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BBC's Digital Media Initiative
A Consultancy Report

PREPARED FOR

British Broadcasting Company, BBC

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Important Notice About This Report

This consultancy report, "BBC's Digital Media Initiative" has been prepared by a student of the University of Northampton, Faculty of Business and Law in accordance with the academic qualification requirements of Finance and Procurement Management. This report offers a somewhat detailed overview and list of recommendations for the **British Broadcasting Company**, **the addressee**, regarding its famous *DMI project*.

The work in this report was carried out based on the assessment criteria disclosed as per the assessment task by the instructor. All the information disclosed herein is thoroughly researched and therefore can help the addressee in strengthening its framework. This report can be disclosed to any party for informational purposes only. No liability or responsibility in respect of this report to parties, other than the addressee, utilizing the information herein for their own interests is acceptable.

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1.   Executive Summary

To reshape the ways and techniques of media acquisition, processing, and archiving at BBC, the governing body of the corporation in 2008 instigated the Digital Media Initiative (DMI) project as an indispensable have to have (Sangani, 2014). It was a transformation program intended to put a stop to the usage and storage of content on videotapes at BBC (Marton and Mariategui, 2015). The objective of the DMI project was to turn from analogue signal processing and handling to digitalized systems, as the latter approach for data handling and processing is more convenient (Parahar, 2020) in terms of cost, signal transmission, synchronization, etc (Marshall, 2000) than the former analogue data.

Even when the project was labelled as an essential have to have by BBC itself, however, during its lifespan, the team working on the realization of the project encountered quite remarkable problems which were not taken into consideration timely. The neglect in accounting to the encountered problems can be attributed to the absence of productive governance, not hiring, consulting, and making part of governance any senior transmitting and programme making staff (Daniel and Ward, 2013). Additionally, no project review sessions were held regularly when the project was in its developmental phase.

Then there was a huge procurement blunder made by BBC in allotting, without a second thought, the DMI project to Siemens in 2008 because it had been selected as the strategic partner of BBC that can offer better value for money (NAO, 2011). Knowing that Siemens lacked some skills for the project, BBC however deliberately chose Siemens as a tech-solution provider for DMI for the project to avoid open procurement, which would have otherwise cost BBC an additional £3m (NAO, 2011). BBC thought that the shortfalls in required skills for the project could be compensated by the hiring of newly trained staff and third party suppliers. Additionally, in light of the recommendations of PAC (Public Accounts Committee), BBC did not find any other tech delivery partner as a viable option than Siemens. Thus BBC secured a deal of £79m with Siemens, expecting it to get the design, procurement, and integration modules of the system ready by the following year(2009) (Carayannis, 2018)

The fixed-price contract with Siemens came with the provisions that allowed the company to have control over BBC's IT fundament whilst forbidding BBC to intercede in Siemen's operative of design and delivery of the system) (Espiner, 2011). This along with a lack of skills led to the failure of meeting project deliverable deadlines by Siemens as a consequence of which the contract was terminated in mutual agreement of either party. BBC then brought the project in-house in the summer of 2009 and even then BBC was far too lax about the risks involved in taking the project in-house (WiredGov, 2014).

Bringing a tech project in-house did no noticeable good to the progress of the DMI when several years after the actual project delivery time, BBC still failed at delivering the project in its full capacity (Sweney and Conlan, 2013). BBC's poor governance of the project and culture problems (Schopflin, 2015) within the firm, perhaps, in retrospect, had made it evident enough that what Siemens was unable to achieve; BBC could not have achieved it in-house even if the newly trained staff was appointed the responsibilities of the project (WiredGov, 2014).

The changing priorities in the requirements of services from the DMI project over time also aid the events that led to project failure (Accenture, 2013). From 2009-10, BBC's vision about DMI was to transform the entire system (production, handling and archiving content) at BBC to digital. Later the vision shifted from production-centric and cross-enterprise to archive-centric and becoming isolated from other organisations' activities (Accenture, 2013).

After repeated failures and missed deadlines, towards the end of the year 2012, BBC's Director-General Tony Hall, ditched the project for good with the corporation suffering a hefty loss of £98.4m as of project failure and license payer fees (NAO, 2014).

2.   Introduction

Digital Media Initiative (DMI) is a relatively new engineering-tech geared project of BBC fixated at upgrading the way a BBC staff generates, manages and shares its content, both audio and video, that goes on air through their media channels. The novelty that this project offers to the BBC staff is the ease with which they can handle both archiving and delivery of their content through connected digital production and asset management (Olájídé, 2020).

Ever since the advent of the internet, the concept of content digitisation has urged firms to go with the flow and adapt to the struggles of translating traditional language data into a digitalised format (Mariátegui, 2013). DMI project is a part of the very struggle, which BBC adopted in early 2008 to improve its content handling infrastructure which is archiving and making related content available to the users via digital platforms like websites or applications. The need for the DMI project to BBC is evident given the size of the multilingual audience the BBC reaches internationally every day (Marton and Mariategui, 2015).

