MACQUARIE
University
SYDNEY·AUSTRALIA

Transforming Public Sector Operations: The UK Home Office's Digital Data and Technology Strategy

[BUSA8030] Individual Assignment
Macquarie University | Session 2, 2024

Name: Khuat Son Tra (Audrey) Nguyen
Student ID: 48144134

Word Count: 2747

Executive Summary

The UK Home Office's Digital, Data, and Technology (DDaT) strategy aims to transform the department's technological infrastructure, improve service delivery, and sustain a competitive position in the rivalry. The strategy can be reframed into three main pillars: technological optimization, customer-centricity, and continuous innovation.

> **Technological Optimization** focuses on unifying and improving technology infrastructure through the convergence of systems and the creation of Shared Technology Products (STPs). This approach aims to streamline operations, enhance interoperability, and reduce costs, though it faces challenges in standardisation and secure data handling.
>
> **Customer-Centricity** emphasises developing products and services that meet public needs by leveraging data-driven decision-making. Through a federated data architecture and advanced analytics, the Home Office seeks to enhance service delivery, despite challenges related to organisational change, data privacy, and integration.
>
> **Continuous Innovation** highlights the importance of maintaining a competitive edge through ongoing technological advancements and fostering a culture of experimentation. Given cultivating through the organisation culture is key to the success of the strategy, potential conflicts with established norms may pose challenges along the way.

The strategy also underscores the significance of **bold leadership**, **individual empowerment**, and **effective teamwork**—crucial soft skills for supporting digital transformation. While the strategy presents significant opportunities, its success will hinge on the Home Office’s ability to persist, remain focused, and adapt to challenges, ultimately achieving the transformative goals set out in the DDaT strategy.

Overall, the relationship between strategy and technological adoption is bidirectional, which can also observe in the Home Office’s case. While digital innovations may drive strategy, the strategy itself also significantly influences technological adoption within the organization. Despite the benefits, the success of the plan largely depends on how the Home Office addresses the challenges discussed.

Table of Contents

1. Introduction

In the past, the UK Home Office (2021) has faced significant challenges in its outdated technological infrastructure, technical debt, and complex data management systems, which became worse during the COVID-19 pandemic. These issues hinder operational efficiency, service delivery, and national security efforts, emphasising the need for a comprehensive digital transformation (Latupeirissa et al., 2024). In response, the Home Office's Digital, Data, and Technology (DDaT) department introduced a three-year strategy aimed at re-design its technological landscape. This strategy seeks to modernise operations, improve public service delivery, and capitalise on emerging digital opportunities, while addressing inherent technological limitations (Home Office, 2021).

Central to the DDaT strategy are six guiding principles: technological convergence, shared product creation, a product-centric approach, data-driven decision-making, scaling digital solutions, and fostering innovation. These principles aim to enhance the citizen experience by improving critical services, such as visa applications, border control, and police checks, ensuring inclusive access to digital platforms and streamlining processes to eliminate inefficiencies (Home Office, 2021).

The following sections will explore the DDaT strategy's three key stages for successful implementation: (1) technological optimization, (2) customer-centric service delivery, and (3) maintaining a competitive edge through continuous innovation. Additionally, non-technical skills such as bold leadership, cross-functional collaboration, and employee empowerment will be examined as critical drivers for bridging the gap between strategy and implementation. By aligning human capital with strategic objectives, these skills are expected to foster a culture of agility, inclusivity, and innovation, accelerating the Home Office’s journey towards digital maturity.

2. The Strategies and Relevant Data and Analytics Technologies

The Home Office DDaT 2024 Strategy follows a clear progression: (1) building a strong technological foundation, (2) leveraging it for customer-centric product development, and (3) fostering ongoing innovation to maintain a competitive edge. Overall, these objectives form a cohesive roadmap for technological and operational growth.

2.1 Technological Optimization

The first strategic pillar focuses on creating a robust technological foundation by unifying and optimising the department's infrastructure, aligning with the principles of "Converging Technologies" and "Shared Technology Products" (STPs). This unified foundation aims to streamline technological capabilities, driving efficiency and scalability in product development. Key to this approach are open standards and interoperability, which are seen as essential for fostering collaboration, innovation, and competition (Almeida et al., 2010). Standardised application programming interfaces (APIs) enable seamless communication between core STPs, such as form-building solutions, unified DevOps platforms, and identity management systems (Home Office, 2021). These APIs facilitate integration across departments and ensure service continuity as new technologies are adopted.

