Sowing the Seeds of Value? Persuasive Practices and the Embedding of Big Data Analytics

Jeffrey Hughes[1]

Kirstie Ball

School of Management, University of St Andrews

The Gateway, North Haugh

St Andrews, Fife,

KY16 9RJ

1. **Corresponding author**

ABSTRACT

This paper draws on data from three organisational case studies and expert interviews to propose that persuasive practices are the precursors and enablers of analytical capability development. A bundle of seven practices was identified and observed to bridge multiple gaps between technical and non-technical colleagues on big data analytics (BDA) projects. The deployment of these practices varied according to the level of BDA maturity and featured a host of socio-material elements. This paper complements existing technical case studies with a fine-grained qualitative account of the managerial and human elements of BDA implementation. Effective deployment of persuasive practices potentially both embeds the benefits and mitigates the risks of BDA, sowing the seeds of many different forms of value.

Keywords: big data analytics; persuasion; practice; capabilities; value

1. Introduction

For the last decade, scholars, consultants, commentators and practitioners have been working to unpick the link between the deployment of Big Data Analytics (BDA) and the generation of competitive advantage (George, Haas and Pentland, 2014; Constantiou and Kallinikos, 2015). Although progress has been made at the firm-level of analysis, through the concept of Big Data Analytical Capabilities (BDAC) (Mikalef, Krogstie, Pappas and Pavlou, 2019; Mikalef, Pappas, Krogstie and Giannakos, 2018; Fosso Wamba, Gunesekaran, Akter, Ren, Dubey and Childe, 2017), there is still limited understanding of how the internal dynamics of BDA projects may enhance analytical capability or otherwise. The wider engagement of analytics implementation teams and their soft skills are espoused as crucial determinants of IT project success or failure (Verner and Evanco, 2005; Dillon and Taylor, 2015) but have not been the object of empirical study (Fosso Wamba et al 2017; Vidgen, Shaw and Grant, 2017). Case studies, where they do exist, tend to focus on technical rather than human processes (Fosso Wamba, Akter, Edwards and Chopin, 2015; Conboy, Mikalef, Dennehy and Krogstie, 2019) despite the latter being regularly signalled as important by the practitioner press for some years now. A consensus on the requirement for organisations to adopt a broader lens that goes beyond technical considerations when deploying BDA has also formed amongst the academic community (Mikalef et al., 2018; Mikalef, Pappas, Krogstie and Pavlou, 2020). Yet, an understanding of how organisations overcome the challenges associated with realising value and establishing competitive advantage from BDA will remain incomplete until the non-technical dimensions of BDA projects are thoroughly explored (Chiang, Grover, Liang and Zhang, 2018; Hindle, Kunc, Mortensen, Oztekin and Vidgen, 2020). Hence, we position this qualitative, case-based study as adding to the limited stock of knowledge on the softer aspects of embedding BDA.

The central question of this paper concerns how non-technical colleagues are persuaded to engage in BDA projects in a way which builds value. Drawing on data gathered from expert interviews and three organisational case studies addressing marketer engagement with BDA, this paper finds that non-technical colleagues are engaged through a series of seven persuasive practices deployed by analysts. Explicitly adopting a practice analytical lens (Jarzabkowski and Spee, 2009) it argues that persuasive practices are central to the routine embedding of BDA beyond the boundaries of the IT function and contain the seeds of analytical capability development as set out by BDAC scholars.

The paper makes a number of contributions. First, it sets out how technical and non-technical specialists engage with each other in BDA projects. Second it deploys a practice theoretical lens which is rare in studies of BDA and IS implementation. This lens allows the fine-grained, socio-material, within-project interactions to be examined, which then enables the foundations of BDAC to be traced (Orlikowski, 2007). In doing so, it adds a new level of analysis to the study of BDA implementation, as those which deploy dynamic capabilities perspectives generalise up from their findings and miss the finer detail. Third it provides further evidence as to the importance of soft skills in IT projects, elaborating on the newly identified role of persuasion (Liu, Wang and Chua, 2015). Finally, it connects several strands identified in the practitioner literature under a single theoretical banner. The following pages set out the relevant literature, analytical lens, cases and method, before explaining the persuasive practices in more detail. The paper concludes with a discussion on the study's contribution to knowledge.