2.1   Key 'Intended' Delivery Objectives of the DMI Project

Aiming to move towards an all-digital system that offered freedom from an old magnetic-recording media workflow, the DMI project was planned so as to deliver the following key objectives (NAO, 2014).

2.1.1 Tools for Content Production

At the time of DMI's conception, the then-available commercial production tools were not geared with the technology of allowing information transfers, basically content, between production and archiving units digitally. And for that, BBC from the very beginning set out to build a custom-made digitised system under the digital media initiative project (NAO, 2014).
For that matter, a new software program is conceptualised to upgrade tools for content production that is set to allow both (Kallinikos and Mariategui, 2008):
  ● the exchange of information, alongside complete metadata info, between the content creator's desktop and BBC's professional editing facilities as well as
  ● basic editing of the content, whilst keeping the file data saved, from the comfort of desktops
These objectives are aimed at bringing all creators of BBC around the globe to a single junction point where it will become easier for creators to share and keep the created content saved on a single online workspace (Alexander, 2012).

2.1.2 Digital Store for Archiving of Data Online

The hassles associated with the archiving of old-fashioned magnetic tapes used for recording content in the past were troublesome enough and when an international media coverage providing agency is in question, troubles undoubtedly transformed into maddening situations when data corruption occurs due to magnetic tape damages (Venkataraman and Subba Rao, 2004).

To avoid such situations, one of the intended deliverables of the DMI project is to provide an online digital store as a more robust alternative to data archiving on magnetic tapes or any other physical media storage medium (Schopflin, 2015).

The data storing archive is to be linked with the production tools so that the content transfers automatically online and the production team can label the acquired content in real-time, side by side. The labelling on content files, or more precisely metadata information, will make it easier to quickly find and access the archived data at any time.

2.1.3 Archive Database

The archive database is meant to keep a record of all the physically archived content through cataloguing and organizing within classified databases. This deliverable of the project is aimed at replacing the old system of maintaining physical records and information of content. Archive databases will be connected with the digital archive libraries which will allow creators to store as well as retrieve content whenever needed via their desktops(multi-platform delivery).

2.2   BBC's DMI at a Glance

Image data acquired from BBC
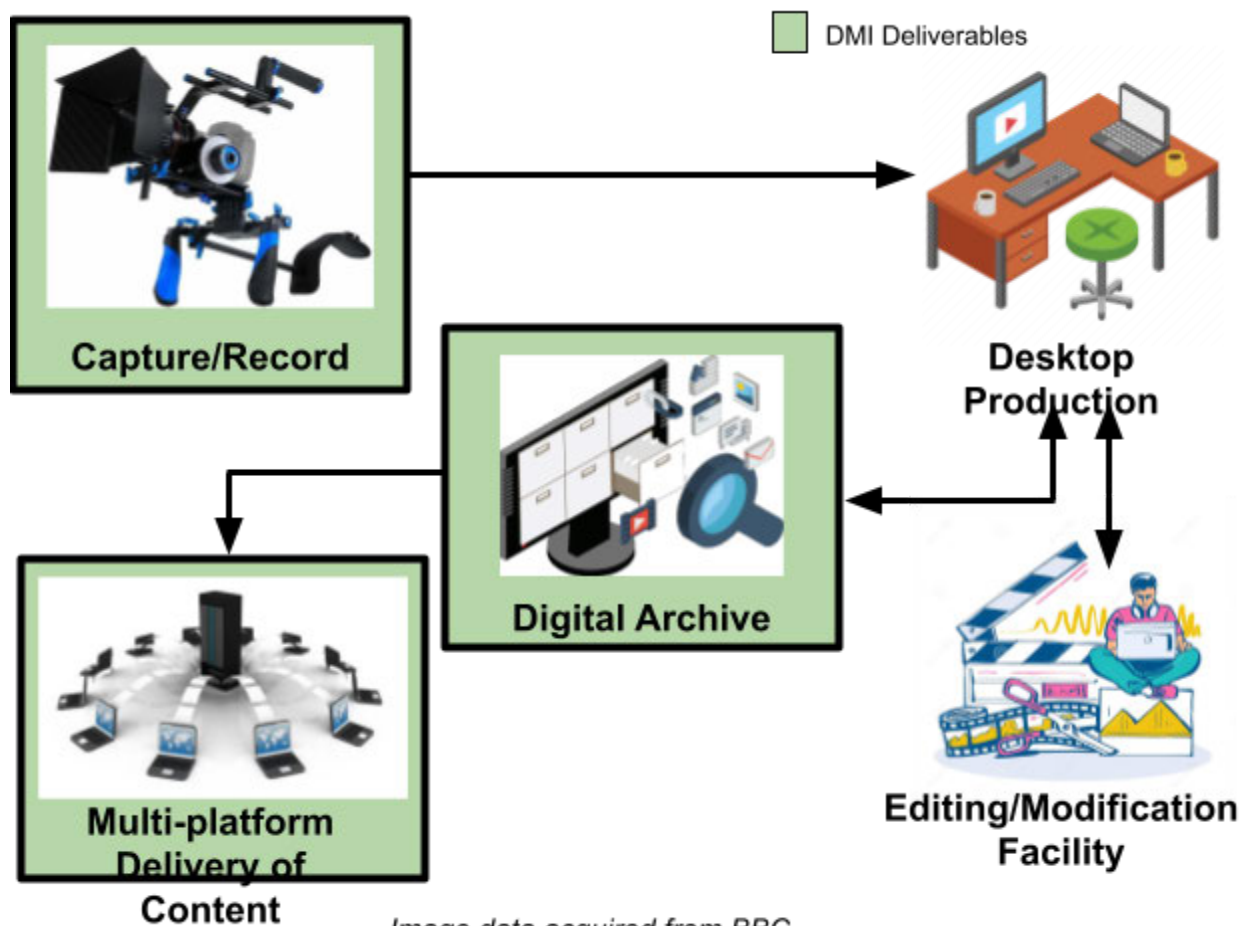
2.3   Awaited Advantages of the DMI

