Business Lead
Data Quality

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Contents

● Context
● The Journey
● The Lessons
● Questions
Context - The Armed Forces
Context - The Armed Forces

- c170,000 serving, many 100,000s on pensions
- 50 nationalities that include Foreign & Commonwealth, and 54 religions
- Regular & Reserve, based on Career model
- Geographical spread – whole world, including areas with no mobile/internet coverage
- Operational focus paramount
Context - The Armed Forces

● Personnel data:
Context - The Armed Forces

- Personnel data:

  **MYTH No.1:**
  It’s not that complicated; what’s all the fuss about?
Context - The Armed Forces

- Personnel data:
  - 17 ranks x 3 (three services Army, RN and RAF)
  - 250 Career Employment Groups (Army) paid differently
  - Language: Private, Gunner, Paratrooper, Kingsman, Rifleman, Sapper, (Air) Trooper, Guardsman, Bugler, Signalman, Ranger, Fusilier, Musician, Driver
  - Lance Bombardier, Lance Corporal, Lance Corporal of Horse, Lance Serjeant

- Personnel costs accounts for 27% of the Defence budget, 74% of the Army budget
Context - Introduction of a New System

**MYTH No.2:**
In the Armed Forces, just tell people what to do and they will do it
Context - Introduction of a New System

- 2007: three bespoke independent (1960s) systems combined into single tri-service COTS system: Joint Personnel Administration (JPA)
- Predicated on loss of 667 admin staff
- Added new appraisal system and new allowance system at the same time
- Language: absence; termination; employees
- Culture change: individual responsibility
  - Lack of investment in training
  - Lack of user understanding of wider importance of data
  - Cultural scepticism / hostility to new system
Context — Boils Down To:

- A business which:
  - Is hugely complex
  - Has bought a new COTS system – JPA
  - Had no understanding of the importance of data
A quiz – Which is the odd one out?
The Journey

- The problem
- The first attempt at a solution
- A realisation there was a much better way
- A fresh start
- What we are doing now
The Problem (1)

In April 2008, the Army faced:

- Inaccurate or missing data since the new system was rolled out in 2007
- Inconsistent data between people and positions; anomalies between manpower accounting and resource expenditure; lack of detailed information
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MYTH No.3:

Just fix the computer system and it’ll all be fine
The Problem (2)

- Lack of understanding of the centrality of personnel data – in an organisation whose capability is its people.
- No data owner identified
- Stovepipe approach to data quality to support individual processes:
  - Career Management
  - Personnel Administration
  - Manpower Planning and Accounting
The First Attempt at a Solution

- Doing Stuff – actions obscured the lack of understanding
- Data Correction Teams
- Issues identified but:
  - Piece-meal, with no central co-ordination
  - No overview of impact, complexity and risk
  - No root cause analysis: the same problems reappeared every month
- JPA – optimised for administration, not data
- No single owner
- No holistic approach
Initial Data Governance

Seminal Moment:
Someone from the business needs to be responsible
Initial Data Governance

- Data owner appointed

- Action Plan launched to address the quality issues in four concurrent stages
  - Identify data issues, scale and complexity
  - Analysis, and prioritisation of remedial actions
  - Implementation of remedial action
  - Monitor & maintain data quality
A Better Way

- We realised we were scraping away at the margins
- Two major projects, supported by industry, were initiated in Feb 09:
  - **Cure** - Data Quality Assessments:
    To develop and test a technology enabled process to monitor, improve and maintain data quality
  - **Prevention** - Data Management Organisation:
    To design the Army Personnel Data Management Organisation
A Better Way

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This showed how data quality issues could be managed effectively, top-down, with analysis of impact and root causes
Why two concurrent projects?

Prevention and Cure – at the same time:

- **Cure** - (managing data quality)
  - Issues management
  - Data audits
  - Data cleansing

- **Prevention** - (creation of the Army Personnel Data Management Organisation - APDMO)
  - Data Governance
  - Knowledge Management
  - Matching information supply and demand
How to run before you can walk

**MYTH No.4:**
You need Data Governance in place before you start delivering value
How to run before you can walk

How can you start fixing data quality before you have got the organisation in place?

- Start with a proof-of-concept on a critical subject area
- Identify the business experts who care about data quality (these will probably end up being your Data Champions / Stewards / Owners anyway)
- Capture the known DQ issues in a Register – and get on with it!