2. Literature Review

To frame persuasion as a component of BDA projects, the paper adopts an holistic definition of BDA as 'an approach to manage, process and analyse 5Vs (i.e. volume, variety, velocity,

veracity and value) in order to create actionable insights for sustained value delivery, measuring performance and establishing competitive advantages' (Fosso Wamba et al., 2017, p. 356). Managerial and human processes are central to this definition which implies that the embedding of analytics across the organisation is as much a social and political endeavour as it is a technical one. The focus on the skill, structural and leadership gaps in BDA implementation found in the practitioner press speaks to the importance of these managerial and human processes (Shah, Horne and Capella, 2012; Barton and Court, 2012; Berinato 2019).

In spite of practitioner concerns there are very few studies which address these gaps, with extant work choosing to generalise upwards using quantitative methods or focusing on the technical detail of implementation. This paper presents a fine-grained study of the interactions between technical and non-technical project members and proposes that persuasion is a key process in BDA implementation. Inherently social and political in nature, persuasion involves 'attempting to change a person's conviction or mind through the use of evidence and reasons that positively portray the preferred state of affairs' (Huma, Stokoe and Sikveland, 2019, p. 35) and features in consensual as well as coercive politics (Bakir, Herring, Miller and Robinson, 2018). The literature review proceeds to theorise how persuasion may bridge this gap between technical and non-technical colleagues and how it may sow the seeds of value.

2.1. Mind the gap: Persuasion and the human components of BDA capabilities

As with all socio-technical systems, it is important to understand how BDA's human and technical elements combine to produce such a gap (Galliers, Newell, Shanks and Topi, 2017; Markus, 2017). Sanders and Condon (2015) refer to this process as a "mangle" with data "only made meaningful and actionable through the interpretive and analytic processes of

people" (Sanders, Christenson and Weston, 2015, p. 191). Yet, extant BDA research has largely ignored this espoused gap by overlooking the roles, experiences and contexts of the humans working with BDA in favour of its more technical aspects (Abbasi, Sarker and Chiang, 2016; Sanders et al., 2015; Conboy et al., 2019). Where recent work has started to slowly shift attention towards socio-technical features of BDA (Günther, Rezazade Mehrizi, Huysman and Feldberg, 2017), it has done so through exploring topics including socio-technical forms of inertia (Mikalef, Van de Wetering and Krogstie, 2018), BDA actualisation mechanisms manifested in actions on three socio-technical system levels (Dremel, Herterich, Wulf and Brocke, 2020), and the importance of senior management support and technological competence (Sun, Hall and Cegielski, 2020). However, the literature is at a nascent stage of development and "lacking empirical evidence and theoretical foundations with which to illuminate how an organisations' actions lead to the realization of BDA value" (Dremel et al. 2020, p. 1). A majority of papers examine performance, focusing on what BDA comprises rather than how BDA is embedded and leveraged (Akoka, Comyn-Wattiau and Laoufi, 2017). As a result, there is currently a limited understanding of the socio-technical encounters which occur in big data projects (Mikalef et al., 2018; Pappas, Mikalef, Giannakos, Krogstie and Lekakos, 2018), leaving the BDA literature unclear about how analytics functions are embedded and how they interact with other organisational areas (Scarlet and Tarraf, 2015; Jobs, Gilfoil and Aukers, 2016; Storey and Song, 2017).

This lacuna in the BDA literature elides the aforementioned concerns about engagement gaps between data analysts and wider organisational constituencies. Research using the dynamic capabilities lens has made some progress in this respect, identifying within-firm variables that are likely to impact value generation from analytics (Mikalef, et al., 2019; Mikalef et al., 2018). Personnel management, technology infrastructure and decision making (McAfee and Brynjolfsson (2012); culture, platform and skills (Kiron, Prentice and Ferguson, 2014) and

management capability (Barton and Court, 2012) are identified as crucial components (Wamba et al., 2015). Using quantitative methods, Wamba et al (2017) then show that three second order variables: Personnel capability, BDA Management Capability and Infrastructural Flexibility are foundational to big data analytical capability (BDAC) and value generation. Whilst an array of first order variables potentially address some of the finer detail, results are generalised to firm level, leaving important details about the human elements of BDA projects unexplored (Conboy et al., 2019).