The reuse and scalability of STPs offer significant benefits: they enhance efficiency in software development (Chiang & Urban, 1997), reduce implementation efforts (Schultz et al., 2003), and increase organisational flexibility (Mohagheghi & Conradi, 2008). Besides, open standards further support innovation by providing a common framework, which reduces development time and allows interoperability across platforms. However, standardisation may also limit flexibility for specialised needs (Ellingsen, 2004) and present legal and security challenges when dealing with sensitive government data (Christiansen et al., 2017).

To mitigate these risks, the Home Office’s TDA governance ensures consistent and compliant data management, supporting standardisation while enabling decision-making based on accurate insights (Bento et al., 2022). Overall, while standardisation can reduce costs and increase productivity, the Home Office must carefully balance these benefits with the need for customization and security to protect sensitive information.

2.2 Customer-Centricity

Building on this technological foundation, the second pillar focuses on creating customer-centric products through a product-oriented approach, data-driven decision-making, and scaling digital solutions. A key component of this strategy is the adoption of a federated data architecture, which allows individual departments to manage their own data while ensuring organisation-wide access. In fact, *federated learning*, which supports collaborative model training across data silos without sharing raw data, addresses critical privacy concerns (Stripelis & Ambite, 2023; Müller & Bodendorf, 2023). As previously discussed, APIs remain to play a central role in this system, enhancing integration and collaboration.

On one hand, this approach enhances customer-centricity by leveraging real-time data insights via the federated data structure for product development and policy decisions. Meanwhile, advanced analytics technologies, like the Person-Centric Data Platform and Entity Search and Matching Engine, improve the ability to respond to user needs, whereas data models such as POLE (parties, events, locations and objects) ensure consistency in decision-making (Home Office, 2021).

Despite its advantages, this shift brings significant organisational challenges required for transitioning to product-centric methodologies (Hodgkins & Hohmann, 2007; Leybourne & Sainter, 2012) and potential data privacy and security concerns with sensitive government data. While big data can improve policy formulation (Hossin et al., 2023; Rahmanto et al., 2021), ensuring legislation and practices evolve to prevent misuse is crucial (Williamson, 2014). Additionally, consistent data quality across sources presents integration challenges, necessitating robust governance and standardisation. The Home Office must address these challenges to effectively implement its strategy.

2.3 Continuous Innovation

The third strategic pillar, "Embracing Innovation," is crucial for sustaining the competitiveness of the Home Office and supporting the previous two pillars. The strategy includes key initiatives such as the Innovation Design Authority (IDeA) community, CTO Innovation Team, Innovation Lab, and Innovation Pipeline (Home Office, 2021), which are designed to drive continuous improvement and enable the adoption of emerging technologies.

In the public sector, innovation is increasingly recognized as essential for addressing challenges and improving services (Moussa et al., 2018). Contrary to traditional views, evidence suggests that frontline staff and middle managers are often responsible for many public sector innovations (Borins, 2001). Furthermore, the shift towards open, collaborative approaches involving multiple stakeholders requires new research methods, such as stakeholder activation and integrating innovation with fields like network governance and design thinking (Bekkers & Tummers, 2018).

However, integrating innovation within a traditionally hierarchical government structure presents challenges. The success of innovation teams, such as the CTO Innovation Team, depends on organisational context, shared vision, and team dynamics (Pearce & Ensley, 2004; Blindenbach-Driessen, 2015). Meanwhile, effective leadership, a supportive organisational climate, and a culture that encourages experimentation are critical to overcoming barriers and promoting innovation in the public sector (Moussa et al., 2018). Without these elements, the Home Office risks stagnation and the failure of its innovation initiatives.

Consequently, to navigate potential conflicts with established norms, the Home Office must adopt a more human-centric approach. It requires significant changes in organisational culture and skill sets, which will be discussed further in section 3.

2.4 Quality, Standards and Assurance (QSA) Framework

Lastly, the QSA Framework aims at ensuring consistency, quality, and effective risk management across the Home Office. By implementing structured guidelines and processes, the QSA framework enhances decision-making and maintains its standard across projects (Home Office, 2021). However, there is a risk of the framework introducing bureaucratic barriers due to multi-layered governance structure, which could slow down decision-making and hinder the agility required in nowsaday’s dynamic environments (Parpiev, 2023).