The DMI project was expected to return both financial and non-financial assets to BBC (NAO, 2011). And even though BBC had no administrative control over the delivery of non-financial part of the project's assets, however, the company did sign legal documents of understanding with partners such as the British Library to aid in the realisation of those assets of the project (NAO, 2011).

2.3.1 Financial Assets

- Reduction in operational costs (PAC, 2014).
- Content re-utilization as a creative dividend solution (for revenue growth, talent acquisition, or marketing, etc) (NAO, 2014).
- Savings on additional third-party surcharge through the use of DMI project's services rather than hiring third-party service (PAC, 2014).

2.3.2 Non-financial Assets

- Improved productivity (Accenture, 2013)
- Public access to corporate's archives (NAO, 2014)
- Better collaboration with other firms (Kallinikos and Mariategui, 2008).

2.4   Project Timeline Overview
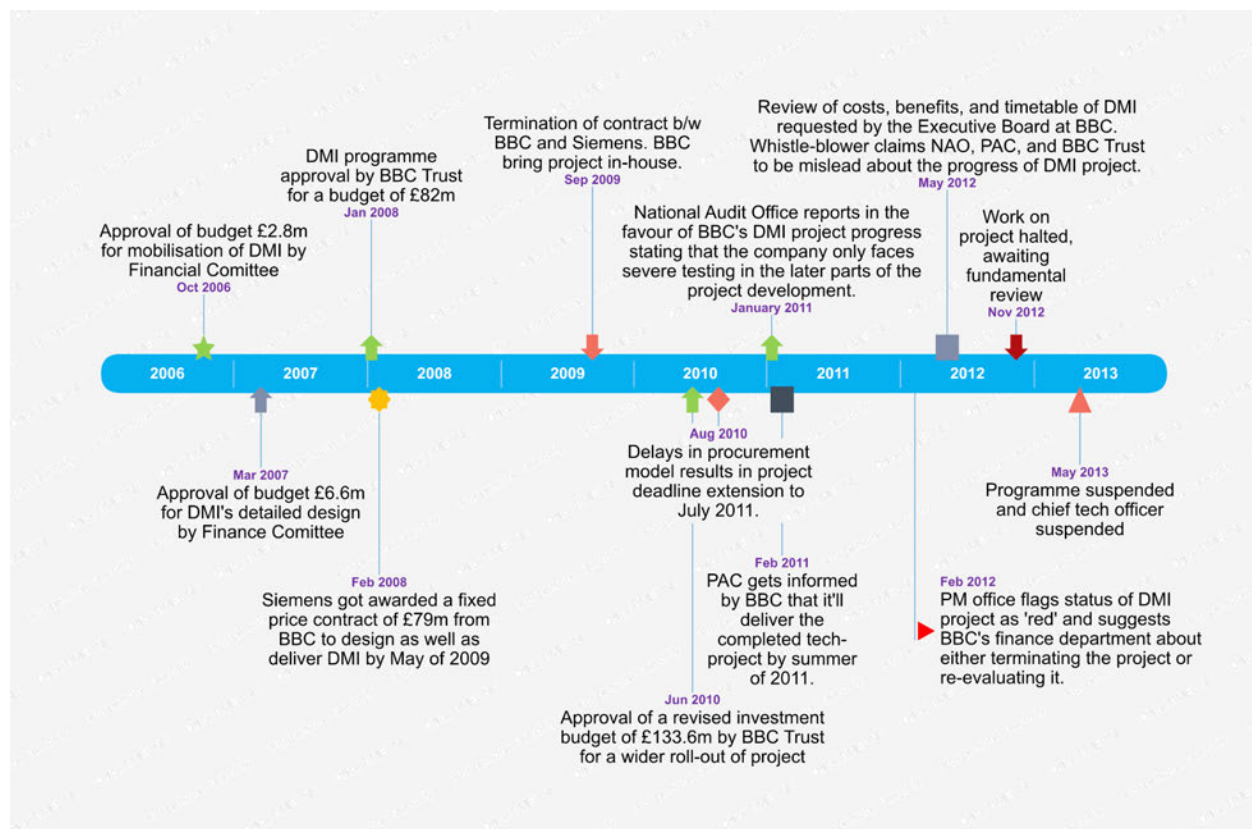
3. Analysis of the DMI Project

Below is the detailed procurement analysis of the DMI project that can help demystify the reasons why the project was doomed to failure.