The quality of the connection between analytical teams and the wider organisation is partially addressed in Fosso Wamba et al.'s (2017) BDAC model in the first-order variable 'Relational Capability'. Relational Capability refers to analysts' project management skills, their ability to work collectively, to teach and to manage client relationships and positions them as one of the foundations of personnel capability (Kim, Shin and Kwon, 2012). These components of relational capability overlap strongly with elements of IT project management, and a closer look at this literature provides a more comprehensive overview of what is required. Project Management principles suggest that project managers need to have a combination of hard and soft skills, among other things, for a project to succeed (Millhollan and Kaarst-Brown, 2016). 'Hard' knowledge of tools, systems, budgeting and scheduling, is understood to be mobilised by 'soft' skills, which engage stakeholders across the organisation. Empirical observations of these skills in action are a rarity in the IT project area yet Repertory Grid studies have produced nine espoused skill categories: client management, communication, general management, leadership, personal integrity, planning and control, problem solving, systems development and team development (Napier, Keil and Tan, 2007). Recent, grounded theory-based assessments of IT project management skills have suggested that multiple communication competences, including persuasion, underpin the deployment of many of these soft skills. These multiple competences include decisions about what to communicate,

with whom, how and when as well as functional communication skills such as listening or presenting (Dillon and Taylor, 2015). Furthermore, persuasion has been suggested to account for how this communication unfolds across internal organisational boundaries, the same boundaries which create gaps in engagement between technical and non-technical engagement in BDA projects (Liu et al., 2015). As a result of this work we suggest that a fine-grained, qualitative approach to persuasion is warranted to explore how the technical and non-technical organisational gaps which pervade BDA implementation may be bridged.

2.2. *Persuasion in BDA projects*

Persuasion research began in the 1980s and has its origins in the study of marketing communication and leader influence. Research focuses on communication content and style, exploring the cognitive processes undergone by a target of persuasion as they receive information from another which is designed to change their opinion (Khantimitirov and Karande, 2018; Campbell and Kirmani, 2000; Friestad and Wright, 1994; Holmes, 2017; Petty and Cacioppo, 1986). Here, persuasion is narrowly defined as the deployment of logical arguments and factual evidence and is one of many influencing tactics. Keen to explore the dynamics of which tactic is the most influential in which circumstances, this literature explores the choice of influence tactics in multiple settings and situations (Kennedy, Fu and Yukl, 2003) through standardised questionnaires and taxonomies (e.g. Schriesheim and Hinkin, 1990; Yukl, 2002; Yukl and Tracey, 1992). Influencing tactics beyond rational persuasion include consultation, where targets participate in planning activities; inspirational appeals, where values, ideals and aspirations are invoked; ingratiation, focusing on the mood of the target; personal appeals, where notions of friendship and loyalty are invoked; exchange, where reciprocities are mobilised; coalition, where aid and support is sought from the target; legitimation, where authority is used to persuade and finally pressure, which has already been discussed above. The one persuasion study found in IT project management is

inspired by the leadership literature and examines upward persuasive tactics by IT project teams. Liu et al. (2015) established that rational persuasion and exchange were the most engaging tactics for senior managers but did not examine non-technical colleagues in other areas, such as marketing.

The lack of any fine-grained study into the detail of how non-technical colleagues engage leaves room to address persuasion in a more inclusive, qualitative way. Such an examination will reveal how it unfolds at the micro-level, how gaps are bridged and how value starts to emerge. In a manner which mirrors recent case studies of BDA projects, we set out to capture the socio-material aspects of persuasion in BDA projects by deploying a practice-centred research strategy and viewing persuasion through a practice analytical lens.

3. Method and cases

3.1. The Practice Perspective

Practices are theorised activities which represent routinised types of behaviour across contexts. They comprise socio-material elements such as "… forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge" (Reckwitz, 2002, p. 249). They also have flexible boundaries, allowing for iteration and adaptation (Vaara and Whittington, 2012) and are found in 'bundles', overlapping with each other rather than being discrete and independent. Identifying a series of activities as a practice involves constructing them theoretically when patterns of inter-related activities occur in parallel organisational settings (Jarzabkowski and Spee, 2009).