Balancing control with innovation is key to ensuring that the framework does not affect creativity. While the QSA framework mitigates risks, it must remain adaptable to support the experimentation culture essential for innovation. In research on organisational ambidexterity,

balanced control is identified as a critical enabler of agility, allowing organisations to manage uncertainty while fostering innovation (Aschenbrücker & Kretschmer, 2018).

In conclusion, the QSA framework is not just a tool for ensuring quality and compliance, but a strategic driver that supports the Home Office's ability to innovate and grow while maintaining the standards necessary for success.

3. People and Management Activities

While implementing data and analytics technologies is crucial for a holistic transformation of the Home Office, the success of this initiative heavily depends on the organisation's human factors. Research indicates that soft skills such as critical thinking, complex problem solving, adaptability, resilience, and creativity are equally vital for successfully navigating the digital transformation journey (Obermayer et al., 2023; Gulati & Reaiche, 2020). These non-cognitive skills are rapidly increasing in importance, showing a strong positive correlation with labour productivity (Morandini et al., 2020).

3.1 Leadership

Leadership is a key focus of the Home Office for successful digital transformation. In their plan, leaders are expected to balance accountability for technology infrastructure quality, champion data-driven decision-making, and foster continuous improvement (Home Office, 2021). The integration of technical and professional skills in leadership development is crucial for addressing complex, socio-technical challenges (Schell et al., 2020). The Cynefin Framework and the Organized Innovation Model offer potential approaches for cultivating these multifaceted leadership skills (Fierro et al., 2017). However, the feasibility of implementing such comprehensive leadership development across all levels of the organisation remains a concern.

Another challenge for leaders is navigating potential resistance to change, which often manifests as intellectual arguments rooted in emotional causes (Pietersen, 2011). Overcoming this resistance requires a nuanced approach, including increasing participation (Darmawan & Azizah, 2020), matching readiness strategies with specific forms of resistance (Self &

Schraeder, 2009), and promptly diagnosing underlying issues such as interpersonal relations within the organisation (Cervone, 2011).

While the mission seems challenging, it is not impossible. A successful example of leadership in digital transformation can be seen in Estonia's e-government initiative. The country's Chief Information Officer, who reports directly to the Prime Minister, played a crucial role in driving digital innovation across government departments, demonstrating the importance of high-level leadership support in digital transformation efforts (Kattel & Mergel, 2019).

3.2 Individual Empowerment

Next, individual empowerment across all strategic steps can foster innovation and align individual efforts with organisational goals. This empowerment is closely linked to accountability and risk management in organisational settings. Research shows that empowered employees demonstrate stronger organisational commitment, leading to increased accountability, risk-taking, and improved job performance (Sahoo & Das, 2011). However, the relationship between empowerment and accountability is complex and not always straightforward (Ho & Pavlish, 2011), necessitating careful consideration in implementation.

Furthermore, implementing such empowerment in the Home Office may face challenges due to existing hierarchies. Meanwhile, the introduction of algorithmic decision-making further complicates this dynamic, potentially both supporting and hindering individual empowerment (Valentine, 2021). On one hand, these technological advancements can provide employees with more data-driven insights to make informed decisions. On the other hand, they may limit individual discretion if not implemented thoughtfully.

Given these complexities, organisations must carefully balance empowerment with accountability and risk management. Advanced program evaluation methods could play a crucial role in achieving this balance. These methods can enhance the effectiveness of delegation and accountability while mitigating the risks associated with empowerment (Venton, 1997). For instance, they can help track the outcomes of empowered decision-making, identify areas where additional support or training is needed, and ensure that empowerment aligns with organisational goals.

3.3 Teamwork

Lastly, to tie “bold leaders” and “empowered individuals” together, it is also essential to look into effective teamwork, particularly to overcome entrenched silos and professional hierarchies. Particularly, to facilitate this collaboration, the Home Office (2021) has implemented a three-stage delivery lifecycle: plan, deliver, and improve, providing a structured framework for cross-functional teamwork throughout the transformation process.

However, implementing multi-disciplinary teams in a traditionally siloed organisation presents significant challenges, including overcoming cultural, organisational, and professional differences among team members (Siakas et al., 2018; Lake, 1992). These challenges require a holistic approach that addresses both the technical and social aspects of the organisation (Marsilio et al., 2017). Several initiatives that can be employed are creating shared spaces, standardising core processes, and implementing knowledge management mechanisms (Marsilio et al., 2017).

