytics and ensure department-wide buy-in? We can learn from the examples already given previously, because they do share several common themes that will provide you with some important clues to the critical success factors.



1: Quantify

The vital first step is to gain senior level commitment to exploring the opportunities and benefits available – as well as the risks involved with retaining the status quo. For example, leadership commitment was achieved in the area of fraud simply because the NFA had been able to clearly quantify the size of the prize.



2: Demonstrate

Buy-in is often achieved through senior executive workshops, which help to bring the benefits of analytics to life. SAS has supported HMRC in the creation of a Data Lab, with the aim of spreading best practice and promoting greater use of predictive analytics across HMRC and the wider government. It's helpful to identify the information and applications that will provide the biggest wins in the short-term, as part of a longer-term approach.



3: Benchmark

Workshops should involve learning from best practice in other industries. SAS helped the NFA to benchmark with numerous customers from across banking, insurance and the public sector. Similarly, SAS runs a range of forums and events to encourage this practice as standard.



4: Cultural Shift

The leadership teams that have done the most to optimise performance in the shortest time often share two or three common 'light bulb' moments:

- **Go the extra mile:** Business intelligence was originally adopted to comply with mandatory reporting and legal requirements, but it has come a long way since then. The first step to reform is often making a virtue out of necessity; realising the enormous potential of management information to transform the very performance that is being reported on.
- **Prevention is better than cure:** The next stage is recognising the importance of foresight, and its strategic advantage over hindsight. The adoption of SAS' proactive 'predict and prevent' approach has already been critical to optimising the performance of limited resources: transforming productivity, increasing revenues and improving public safety.
- **Birds of a feather stick together:** The realisation that your organisation is not unique, and that many others in the private and public sectors have been wrestling with the same fundamental problems, is key. This frees decision makers up to adopt best practice 'commercial off-the-shelf' analytics solutions and processes, which often result in much lower implementation costs and faster ROI.



5: Coordinate and Share

Many SAS customers are realising the benefits of linking with other organisations within the same ecosystem to share experience and explore 'system-wide' benefits. For example, HMRC and DWP have agreed a joint counter fraud strategy and are establishing a shared 'risk and intelligence unit'.



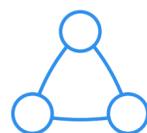
8: Consolidate

Better business intelligence allows organisations to consolidate information management staff and tools - thereby reducing duplication and exposing gaps in resources. The key here is adopting a long-term 'solve and evolve' model, rather than a 'rip and replace' approach, i.e. exploiting existing business intelligence software investments. Tools can then be gradually rationalised towards a fully integrated and agile predictive analytics system.



6: Audit

Successful reform starts with understanding what information your organisation has, where it is, who holds it, what condition it is in and assessing what issues and gaps there are. The SAS white paper [Unleash the Value of Public Sector Data](#) is a great place to begin; it outlines how to create an information asset register and includes research into the rationale and business benefits of Business Analytics Competency Centres (BACCs).



9: Partner

To reduce initial costs and overcome skills shortage, public sector agencies should seek best-in-class private sector partners. This could involve shared services or an as-needed Software as a Service (SaaS) relationship. Or they could follow the example of HMRC and DWP, which have looked at risk/reward partnerships based on increased revenues generated by reducing tax evasion and benefit fraud.



7: Build Trust

Information must be cleaned and integrated to demonstrate its value and build confidence throughout an organisation. A large UK police force adopted a quick win approach to demonstrate the operational benefits of improved data quality. In less than a year, they had transformed from having one borough in 32 being rated as excellent and 14 rated as poor, to none being rated as poor and 14 as excellent.



10: Create Centres of Excellence

Once businesses have accepted the pivotal importance of improved information management, many also agree the need for a new governance and organisational model; this leads them to set up a dedicated Information Management Centre of Excellence or BACC. Given the shortage of skills, tools and funds in the public sector, it is recommended that smaller to medium sized organisations pool resources and share these centres of excellence.

As the case studies have demonstrated, we are all on a journey that, increasingly, public sector organisations will have no choice but to make if they are to deliver the front line services taxpayers deserve and expect.

About SAS in the Public Sector

SAS has over three decades of experience working with the public sector and more than 100 public sector customers across the UK. Its powerful government analytics software and services solutions enable government organisations to mitigate the risk of failure, optimise performance and accelerate the deficit reduction to ultimately provide a better service for citizens at the lowest possible cost for taxpayers.

SAS helps public sector organisations to run and defend the country, target benefits, prevent crime and increase the quality of life for citizens. It does this by cleansing, integrating and securing data to extract knowledge that supports public sector managers, policy makers and frontline service staff.

Get a deeper understanding of our capabilities and gain further insights about how SAS can support public sector reform.

www.sas.com/uk/public_sector

About SAS

SAS is the leader in analytics. Through innovative analytics, business intelligence and data management software and services, SAS helps customers at more than 83,000 sites make better decisions faster. Since 1976, SAS has been giving customers around the world THE POWER TO KNOW®.



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