The origins of the practice perspective lie in the work of Wittgenstein (1951) and Heidegger (1962), subsequently proliferating in social theory, most prominently in the work of Giddens (1976), Bourdieu (1990) and de Certeau (1984). The social-theoretical concept of practice has

been operationalised most notably in the Strategy-as-Practice literature which has recently reached the IS domain (Jarzabkowski and Spee, 2009; Vaara and Whittington, 2012; Whittington, 2014, 1996).

Conducting practice-oriented research involves the micro-sociological observation of that which is done, by whom and when and then tracing its wider organisational effects. The practice perspective has its own analytical language: practitioners and their praxis are observed within particular time periods or "episodes". Praxis is the "vast social enterprise of day-to-day activity" (Campbell-Hunt, 2007, p. 794) and any patterns and similarities in praxis across contexts indicates the presence of shared or common practices (Vaara and Whittington, 2012). Practitioners are widely defined to include individuals and groups both internal and external to the organisation (Jarzabkowski and Whittington, 2008). They engage in praxis and, in doing so, may enact organisational practices mirrored in other contexts and settings (Jarzabkowski, Balogun and Seidl, 2007). Practices can also enable features of institutions to be identified in that they occur at the intersection of "the actions of different, dispersed individuals and groups and those socially, politically, and economically embedded institutions within which individuals act and to which they contribute" (Jarzabkowski et al., 2007, p. 9). These elements coalesce within an episode: a series of events which is a "sequence … structured in terms of its beginning and ending" (Hendry and Seidl, 2003, p. 176). Episodes may be formalised in the guise of a predetermined event or meeting or more informal gatherings of practitioners in the shape of sporadic conversations akin to the commonplace "water cooler" chats.

The practice lens described above was deployed as a research design approach and as an analytical lens. A practice-oriented semi-structured interview was deployed in which participants were asked to describe what they had done to engage with either technical or non-technical colleagues. A comprehensive array of practitioners were interviewed, including

those both internal to the case organisations such as senior managers, marketing specialists and big data analysts and those who are external to the organisation such as consultants, leading competitors and thought leaders. Both formal and informal episodes were explored in the interviews. During the coding phase, the practice perspective was used as a sense-making device to engender recognition of the practitioners involved and the types of episode in which praxis occurred. Then, data were interrogated for evidence of routinised persuasion praxis spanning the case sites that could then be theorised as normalised practices. The cases, data gathering, and analysis are now described in more detail.

3.2. Cases

Data are drawn from three organisational case studies (see Table 1 for high-level case information) featuring fifteen interviews, in addition to fourteen expert interviews. Table 2 summarises the interviewee characteristics. Each organisation was at a different stage of BDA maturity, but in each case BDA practitioners and internal marketing functions engaged with each other over BDA developments. Case Study A was at the early stages of establishing an analytics capability in-house. Six interviews were conducted with a mixture of marketing professionals and data scientists. Case Study B was an organisation at an early/mid-stage of analytics usage. It had recruited and embedded a data scientist within its marketing department, where three marketing professionals were interviewed. Due to the relatively nebulous stage of development combined with the geographic spread of the organisation, the pool of suitable, accessible interviewees was somewhat restricted. At the time of access these were the core personnel involved in embedding BDA. Case Study C had reached a maturity stage in relation to its BDA capacity, with analytics interwoven into the fabric of the organisation and the service it provided. Six interviews were conducted in Case Study C with a range of dual-skilled marketing/analytics professionals and the former Chief Operating Officer (COO) who played an integral role in establishing the organisation's

Case	Sector	Industry	No. of Employees	BDA Maturity Stage	Area of Analytics Deployment
A	Public	Economic development	1,000	Early stage	-Interrogate existing data in new ways -Enhance data capture accuracy -Improve stakeholder identification, segmentation, and behaviour monitoring
B	Private	FMCG	600	Early/mid stage	-Capture data consistently across markets and locations -Foster collaboration across markets and locations -Record and analyse consumer data captured at customer centres
C	Private	Technology	1,000	Mature stage	-Enable scientific, data-based decision-making -Offer value-adding products for consumers -Compete with rival service offerings