Furthermore, the Home Office's strategy (2021) emphasises a commitment to diversity and inclusion, which supports the teamwork objective by ensuring a wide range of perspectives inform the pursuit of innovation. Diverse teams have been shown to be more innovative and better at problem-solving (Rock & Grant, 2016). However, creating an inclusive environment during a period of significant change presents its own set of challenges, including potential resistance from some team members and the need for strategic leadership to guide the cultural shift (Siakas et al., 2018; Barr, 1997).

A relevant case study is the Danish public sector's MindLab. This cross-governmental innovation unit successfully addressed policy-making and citizen needs by involving multiple stakeholders in the innovation process, demonstrating effective multidisciplinary collaboration in a public sector context (Carstensen & Bason, 2012).

4. Digital Innovations and Business Strategies

The DDaT strategy is an effort of the Home Office inspired by the Government as a Platform (GaaP) initiative - an approach to digital transformation that aims to create user-friendly and efficient public services (Kuhn et al., 2022). At the first level, digital innovation drives the

organisation’s strategy by offering flexibility in shaping its principles. In turn, these strategies guide technology adoption while being continuously influenced by emerging advancements, creating a two-way relationship that aligns long-term goals with both strategic and technological shifts.

4.1 Digital Innovations Driving Business Strategy

Digital transformation is essential for organisations to adapt to technological change, reshaping processes, products, and structures (Matt et al., 2015). Unlike traditional IT strategies, digital strategies, like the DDaT strategy, are business-centric, integrating digital technologies across all organisational functions (Matt et al., 2015). Employees engagement is critical to the successful adoption of such strategies (Klein et al., 2024).

Responses to digital innovations, whether disruptive or incremental, require organisations to reshape their business models (D'Ippolito et al., 2019). Digital transformation serves as a powerful driver of business model innovation, enhancing agility, customer engagement, and operational efficiency (Louis & Eyo-Udo, 2024). Effective implementation strategies focus on digital literacy, fostering collaboration, and aligning digital initiatives with business objectives (Louis & Eyo-Udo, 2024). To maximise the impact of digital transformation, organisations must cultivate a culture of innovation and continuous learning, which is also mentioned as the last principle mentioned in the Home Office's DDaT strategy (2021).

4.2 Business Strategies Influencing Digital Innovation Adoption

In parallel, Business strategies also shape the adoption of digital innovations, going beyond traditional IT alignment models. By integrating IT and business strategies, organisations can transform products, processes, and relationships (Bharadwaj et al., 2013). Prioritising digital business strategies enhances innovation, with IT capabilities playing a central role (Wunderlich & Beck, 2018). Companies that emphasise IT competence at all levels, especially among top management, are better equipped to leverage digital innovations (Wunderlich & Beck, 2018).

This alignment between strategy and technology enables organisations, such as the Home Office, to leverage digital advancements for competitive advantage (Demirkan et al., 2016).

Incorporating digital innovation into their strategic frameworks improves operational capabilities and market responsiveness, ensuring long-term success in a dynamic environment.

4.3 Challenges and Considerations

While digital transformation offers numerous benefits, significant challenges such as standardisation, data privacy, skills gaps, and resistance to change can hinder successful strategy implementation. For the Home Office and similar organisations, it is critical to address these challenges by developing robust strategies that incorporate both technological and human resource considerations. This will allow them to fully capitalise on digital advancements and maintain a competitive edge in the public sector.

5. Conclusion

The UK Home Office's Digital, Data, and Technology (DDaT) strategy is a comprehensive and ambitious approach to digital transformation, integrating cutting-edge technology with human-centric practices. The strategy recognizes that successful digital transformation extends beyond technological upgrades, necessitating a careful balance between innovation and the development of a skilled, adaptable workforce.

Central to the strategy are three interconnected pillars: (1) technological optimization, (2) customer-centricity, and (3) continuous innovation. These pillars collectively form the foundation for the department's efforts, each reinforcing the others to build a robust and sustainable framework for achieving its goals. Complementing these technological objectives, the strategy underscores three critical human factors: (1) bold leadership, (2) individual empowerment, and (3) effective teamwork. By emphasising the importance of human capital, the strategy ensures that these essential skills are cultivated alongside technological advancements.