3.1 Procurement and Purchasing Model

The procurement framework and model of a project within a firm are meant to be planned to provide an efficient(requiring less time) and good value for money(reduced costs) (ADB, 2018). It was exactly what BBC looked out for in planning out the DMI project's procurement and purchasing model when the firm secured a fixed contract with Siemens, the strategic partner of BBC, for the design and delivery of DMI immediately after the project was approved by BBC Trust (NAO, 2011). However, this decision of the firm was taken based on mutual trust in Siemens rather than following normal procurement procedures.

3.1.1 Supplier Selection: Why Siemens?

The primary reasons as to why BBC adopted such a procurement procedure for the self-proclaimed 'must have to have' project were as under:

- Siemens had an experience of how things worked at BBC and its systems as it had in the past worked on and delivered projects to BBC (NAO, 2011).
- In 2007, Siemens had helped BBC with one of its major projects at BBC Pacific Quay (NAO, 2011) which was under the TFC contract as a result of which BBC conceptualized that Siemens had a good understanding of its requirements. For that, even when BBC did partly scrutinize other delivery partners, Siemens appeared to be the best delivery model option to BBC
- In 2004, under the TFC (Technology Framework contract), an out-sourcing contract signed between Siemens and BBC, Seimens was to deliver and design the tech requirements of BBC for 10yrs efficiently and in terms of good value for money. It was a recommendation of PAC to BBC to acquire the services of Siemens back then. Later in February 2008, upon approval of DMI by BBC Trust, in light of the TFC contract, BBC handed over the project without hesitation to Siemens without re-evaluating the capacity and capability of the contracted agency.
- Other than that, BBC thought that handing over the contract to Siemens and avoiding open procurement would save both time and cost of almost £3m to the firm (PAC, 2014).

Those were the primary reasons why BBC thought that the handing over of the DMI project's contract to Siemens was a sound decision, adequately flexible with the firm's procurement procedures in practice (NAO, 2011).

According to the signed contract, Siemens was to deliver the first stage: Design and Integration modules of the project by May of 2009 and a second phase: fully operational support of the programme within BBC's systems was to be delivered by March of 2015. Siemens failed at delivering the first phase and after multiple time delays and repeated failures in delivering the

first phase of the project, the contract between the two firms terminated in September 2009 after which the BBC took the project in-house.

As a result, Siemens failed to deliver the project, the contract got terminated, BBC's procurement failed and the project was taken in-house. Termination of the contract caused both time and financial loss to the firms which the firm had been trying to prevent from open procurement (NAO, 2014).

In taking the project in-house, BBC yet again; like a fixed contract with Siemens; acted negligently about the lack of skills and leadership management that were present in-house (NAO, 2011). The negligence cost BBC an additional time slippage of 21 months (NAO, 2014) which intensified the procurement risk. Even though taking the project in-house did bring about the positives, but the negatives outnumbered those positives to an extent that the programme ended up being suspended as of May 2013.

3.2   SWOT Analysis of DMI

3.2.1 Strengths

➔ Supporting and realising BBC's vision of creativity in a cost-efficient and timely manner by offering a dedicated commitment to planned operational functions (Schopflin, 2015).
➔ Helping significantly with the BBC's master plan of Quality First (NAO, 2011).
➔ Sustainable production centres that are 'networked' altogether across the UK with a digital archive keeping the entire records of content to date (NAO, 2014).
➔ Providing of a solution to managing and updating digital assets while collaborating with industry partners (Schopflin, 2015).
➔ Employing of technical solution entailing architectural documentation on the recommendations of NAO to assess mutual relations between components and the determination of proposed changes (NAO, 2011).
➔ Production of a complete testing strategy for the project in Dec 2010 (NAO, 2014)
➔ Appointments and commissioning of external assurance services to strengthen technology solutions that can be employed in the integration of more complex modules of the programme as it proceeds (Mariátegui, 2013).
➔ Strengthening of programme team before taking the project in-house (NAO, 2011).
➔ Adopting of agile project management technique (one that involves iterative software development methodology to best suit user demands and feedbacks) for DMI that allow for flexibility in planning and delivery of the project. The agile approach was both a strength and a risky approach (NAO, 2011).

