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Category: Change and Transformation in the Public Sector

Company: **BMT**

Client: **Defence Digital**



Strategic Command
Defence Digital

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Transforming Data Management with a Novel Enterprise Architecture Approach

Executive Summary

Cyber security, like many digital disciplines, is an area where new technology is emerging quickly and the associated business processes by which you exploit this technology need to evolve equally rapidly. In addition, when working in the public sector on critical government services impacting national interests and operations across the globe, the stakes for not transforming couldn't be higher. The client for this programme, Defence Digital are right at the heart of this challenge delivering Digital and Information Technology to all the United Kingdom's military forces.

BMT supported the transition to a new approach of data management to enable Defence Digital to stay on top of the technology development cycles. The standard management approach is sequential and can be slow to react however, BMT presented a different approach based on the specific client challenges. As customer friend, BMT introduced a tailored configured Enterprise Architecture practice called The Open Group Architectural Framework (TOGAF).

By creating a transformative new framework of operation and adopting an Agile delivery approach, the team delivered valuable benefits to the client including, significant cost savings (estimated to be up to 60% of total costs), increased decision-making agility, a collaborative knowledge sharing environment and a secure and efficient data management process. Due to the support of an experienced multi-skilled team from BMT, Defence Digital are now data-driven and able to confidently and securely make faster and better strategic and operational decisions and improve Defence outcomes.

Background

Defence Digital has an important role within the MOD in the new age of information warfare. They take responsibility for ensuring effective Digital and Information Technology (D&IT) is delivered into the hands of the military and front-line commands.

This includes leading on the MOD Cyber Resilience Strategy, capability development and policy, as well as supplying IT to over 200,000 users across defence around the globe. The drive to improve innovation, interoperability and digital information exploitation across defence is critical to ensure secure operations and safeguard our nation's security, stability and prosperity.



Figure 1 – Defence Digital delivers effective Digital and Information Technology solutions to over 200,000 defence users across the globe.

The Problem

To enable proactive Defensive Cyber Monitoring, Defence Digital needed to create a new way of working and processes to manage data as a strategic asset. This includes transitioning from the traditional in-house servers to a cloud hosted service to enable the exploitation of emerging technologies such as Machine Learning (ML), Artificial Intelligence (AI) and automation.

Although their current approach was fulfilling the core required functionality, Defence Digital were not treating the data as a wider strategic asset. Therefore, the organisation was missing out on a wealth of additional information and potentially wasting one of their strongest assets.

The Objectives

At the start of the project, the following core objectives were identified to ensure the MOD could deliver a strategic advantage over their adversaries:

1. Implement a new architectural approach.
2. Understand the information that exists at each layer of the organisation.
3. Support transition from in house server to a cloud hosted service.
4. Support the move to a more consistent, federated Defence wide model.

The Approach

To achieve the objectives and enable the transformational change, we provided a blended multi-disciplinary team. This included enterprise architects, data architects, data Subject Matter Experts (SMEs) and cyber experts from a technology and operational perspective.

The team worked hand in hand with the client to identify and mitigate upcoming risks before they developed. The development of the project roadmap using TOGAF and Scaled Agile techniques, allowed the broad range of the solution options to be explored ahead of implementation in a consistent and coherent manner.

TOGAF is a proven Enterprise Architecture methodology. It provides a guidance framework to describe and plan the evolving Information and Communication Technology landscape, ensuring consistent standards, methods, and communication. Figure 2 provides an overview of the process methodology.

The Solution

The core element we delivered was driving a TOGAF compliant architectural approach and understanding which artifacts/information exist at each layer of the organisation and phase of the process. Although TOGAF is a business-as-usual approach, the BMT application of TOGAF was novel because the B (Business), C (Information Systems) and D (Technology Architecture) phases were added earlier on in the project before it was scaled to a large programme to complete the full end-to-end TOGAF architecture lifecycle.