Despite the significant opportunities presented by the strategy, it also acknowledges inherent challenges. Overcoming these challenges requires persistence, a clear focus on goals, and an open-minded approach to problem-solving. By embracing these principles, the Home Office can navigate obstacles, uncover innovative solutions, and achieve the transformative goals set out in the DDaT strategy. Ultimately, the success of this strategy will rely on equipping the

workforce with a broad set of skills (Obermayer et al., 2023), fostering a culture of continuous learning (Gulati & Reaiche, 2020), and strengthening the link between education, training, and the workplace (Morandini et al., 2020).

Lastly, this strategy reflects a broader trend in public sector digital transformation, where technological innovations are not just tools, but catalysts for reimagining service delivery and organisational structures. Simultaneously, the specific needs and constraints of public sector organisations shape the adoption and implementation of these innovations. As governments continue to modernise, understanding and leveraging this bidirectional relationship will be crucial for successful digital transformation initiatives.

References

Almeida, F., Oliveira, J., & Cruz, J. (2010). Open Standards and Open Source: Enabling Interoperability. *International Journal of Software Engineering & Applications*, *2*(1), 1–11. https://doi.org/10.5121/ijsea.2011.2101

Aschenbrücker, K., & Kretschmer, T. (2018). Balanced Control as an Enabler of Organizational Ambidexterity. In *Organization Design* (Vol. 40, pp. 115–144). Emerald Publishing Limited. https://doi.org/10.1108/S0742332220180000040004

Barr, O. (1997). Interdisciplinary teamwork: consideration of the challenges. *British Journal of Nursing*, *6*(17), 1005–1010. https://doi.org/10.12968/bjon.1997.6.17.1005

Bekkers, V., & Tummers, L. (2018). Innovation in the public sector: Towards an open and collaborative approach. *International Review of Administrative Sciences*, *84*(2), 209–213. https://doi.org/10.1177/0020852318761797

Bento, P., Neto, M., & Côrte-Real, N. (2022). How data governance frameworks can leverage datadriven decision making: A sustainable approach for data governance in organizations. *2022 17th Iberian Conference on Information Systems and Technologies (CISTI)*, 1–5. https://doi.org/10.23919/CISTI54924.2022.9866895

Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). Digital Business Strategy: Toward a Next Generation of Insights. *MIS Quarterly*, *37*(2), 471–482.

Blindenbach-Driessen, F. (2015). The (In)Effectiveness of Cross-Functional Innovation Teams: The Moderating Role of Organizational Context. *IEEE Transactions on Engineering Management*, *62*(1), 29–38. https://doi.org/10.1109/tem.2014.2361623

Borins, S. (2001). Encouraging innovation in the public sector. *Journal of Intellectual Capital*, *2*(3), 310–319. https://doi.org/10.1108/14691930110400128

Carstensen, H. V., & Bason, C. (2012). Powering collaborative policy innovation: Can innovation labs help? *The Innovation Journal, Suppl. Special Issue: Collaborative Innovation in the Public Sector*, *17*(1), 2–26. Worldwide Political Science Abstracts. https://multisearch.mq.edu.au/openurl/MQ/MQ_SERVICES_PAGE?url_ver=Z39.882004&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&genre=article&sid=ProQ:ProQ%3Awpsa&atitle=Powering+collaborative+policy+innovation%3A+Can+innovation+labs+help%3F&title=The+Innovation+Journal&issn=17153816&date=20120101&volume=&issue=&spage=&au=Doyle%2C+Elaine&isbn=9798207886732&jtitle=&btitle=&rft_id=info:eric/&rft_id=info:doi/

Cervone, H. F. (2011). Overcoming resistance to change in digital library projects. *OCLC Systems & Services: International Digital Library Perspectives*, *27*(2), 95–98. https://doi.org/10.1108/10650751111135391

Chiang, C.-C., & Urban, J. E. (2002, November 23). Scalable templates for specification reuse. *Proceedings Twenty-First Annual International Computer Software and Applications Conference (COMPSAC'97)*. https://doi.org/10.1109/cmpsac.1997.625019

Christiansen, E. K., Skipenes, E., Hausken, M. F., Skeie, S., Østbye, T., & Iversen, M. M. (2017). Shared Electronic Health Record Systems: Key Legal and Security Challenges. *Journal of Diabetes Science and Technology*, *11*(6), 1234–1239. https://doi.org/10.1177/1932296817709797