3.2.2 Weaknesses

➔ Handing of a fixed contract to Siemens without re-assessing its capability and capacity for the project (NAO, 2014).
➔ Open procurement avoidance to save on additional costs of about £3m (NAO, 2014).
➔ Focusing on time-saving and cost-effective solutions in the procurement procedures which later failed and resulted in several months time slippages with additional costs incurred like the hiring of new team members, etc (NAO, 2011).
➔ Failure to understand the level of risk involved in taking the project in-house and the lack of

governance present within the firm (Schopflin, 2015).
➔ No team-based allocation of resources was planned as a result of which team size and appropriate skills were mismatched (Mudassar, et al. 2019).
➔ No detailed planning about the activities of third-party vendors was provided which led to the deprivation of project progress (NAO, 2011).
➔ No Cost Business Analysis (CBA) was performed for options available neither was 'the then' net value calculated during investment appraisals as a result of which financial case (NAO, 2011).
➔ Flaws in a plan of benefits realization (NAO, 2011).
➔ Lack of thorough assessment of the risks to the project and failure to trace the requirements for the project (NAO, 2014).
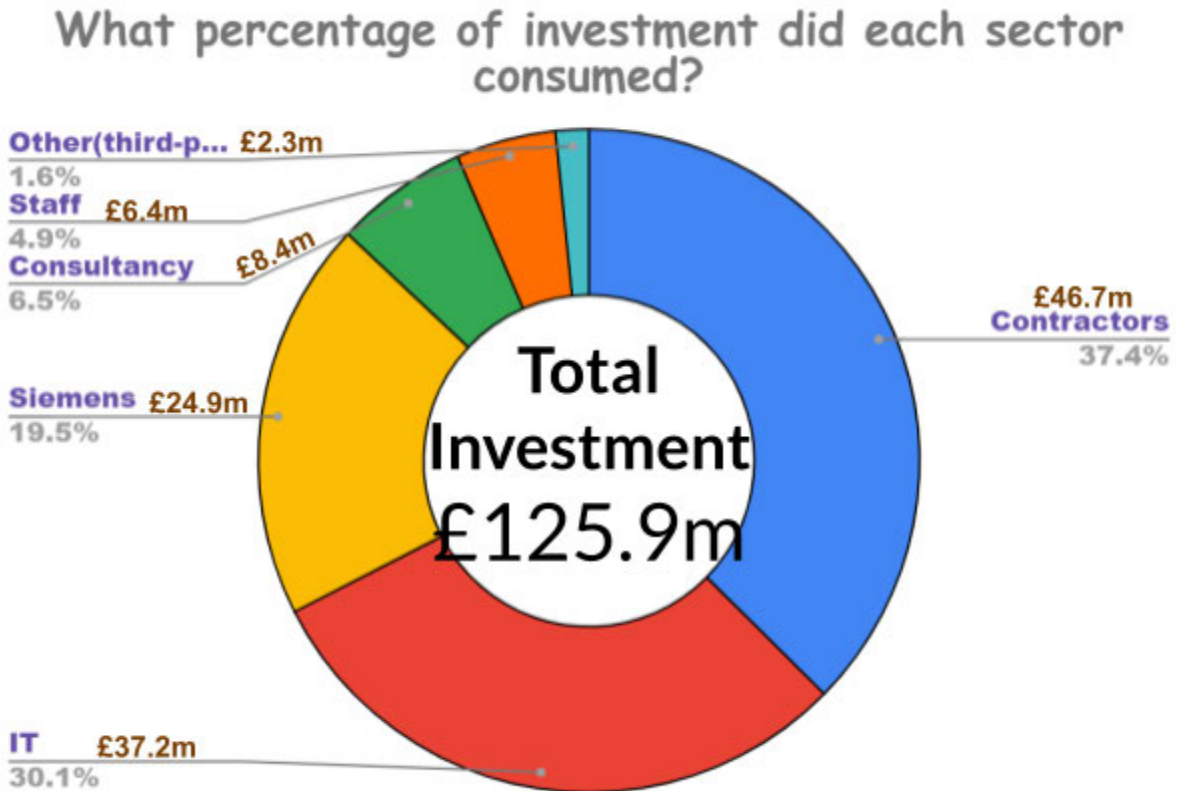
3.2.3 Opportunities

➔ Possibility of strengthening of the architecture through consolidation of the software stack from maintenance ease and cost reduction point of view (Accenture, 2013).
➔ Repeated testbeds during the programme development and testing phase of the project ensure compatibility of DMI with Digital Archive at the earliest possible opportunity (Accenture, 2013).
➔ The extent to which users specifically non-specialists can maintain, make use of, or augment the DMI resources (Accenture, 2013).
➔ Consolidation of DMI components for better platform stability in future (Accenture, 2013)
➔ Considering closely resembling product packages to DMI in the marketplace to use as an alternative option and efficiently overcome critical issue areas arising during investigations (Accenture, 2013).

3.2.4 Threats

➔ A high turnover rate of individuals and teams employed at key designation role of the project (Accenture, 2013).
➔ Repeated de-scopes and re-scopes in requirements due to failing clarity in the baseline leading to multiple evaluation meetings for the two interchangeably with unclear sign off (Accenture, 2013).
➔ Users lost of confidence in the programme with arising difficulties and time slippage in delivery of a reliably complete system meeting their expectations and requirements (Accenture, 2013).
➔ Speedily evolving technology and evolution to business need with an immense time slippage on the delivery of project milestones (Accenture, 2013).
➔ Lack of grip on project development, planning and time management by executives of BBC; ultimately resulting in a failure to understand arising risks (Schopflin, 2015).