Data cleansing without Root Cause Analysis

- HOW COULD YOU!!
- Significant benefit If Properly Managed
- Don’t do it until you can monitor the results
How to run before you can walk

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DQ Management is bound to be a part of the solution, so why wait – just get on with it!
Data Management Team’s initiatives:

(1) Data Quality Issues Management

- Identify Issues
- Log
- Analysis
  - Root cause analysis
- Prioritise fix
- Fix
- Monitor
Data Management Team’s Initiatives: (2) Profiling and Analysis

Contract Types

1. Data quality of the Contract Types on primary assignments for all personnel in JPA.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Sep 2009 (-total-</th>
<th>Oct 2009 (-total-)</th>
<th>Nov 2009 (-total-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Contract Type Errors</td>
<td>perc</td>
<td>perc</td>
<td>perc</td>
</tr>
<tr>
<td>Contract Types for Regulars Errors</td>
<td>perc</td>
<td>perc</td>
<td>perc</td>
</tr>
<tr>
<td>Contact Type for Reservist Errors</td>
<td>perc</td>
<td>perc</td>
<td>perc</td>
</tr>
<tr>
<td>Contact Type for Officer Errors</td>
<td>perc</td>
<td>perc</td>
<td>perc</td>
</tr>
</tbody>
</table>

Details (1)
- The most significant issue is that the Contract Type is not present on XXX occasions for the primary assignments.
- There are XXX Gurkhas with non-Gurkha contract types. The majority of the Contract Types for this case are ARMY-OE. There are XXX Soldier Contract Types for non-soldiers where the NATO Rank indicates they are OF0 or OF1 on either ARMY-TYPE O or ARMY-OE contract types.
- The biggest problem with reservist contract errors is that XXX Reserves have non-reserve contracts. There are also XXX soldiers with TA group B contracts who are not in OTCs.
- There are XXX Officers with non-officer Contract Types XXX have contract types of ARMY-TYPE O).

Details (2)
- A Contract Type should never become ‘not set’. This shows that Contract Type errors are being introduced.
- A Contract Type should never become an obsolete type (i.e., a contract type which is no longer used). The main obsolete Contract Types which have been introduced during this period are ‘ARMY – TA’ and ‘ARMY – TA’.
- A Contract Type should never become a deleted type (this is a contract which is marked for removal). This shows that Contract Type errors are being introduced.

Impact
- Inaccurate reporting of the primary contracts that personnel have.
- Inaccurate reporting of the strength of the different parts of the TA (Group A, B and C).

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Green: Data is fit for purpose but not necessarily perfect
Amber: Data is not fit for all purposes but may be usable with suitable caveats
Red: Data cannot be used for its intended purpose(s)
Gentlemen,

Whilst marching from Portugal to a position which commands the approach to Madrid and the French forces, my officers have been diligently complying with your requests which have been sent by H.M. ship from London to Lisbon and thence by dispatch to our headquarters.

We have enumerated our saddles, bridles, tents and tent poles, and all manner of sundry items for which His Majesty's Government holds me accountable. I have dispatched reports on the character, wit, and spleen of every officer. Each item and every farthing has been accounted for, with two regrettable exceptions for which I beg your indulgence.
Unfortunately the sum of one shilling and nine pence remains unaccounted for in one infantry battalion's petty cash and there has been a hideous confusion as the number of jars of raspberry jam issued to one cavalry regiment during a sandstorm in western Spain.

This reprehensible carelessness may be related to the pressure of circumstance, since we are war with France, a fact which may come as a bit of a surprise to you gentlemen in Whitehall.
This brings me to my present purpose, which is to request elucidation of my instructions from His Majesty's Government so that I may better understand why I am dragging an army over these barren plains. I construe that perforce it must be one of two alternative duties, as given below. I shall pursue either one with the best of my ability, but I cannot do both:

1. To train an army of uniformed British clerks in Spain for the benefit of the accountants and copy-boys in London or perchance.

2. To see to it that the forces of Napoleon are driven out of Spain.

Your most obedient servant,

Wellington
Data Management Team’s Initiatives:
(3) Remedial Actions Programme

Army personnel data quality – remedial actions

What is in this pack?
Following DG Pers’ communication to all COs of 15 October, this pack contains the information and instructions you need to fulfil his requirement. These are:
- A covering letter from DM(A);
- A Remedial Actions Matrix (RAM) spreadsheet;
- A RAM Guide document;
- This flyer.