Darmawan, A. H., & Azizah, S. (2020). Resistance to Change: Causes and Strategies as an Organizational Challenge. *Proceedings of the 5th ASEAN Conference on Psychology, Counselling, and Humanities (ACPCH 2019)*, *395*(1), 49–53. https://doi.org/10.2991/assehr.k.200120.010

Demirkan, H., Spohrer, J. C., & Welser, J. J. (2016). Digital Innovation and Strategic Transformation. *IT Professional*, *18*(6), 14–18. https://doi.org/10.1109/mitp.2016.115

Ellingsen, G. (2004). Tightrope Walking. *International Journal of IT Standards and Standardization Research*, *2*(1), 1–22. https://doi.org/10.4018/jitsr.2004010101

Eyo-Udo, L. (2024). Digital transformation as a catalyst for business model innovation: A critical review of impact and implementation strategies. *Open Access Research Journal of Engineering and Technology*, *6*(2), 001-022. https://doi.org/10.53022/oarjet.2024.6.2.0085

Fierro, D., Putino, S., & Tirone, L. (2017). The Cynefin Framework And The Technical Leadership: How To Handle The Complexity. *INCOSE Italia Conference on Systems Engineering*. https://api.semanticscholar.org/CorpusID:43994890

Ho, A., & Pavlish, C. (2011). Indivisibility of Accountability and Empowerment in Tackling Gender-Based Violence: Lessons from a Refugee Camp in Rwanda. *Journal of Refugee Studies*, *24*(1), 88–109. https://doi.org/10.1093/jrs/feq052

Hodgkins, P., & Hohmann, L. (2007). Agile program management: Lessons learned from the VeriSign managed security services team. *Agile Development Conference*, 194–199. https://doi.org/10.1109/AGILE.2007.11

Home Office. (2021, July 12). *Home Office Digital, Data and Technology Strategy 2024*. Gov.uk. https://www.gov.uk/government/publications/home-office-digital-data-and-technology-strategy-2024

Hossin, M. A., Du, J., Lei, M., & Asante, I. O. (2023). Big Data-Driven Public Policy Decisions: Transformation Toward Smart Governance. *SAGE Open*, *13*(4). https://doi.org/10.1177/21582440231215123

Kattel, R., & Mergel, I. (2019). *Estonia's Digital Transformation: Mission Mystique and the Hiding HandMission Mystique and the Hiding Hand* (pp. 143–160). https://doi.org/10.1093/oso/9780198843719.003.0008

Klein, S. P., Spieth, P., & Söllner, M. (2024). Employee acceptance of digital transformation strategies: A paradox perspective. *Journal of Product Innovation Management*, *41*(5), 999–1021. https://doi.org/10.1111/jpim.12722

Kuhn, P., Buchinger, M., Balta, D., & Matthes, F. (2022, January 1). Barriers of applying Government as a Platform in Practice: Evidence from Germany. *Proceedings of the ... Annual Hawaii International Conference on System Sciences*. https://doi.org/10.24251/hicss.2022.328

Lake, J. (1992). Implementation of Multi-disciplinary Teaming. *Engineering Management Journal*, *4*(2), 9–13. https://doi.org/10.1080/10429247.1992.11414665

Latupeirissa, J. J. P., Dewi, N. L. Y., Prayana, I. K. R., Srikandi, M. B., Ramadiansyah, S. A., & Pramana, I. B. G. A. Y. (2024). Transforming Public Service Delivery: A Comprehensive Review of Digitization Initiatives. *Sustainability (Basel)*, *16*(7), 2818–2818. https://doi.org/10.3390/su16072818

Leybourne, S. A., & Sainter, P. (2012). Advancing Project Management: Authenticating the Shift from Process to “Nuanced” Project-Based Management in the Ambidextrous Organization. *Project Management Journal*, *43*(6), 5–15. https://doi.org/10.1002/pmj.21306

Marsilio, M., Torbica, A., & Villa, S. (2017). Health care multidisciplinary teams. *Health Care Management Review*, *42*(4), 303–314. https://doi.org/10.1097/hmr.0000000000000115

Matt, C., Hess, T., & Benlian, A. (2015). Digital Transformation Strategies. *Business & Information Systems Engineering*, *57*(5), 339–343.