4.   Financial Structuring of the DMI Project

According to the NAO report, BBC spent a gross amount of around £125.92m on the DMI project (NAO, 2014). Here's the breakdown of the percentages of the total money invested by BBC for consultancy, contractors, staff, and other third-party investments.

What percentage of investment did each sector consumed?

Other(third-p... £2.3m
1.6%
Staff £6.4m
4.9%
Consultancy £8.4m
6.5%

£46.7m
Contractors
37.4%

Siemens £24.9m
19.5%

Total Investment £125.9m

IT £37.2m
30.1%

5. Recommendations

Even though the DMI project failed miserably when further works on the project were halted and the programme was totally suspended in May 2013, however, given the scope and importance of the project if BBC ever intends to re-launch the DMI project, following recommendations might help with governance, procurement, and efficient delivery of the final product.

5.1 Governance and Procurement

❖ Given the DMI project's complexity, scale, and the quantity of risk associated with every phase of the project; Governance arrangements made by BBC were insufficient, improving which could have significantly helped in bettering project progress. Here's how governance could be improved:

> ➢ **Appointment of the senior responsible owner** - BBC did not appoint one due to which there was no alignment in elements of the DMI; the project been divided into various divisions due to responsibility splitting, and no sole point of accountability owner did not allow for differences between developers and intended users to find any resolution.
> ➢ **Ensuring transparent reporting of project circumstances** - BBC's corporate governance structure also lacked transparent reporting of project situations like project progress against the plan, benefits achievement level for further decision-making, or costs required to proceed to completion of the project (Kelly, 2010). All this resulted in immense time gaps and non-timely reporting of issue severities which could've been avoided through clear reporting of project circumstances to executives on regular basis.
> ➢ **Employing detailed investigations and checks for audits and assurance services** - BBC's move to Salford also one of the major project's of the firm, hindered BBC from carrying out detailed investigations and checks on DMI's audits and assurance service reporting as a result of which the project suffered a 15 months delay in its time table. With multiple ongoing 'major' projects within a firm, the executive board needs to pay attention to and carry out a detailed investigation of the events of all ongoing projects.
> ➢ **Looking for best available options in the handling of project contracts to third-party service providers** - In the handling of a DMI contract to Siemens, BBC relied on Siemen's capacity and capability assessment it had conducted in 2004 which was a procurement decision not made on sub-optimal grounds. The firm's mantra of procurement 'best value for money' needs to be justified through thorough investigation in its investment cases.

❖ Taking of project in-house with incapable staff and missing key designatory role appointees with the intent of either filling in the gaps of incapability through new hires having 'right skills' or relying on third parties was a poor choice and could have been avoided if BBC had tested for best alternative options like open procurement which is a better procurement strategy for such large scale projects like the DMI (Gupta, 2019).

❖ Business case flourishes based on relevant information (Marnewick and Einhorn, 2019), it should therefore be subjected to repetitive reviews and updates with ongoing feasible testing

throughout the project's lifetime. In the case of DMI, BBC did not revisit the business case accordingly and despite BBC Trust approving the updated version of the project timetable and its projected benefits, the BBC failed to put them to practice no later than by 18 months. Revisiting a business case is vital to keep track of the projected benefits and the overall progress of the project (Einhorn, Meredith, and Marnewick, 2020). To improve the testing phase BBC should:

> ➢ Embed in its system the rule of repetitive testing
> ➢ Employ automated testing tools that can help improve efficiency
> ➢ Make use of tools that can support new tech components

5.2   The need of being an intelligent client

❖ When the initial contract between BBC and Siemens was terminated as of mutual agreement and a no-blame condition, both firms had their discrete project lessons learnt reviews which neither party discussed with the other (NAO, 2011). Consequently, even after the contractual dispute settlement, BBC did not acquire any understanding of the programme from Siemens. Project lessons learned reviews are vital in helping with adopting good practice for future projects and in avoiding the encountered problems (Vine, 2018). Drawing up a joint understanding of those reviews can help both BBC and Siemens in their future projects.

❖ As per the initial contract rules which the BBC had with Siemens, BBC was not allowed to intervene in matters concerning operations of Siemens due to which BBC did not completely comprehend the approach its contractor had adopted for the delivery of the project (NAO, 2011). Hence, BBC failed at having an intelligent client/customer function (ICF) for its contractor; which could have otherwise saved BBC time, money, and from project failure (Watton, 2014). Here's how BBC can ensure ICF in the future:

> ➢ For projects requiring software development phase: commissioning individualistic tech assurance reports on system designing (Onen and Tanyildizi, 2010).
> ➢ Making intervention a part of contract agreement and planning out when and how to intervene to ensure secure and timely delivery of outsourced contracts (Watton, 2014)
> ➢ Ensuring a watchful eye on contracts through the establishment of minimum tech and managing requirements (Shrikhande, 2001).

5.3   Financing Case

❖ The project's cost-benefit estimate observed a marked decline over time which showed clearly that initially, the cost-benefits were shown to be highly overstated by BBC (NAO, 2011). Just as the firm adopted rigorous investment case reviews for the programme, adopting the same strategy with the benefits projections could have helped in not exaggerating, if not conveying the accurate stats for benefits projection. To make it happen so, BBC could have worked towards attaining the reflected projected benefits by:

> ➢ Saving on programme expenses (Yescombe, 2002).
> ➢ Devising a baseline budget against which obtained savings could be deciphered
> ➢ Ensuring benefits enrollment for the programme from those who can deliver them and feel responsible for it (Yescombe, 2002).