The team were uniquely positioned to observe this opportunity having been involved from the early delivery and armed with a detailed experience of the TOGAF approach. This enabled the programme to continue to deliver at scale and pace. In the context of a data rich cyber environment, the team tailored the TOGAF approach to address the client's problem. We combined our knowledge and understanding of TOGAF with our Agile delivery knowledge and bodies of knowledge to create a unique solution for the client's need. This bespoke solution allowed us to address the problem of scaling, timeliness, and technical assurance.

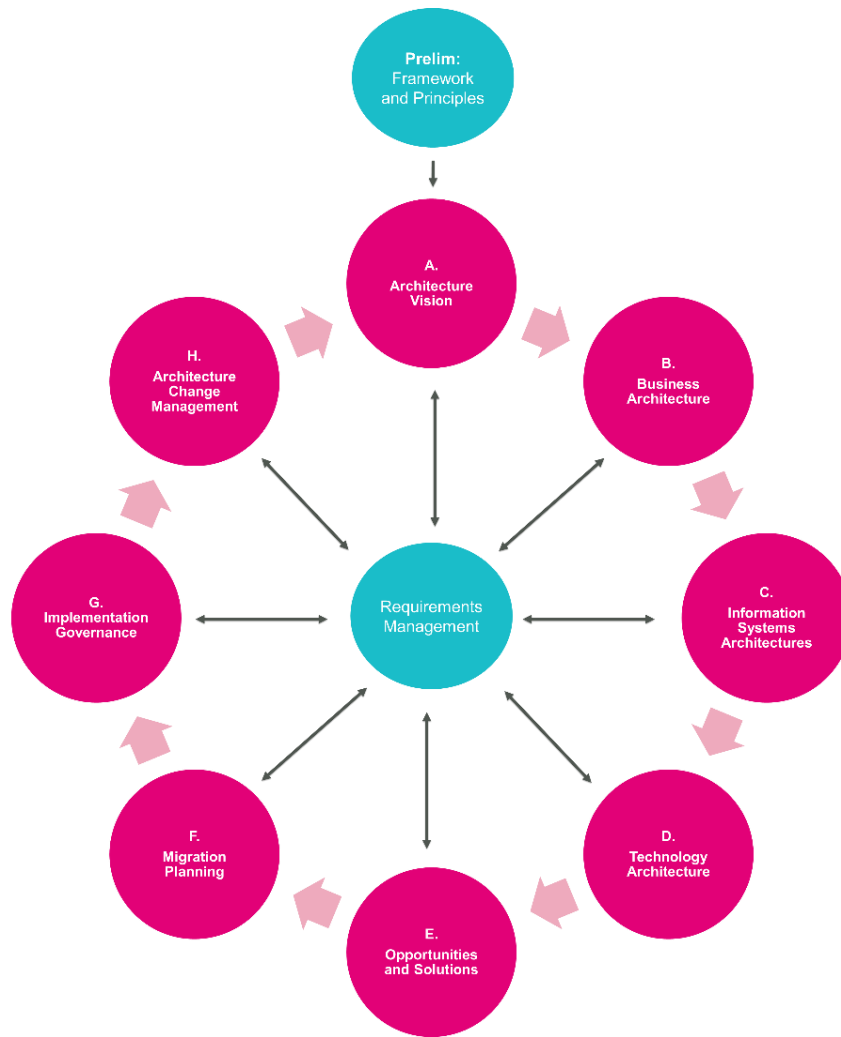


Figure 2 – The Open Group Architecture Framework process diagram showing the iterative approach.

Successful application was reliant on a few key factors. First, the team’s detailed knowledge of the TOGAF process was vital as we had an innate understanding of how it works, as well as the common pitfalls of integration. Therefore, we had the confidence to take this novel approach. In addition, the longevity of the relationship meant the client trusted us to take the initiative and apply a different approach to address their problem and transform their process from simply managing data to utilising data as a strategic asset to drive information advantage.

This combined recipe for success was applied again most recently when BMT were influential in the client move from premises hosted servers to a cloud hosted service in response to the MOD Cloud Roadmap. BMT were involved in the migration and ensuring the MOD receive the value and benefit from moving to the cloud. This coupled with the additional aspect to transform the clients behaviour and perceptions of the value of data continue to deliver increasing value to them.