Mohagheghi, P., & Conradi, R. (2008). An empirical investigation of software reuse benefits in a large telecom product. *ACM Transactions on Software Engineering and Methodology*, *17*(3), 1–31. https://doi.org/10.1145/1363102.1363104

Moussa, M., McMurray, A., & Muenjohn, N. (2018). Innovation in public sector organisations. *Cogent Business & Management*, *5*(1). https://doi.org/10.1080/23311975.2018.1475047

Müller, K., & Bodendorf, F. (2023). Cross-silo federated learning in enterprise networks with cooperative and competing actors. *The Human Side of Service Engineering*, *108*, 244–253. https://doi.org/10.54941/ahfe1003126

Parpiev, K. (2023). Overemphasis on Hierarchy and Bureaucracy, Leading to Slow Decision-Making and a Lack of Agility. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.4361544

Pearce, C. L., & Ensley, M. D. (2004). A reciprocal and longitudinal investigation of the innovation process: the central role of shared vision in product and process innovation teams(PPITs). *Journal of Organizational Behavior*, *25*(2), 259–278. https://doi.org/10.1002/job.235

Pietersen, W. (2010). Overcoming Resistance to Change and Driving Momentum. In *Strategic Learning* (pp. 135–155). Wiley Online Library. https://doi.org/10.1002/9781118257968.ch7

Rahmanto, F., Pribadi, U., & Priyanto, A. (2021). Big Data: What are the Implications for Public Sector Policy in Society 5.0 Era? *IOP Conference Series: Earth and Environmental Science*, *717*(1), 012009. https://doi.org/10.1088/1755-1315/717/1/012009

Rock, D., & Grant, H. (2016, November 4). *Why Diverse Teams Are Smarter*. Harvard Business Review. https://hbr.org/2016/11/why-diverse-teams-are-smarter

Sahoo, C. K., & Das, S. (2011). Overcoming Resistance to Change and Driving Momentum. In *Strategic Learning* (pp. 135–155). European Journal of Business and Management. https://doi.org/10.1002/9781118257968.ch7

Schell, W., Hughes, B., Donald, J., Goldfinch, T., Kadi, A., Moore, E., Reeve, D., Rottmann, C., & Sheridan, P. (2020, June 15). LEADERSHIP TRANSCENDING BORDERS: BUILDING BRIDGES TO INTEGRATE TECHNICAL AND PROFESSIONAL KNOWLEDGE. *Proceedings of the Canadian Engineering Education Association (CEEA)*. https://doi.org/10.24908/pceea.vi0.14174

Schultz, K., Bratt, E. O., Clark, B., Peters, S., Pon-Barry, H., & Treeratpituk, P. (2003). *A scalable , reusable spoken conversational tutor : SCoT 1*. https://api.semanticscholar.org/CorpusID:2080854

Self, D. R., & Schraeder, M. (2009). Enhancing the success of organizational change. *Leadership & Organization Development Journal*, *30*(2), 167–182. https://doi.org/10.1108/01437730910935765

Siakas, K., Georgiadou, E., Siakas, D., & Rahanu, H. (2018). Developing Effective Teams in Global Multidiscipline Engineering and Manufacturing Organizations. *Communications in Computer and Information Science*, 565–576. https://doi.org/10.1007/978-3-319-97925-0_48

Stripelis, D., & Ambite, J. L. (2023). Federated Learning over Harmonized Data Silos. *ArXiv (Cornell University)*. https://doi.org/10.48550/arxiv.2305.08985

Valentine, M. A. (2010). Overcoming Resistance to Change and Driving Momentum. In *Strategic Learning* (p. 135155). Semantic Scholar. https://doi.org/10.1002/9781118257968.ch7

Venton, J. P. (1997). A General Theory of Delegation, Accountability and Empowerment. *The Canadian Journal of Program Evaluation*, *12*(2), 163–188. https://doi.org/10.3138/cjpe.12.008

Williamson, A. (2014). Big Data and the Implications for Government. *Legal Information Management*, *14*(4), 253–257. https://doi.org/10.1017/s1472669614000553

Wunderlich, N., & Beck, R. (2018). You'll Be Surprised - Digital Business Strategy as Driver of Organizational Innovativeness. *Proceedings of the 51st Hawaii International Conference on System Sciences*. https://doi.org/10.24251/hicss.2018.508