What do you need me to do?
The enclosed covering letter and RAM Guide detail:
- What you need to do, field by field;
- Who to contact if you have any problems.

Why am I being asked to fix data?
Because you are the key link in the chain to make sure that Army personnel data is fit for purpose.

Why is personnel data so important?
There are significant issues with the accuracy and completeness of our data. With your help, we can address these issues so the Army will have:
- Confidence in the accuracy of the business information produced from JPA, and be able to manage personnel more effectively;
- Funding for the correct number and type of manpower, and the ability to plan manpower more accurately;
- Improved ability to meet Defence and Parliamentary reporting requirements.

Why are you giving me a fixed deadline?
We will be assessing the improvements in the quality of JPA data on 1 Dec 09. To enable this to happen, the remedial actions work must be completed by COP 27 Nov 09.
This will show the improvements you have made to the data for which you are responsible – and highlight any gaps!
The results will be briefed at 1* and 2* levels throughout December and January.

What will happen next?
We have two phases planned for the near future:
- Between now and March 2010 our Data Management Team will continue to work at improving our personnel data quality.
- In April 2010 the Army Personnel Data Management Organisation (APDMO) is being introduced, reporting to DM(A), to ensure that our data is clean and complete – and that it stays that way.

This is the flyer which accompanied the personnel data spreadsheets sent to units in 2009.
A professional Data Management Organisation that understands what personnel data is important to the Army, advises on data governance, monitors, maintains data quality and helps the Army exploit the data which is available.
APDMO Objectives

- Provide complete, reliable information on where data consumers should go to find the data they need.
- Enable its customers to answer the fundamental questions about manning and manpower planning from a position of strength.
- Provide a coherent policy for Army personnel data.
- Share expert knowledge about Army personnel data.
- Operate within a framework of policies and standards for data management where compliance is monitored and enforced.
- Provide excellent service to data consumers through education and empowerment of staff.
- Act as a model for the expansion of Data Management services across the Army as a whole.
The Data Governance Community

The two ends of the process

- Data Producers
- Data Users

Senior Stakeholders

The Ownership team

Data Owners

Army Personnel Data Management Organisation (APDMO)

Data Champions

The Champions team

Data Access Controllers
Data Stewards
Policy Process Owners
Process Supports

The Process experts

Data Custodians

The Security team

The Custody team

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- Data Access Controllers
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- Policy Process Owners
- Process Supports

Data Custodians

The Champions team

Headquarters Land Forces
APDMO Organisation

Prevention

Data Governance Manager

Policy & Standards
Compliance & Comms
Project Manager
Data Quality Issues

Cure

Data Quality Manager
Liaison, Demand & Fulfilment
Data Quality Analyst
Data Quality Analyst

Head APDMO
What We Are Doing Now

- Running unit-specific remedial actions initiatives
- Conducting further data audits & monitoring existing data
- Continuing to develop Monitoring processes
- Supporting the Military redundancy programme
What have we achieved

- Statistical reports produced and normally/nationally published within a calendar month
- All personnel queries/what if modelling feeding straight off data (no corrections required)
- Data errors ‘caught’ before they impact; elimination of data errors
- All pay and cost data feeding off the same data sets as personnel data

= One Version of the Truth, fit for purpose
The Lessons (1)

We have realised benefits:

- Hard savings: at least 10:1 return on $ Investment
- Soft benefits:
  - Reduced policy staff effort – right answer first time
  - Trust is returning
  - Greater self confidence amongst the staff
The Lessons (2)

We can change behaviour:

- The Army is now taking more cognisance of manpower costs in planning and decision-making
- The Army Personnel function is taking on wider areas of responsibility – cost control

Why?

- Because we can (because the data supports it)
- Because we have shown we can deliver
The Lessons (3)

We can change behaviour:

- Decision makers take decisions:
  - When needed
  - Informed by the cost implication ‘beforehand’
  - Because they trust the figures and the people who produce them

- There is a realisation beyond personnel of the importance of high quality data
Looking Ahead

- Others are starting to take an interest:
  - The personnel organisations in the Royal Navy, Royal Air Force and Defence
  - Non-personnel organisations in the Army
- We stand a better chance of securing the resources we need – because our evidence stands up to scrutiny
Where has the Journey taken us?

- From not even recognising we had a problem to where we are today in little over two years
- Data Governance has revolutionised our business
- Ownership is fundamental to success
- We are a seen by many as a Beacon in Defence – reinforced by the Award
Discussion

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