Challenges

One of the core challenges behind the programme was working across multiple organisations with large numbers of legacy systems and a diverse set of business processes which needed to be rationalised. This was complicated further by needing to work across a wide range of security domains and subject areas each with conflicting and demanding requirements. The conceptual

architecture balanced these conflicting demands to support the full breadth of Defence Defensive Cyber needs.

Lessons Learnt

The key lesson learnt for successful TOGAF implementation was understanding the importance of modifying the standard approach. With this client, we were able to apply a novel tailored approach around the core client challenges and ensure better cultural alignment with the client values.

The Outcomes

Despite the cultural, technical, and organisational challenges of delivering a transformational change programme to over 200,000 people located across the globe, the multi-disciplinary BMT team delivered a novel application of a TOGAF approach to meet the key client objectives. The objectives were met as follows:

Objective	Outcome	Benefit
1. Implement a new architectural approach	Achieved	A novel implementation of TOGAF approach was introduced and tailored to the client’s requirements. The approach delivers a full end to end implementation of TOGAF through phases A-H.
2. Understand the information that exists at each layer of the organisation	Achieved	This was supported by a strong awareness of business, application data interrelationships to ensure efficient and sustainable long-term data management.
3. Support transition from in house server to a cloud hosted service	Achieved	Development of the conceptual architectures to enable the identification and road mapping required to deliver success. These cut across Business, Data, Application and Technology domains.
4. Support the move to a more consistent, federated Defence wide model	Achieved	The identification of the value to be generated through the rationalisation of processes, exploitation of merging technology and holistic data governance/management

Our approach allowed the client to invest in their data strategy at an early stage and subsequently allows them to make decisions at the “speed of relevance”. By investing in their future, this approach ensured decisions are made quickly through analysis of data and do not become irrelevant.

- i. **BMT Delivered valuable cost savings.**
The introduction of implementing an effective data governance process from inception reduced the total project cost by an estimated 60%. Further, BMT helped the client to future proof their data governance process and make significant future savings, as an incoherent and inconsistent solution is expensive to support and improve.
- ii. **BMT increased the client’s decision-making agility.**
When either a new concern or a new threat emerges, or when a new technology emerges, the BMT implemented approach can quickly get solutions into the hands of the user in a controlled and prioritised way. **Providing agility to respond in this critically important national project is the real benefit of the work**, enabling the UK to evolve quicker than our

adversaries. Providing a critical edge in speed to market; addressing new concerns or new opportunities.

iii. **BMT created a collaborative environment for an enduring and an effective solution.**

One of the key reasons BMT were brought into the project was not just for their TOGAF or cyber security knowledge, but for the ways of working and collaborative approach. By integrating key team members into the client organisation, they were able to ensure the data, technology and process transformation (agile and streamlined) was accompanied by a supporting people centric cultural transformation - this included mentoring crown servants on new Agile and Data skills and approaches.

iv. **BMT helped the client to secure their data and implement an efficient data management process.**

To drive faster and better decision making in the wider processes, BMT first helped the client to secure their data and manage it efficiently as a strategic resource. This is particularly true around some of the foundational services such as directory services. Without efficient management it is common to end up with multiple copies of the same information, meaning a loss of governance, and a loss of provenance of what you're making decisions on. Success is about pulling in the right quantities of information and storing it in an accessible and sustainable format to ensure coherence, seamless access and exploitation.

Client Testimonial

Dan Jones | Strategic Command | Defence Digital | Crypto & Defensive Cyber | Service Owner
(Defensive Cyber Operations)

“I am pleased to recognise BMT’s involvement with my team. BMT has stood out from the crowd, by not only providing the core domain expertise but having the right culture and behaviour that mean that together we have achieved the outcomes needed. BMT have been instrumental in standing up a new area of my portfolio that recognises data as a strategic asset, a first of its kind across this sector, creating a logical data governance approach with strong buy-in from across my wide and diverse customer base. This work directly enabled my team to rapidly implement and extend our capabilities with quality ‘baked in’, saving time and money and eliminating the need for later revisionary work.”