5.4   Getting tech upgraded for advanced project implementation phases

❖ According to NAO's report (NAO, 2014), as of October 2010, the tech gear at BBC was sufficient for the early phase of project development only. However, for later, more complicated stages of programme development, the tech gear required upgradation to ensure its timely, within budget delivery, ensuring full functionality. For that, BBC needs to get the following done:

➢ Upgrade **Technical Solution** to ensure better tech integrity of the programme by providing a reference framework that can evaluate the measure of interdependencies and tend to change control requests. (Evans, 2015)

➢ Revolutionizing **Tech planning** to help with detailed planning and resolve team conflicts by ensuring proper drafting of resource allocation and mapping responsibilities of all teams individually. (Evans, 2015)

6.   Conclusions

Even with the project marked as a necessary have to have by the firm itself, BBC failed the project miserably because neither did it establish clear requirements for the project nor did it succeed at devising a meaningful, technically sound solution for the project's efficient implementation. The optimism of taking the project in-house with the confidence of achieving benefits from the programme, even when lacking the necessary resources for its real materialization, was in itself a terrible idea that clearly stated that the firm was way too relaxed about the project's urgency.

Yes, the DMI project was of a large scale nature coming in with significant risk factors no doubt, but given the complexity level of the project, BBC executives did not adopt the right strategy to execute correct project implementation. There was a significant gap in governance and procurement strategies that were adopted with minimal and delayed assessment and scrutiny testing which made the executives lose grip of the programme.

Even though the firm failed the project on the first go and did experience immense financial losses but, grasping the situation as an opportunity and turning it into an advantage for the benefit of its own business structure, the firm can try re-implementing the project considering the recommendations enclosed in this report. For the second chance, however, better procurement and governance recommendations are a must to avoid twice the damages that had been inflicted and experienced once.

References

[1]
Ọlájídé, F. (2020) 'Project Management Methodologies and Bodies of Knowledge in Contemporary Global Projects', *Agriculture Economics and Extension Department, Landmark University, Nigeria*, doi:10.13140/RG.2.2.11247.87204

[2]
Mariátegui, J.C. (2013) 'Image Information and Changing Work Practices: The case of the BBC's Digital Media Initiative', *London School of Economics and Political Science*

Follow link

[3]
Marton, A. and Mariategui, J.C. (2015) 'De/Contextualizing Information: The Digitization of Video Editing Practices at the BBC', *The Information Society*, 31(2), doi:10.1080/01972243.2015.998102

[4]
NAO. (2014) 'British Broadcasting Corporation - Digital Media Initiative', *London: National Audit Office*, Available at:
https://www.nao.org.uk/wp-content/uploads/2015/01/BBC-Digital-Media-Initiative.pdf (Accessed: 1st November 2021)

[5]
Kallinikos, J. and Mariategui, J.C. (2008) 'Media Convergence and Organizational Change: Video Production and Distribution in the Age of the Internet', *Conference: 24th EGOS (European Group for Organizational Studies)*, Amsterdam

Follow link

[6]
Venkataraman, K. and Subba Rao, V.V. (2004) 'Information Management - A Case Study of Design and Implementation of Cost-Effective Well Log Data Management System', *5th Conference & Exposition on Petroleum Geophysics,* pp. 874-876

Follow link

[7]
Schopflin, K. (2015) 'Information management approaches to digital asset management: A case study in success and failure', *Journal of Digital Media Management*, 3(4), pp. 309-319

Follow link

[8]
Alexander, F. (2012) 'Building bridges: Linking diverse classification schemes as part of a technology change project', *Business Information Review,* 29(2), pp. 87-94, doi:10.1177/0266382112446284

[9]
Sangani, K. (2014) 'Beyond The Red Button [Research and Design of BBC]', *Engineering and Technology,* 9(6), pp. 66-69, doi:10.1049/et.2014.0610

[10]
Parahar, M. (2020) 'Difference Between Digital And Analog Systems', *tutorialspoint, Available at:* https://www.tutorialspoint.com/differences-between-digital-and-analog-system, (Accessed: 15th November 2021)

[11]
Marshall, B.(2000) 'What's the Difference Between Analogue and Digital Technology?', *HowStuffWorks,* Available at: https://electronics.howstuffworks.com/question7.htm, (Accessed:12th November 2021)

[12]
Daniel, E. and Ward, J. (2013) 'BBC's DMI Project Failure is a Warning to all Organisations', *ComputerWeekly,* Available at: https://www.computerweekly.com/opinion/BBCs-DMI-project-failure-is-a-warning-to-all-organisations, (Accessed: 25th November 2021)

[13]
NAO. (2011) 'The BBC's Management of its Digital Media Initiative', *London: National Audit Office*, Available at: http://downloads.bbc.co.uk/bbctrust/assets/files/pdf/review_report_research/vfm/digital_media_initiative.pdf (Accessed:1st November 2021)

[15]
Espiner, T. (2011) 'MPs criticise BBC-Siemens £38m contract failure', *zdNet-Tech Industry,* Available at:' https://www.zdnet.com/article/mps-criticise-bbc-siemens-38m-contract-failure/ (Accessed: 15th November 2021)

[16]
WiredGov (2014) *BBC's Digital Media Initiative a complete failure, Available at:* https://www.wired-gov.net/wg/news.nsf/articles/BBCs+Digital+Media+Initiative+a+complete+failure+10042014150500?open (Accessed: 14th November 2021)

[17]
Sweney, M. and Conlan, T. (2013) 'BBC took too long to realise DMI project was in trouble', Available at: https://www.theguardian.com/media/2013/dec/18/bbc-dmi-project-pwc-report (Accessed: 20th November 2021)

[18]
PAC (2014) 'BBC Digital Media Initiative', *House of Commons Public Accounts Committee,* Available at: https://publications.parliament.uk/pa/cm201314/cmselect/cmpubacc/writev/bbc.pdf (Accessed: 10th November 2021)

[19]
Accenture (2013) *BBC DMI Technical Review: Hypothesis and Findings from Independent Technical Review (Phase 1)*, Available at: http://downloads.bbc.co.uk/aboutthebbc/insidethebbc/howwework/reports/pdf/bbcreport_dmi_technicalreview_hypotheses_and_findings.pdf (Accessed: 12th November 2021)

[20]
Carayannis, E.G. (2018) *British Broadcasting Corporation: The Digital Media Initiative, Available at:*
https://zenodo.org/record/1436008/files/British%E2%80%8B%20%E2%80%8BBroadcasting%E2%80%8B%20%E2%80%8BCorporation.pdf?download=1 (Accessed: 13th November 2021)

[21]
ADB (2018) 'Value for Money: Guidance Note on Procurement', *Asian Development Bank,* Available at: https://www.adb.org/sites/default/files/procurement-value-money.pdf (Accessed: 11th November 2021)

[22]
NAO. (2014) 'British Broadcasting Corporation - Digital Media Initiative', *London: National Audit Office*, Available at:
https://www.nao.org.uk/wp-content/uploads/2015/01/BBC-Digital-Media-Initiative-summary.pdf (Accessed: 20th November 2021)

[23]
Evans, N.D. (2015) 'How digital business disrupts the five forces of industry competition', *Managing Innovation and Disruptive Technology,* Available at:
https://www.cio.com/article/2976572/digital-disruption-from-the-perspective-of-porters-five-forces-framework.html (Accessed: 25th November 2021)

[24]
Shrikhande, S. (2001) 'Competitive Strategies in the Internationalization of Television: CNNI and BBC World in Asia', The Journal of Media Economics, 14(3), pp. 147-168, doi:10.1207/S15327736ME1403_2

[25]
Onen, S.M. and Tanyildizi, N.I. (2010) 'The Administrative Supervision of Broadcasting of the Turkish Radio Television Corporation (TRT): Can the British Broadcasting Corporation (BBC) Provide a Model?', *TODAĐE's Review of Public Administration,* 4(3), pp. 121-147

Follow link

[26]
Gupta, V. (2019) 'Procurement Strategies for Digital Supply Chains: Concepts and Best Practices', *Technology optimization and change management for successful digital supply chains*, pp. 17-38, doi:10.4018/978-1-5225-7700-3.ch002, IGI Global

Follow link

[27]
Marnewick, C. and Einhorn, F. (2019) 'The Business Case thrives on relevant information', South African Journal of Information Management, 21(1), doi:10.4102/sajim.v21i1.978

[28]
Einhorn, F., Meredith, J. and Marnewick, C. (2020) 'Business case effectiveness: the critical role of the organization', International Journal of Managing Projects in Business, 13(5), pp. 1051-1075, doi:10.1108/IJMPB-10-2019-0255

[29]
Kelly, É. V. (2010) 'Governance rules! The principles of effective project governance',
Conference Paper presented at PMI Global Congress, North America, Washington DC.

Follow link

[30]
Mudassar, M.G., et al. (2019) 'Impact of Development Perspective of HRM and Lesson Learned
System of Knowledge Management on Project Success Through Project Management
Competency Retention', *Journal of Independent Studies and Research-Management: Social
Sciences and Economics,* 17(1), doi:10.31384/jisrmsse/2019.17.1.4

[31]
Vine, R. (2018) 'The Intelligent Client', *University of Sussex, Available at:*
https://core.ac.uk/download/pdf/157854925.pdf (Accessed: 15th November 2021)

[32]
Watton, A. (2014) 'How having a strong intelligent client function will save you millions', *Best
Practice Group,* 18th August, Available at:
https://www.bestpracticegroup.com/strong-intelligent-client-function/ (Accessed: 22nd November
2021)

[33]
Yescombe, E.R. (2002) *Principles of Project Finance,* USA, California: Academic Press

Follow link