Table 1: High-level Case Information

Case Study Interviews			
Organisation	**#**	**Technical / Non-technical**	**Job Title**
A - Economic Development Agency	1	Technical	Intern Data Scientist
	2	Technical	Intern Data Scientist
	3	Non-technical	Brand Marketing and Specialist
	4	Non-technical	Marketing Specialist
	5	Non-technical	International Marketing Senior Executive
	6	Non-technical	Marketing Specialist
B – FMCG Producer	1	Non-technical	Marketing Effectiveness Manager
	2	Non-technical	Global Head of Digital
	3	Non-technical	Business Relationship Manager
C - Search Engine Provider	1	Technical	Principal Data Scientist
	2	Technical	MarTech Lead
	3	Technical	Engineering Lead
	4	Technical	Data Analytics - Products
	5	Non-technical	Director, Growth
	6	Non-technical	Former COO
Expert Interviews			
Digital Marketing Strategy Agency	1	Technical	Project Manager - Analytics
	2	Technical	Project Manager – Web Analytics
	3	Technical	Head of Analytics
Strategy Analytics Consultancy	1	Technical	Senior Consultant
	2	Technical	Senior Manager
Software Provider	1	Technical	Digital Analyst
AI Software Provider	1	Non-technical	Head of Customer Success
	2	Technical	Head of Data Science
Big Four Consultancy	1	Technical	Data Science Consultant
	2	Technical	Consulting Associate
	3	Technical	Data Scientist
Insurance Provider	1	Technical	Group IT Director
	2	Non-technical	Consultant
Media Publication	1	Technical	Head of MarTech

Table 2: Interviewee Characteristics

current structure. The expert interviews comprised consultants working across organisations and industry key informants who claimed to have embedded BDA in a commercially successful way. The expert interviews provided important contextual information as to the commercial, value contributions of BDA, its range of uses and its internal development process. This information assisted in the orientation of conversations with case study

participants and our interpretation of their organisations' level of BDA maturity. Each case will now be introduced.

3.2.1. Case Study A

Case Study A was an economic development agency and a non-departmental public body. It worked with a range of local, national, and international organisations across both the public and private sectors. The organisation had recently undertaken a restructuring of its marketing function, resulting in the formation of a new marketing-focussed team with a greater emphasis upon insights derived from analytics. The organisation had not employed any data scientists, but rather was upskilling existing marketing professionals. As an interim solution, two data science students were recruited on a Summer internship programme. The organisation recognised a skills gap with its existing staff but also noticed that they had an appetite to learn. Members of the new team viewed this formalisation of data analytics deployment as an extension of existing, more rudimentary practices already found in the marketing function. The organisation recognised that it had a wealth of customer data but had been unable to interrogate and gain insight from it in any meaningful way. A key element of its data analytics strategy was to improve the quality of collected data and transition away from more manual data entry techniques that resulted in data record inaccuracies. It also wanted to better identify, segment, and monitor the behaviours of its various stakeholders, such as international investor audiences. This transition to a greater focus upon BDA was being led by a technically literate executive who was passionate about data and viewed analytics as a means to provide more tailored, personalised offerings to customers.

3.2.2. Case Study B

Case Study B was a global organisation in the Fast-Moving Consumer Goods (FMCG) sector. It had many brands listed in the global top 100 by impact with annual sales into the

€billions. Access was gained to a particular geographic territory in which BDA was assuming an increasingly prominent position within its marketing function. Each region retained autonomy and assumed responsibility for aligning with wider organisational strategy. The decentralised model employed was dependent upon frequent engagement between and across all entities. Indeed, BDA was seen as a mechanism to homogenise the types of data collected across locations that could then facilitate collaboration across the markets in which the organisation competes. In addition, Case Study B was attempting to better exploit rich data collected at large customer centres located within the geographic region to which the co-authors gained access. At the time of access, Case Study B had recently hired an experienced data analyst who previously held positions at Facebook and Google. Their role was to assess all data sources with a view to how they could be better employed to gain consumer and market insight. Wider organisational stakeholders viewed Case Study B's utilisation of a data scientist within the marketing function as an uncommon approach. The data scientist acted as a liaison with HQ when information was cascaded or where access was provided to HQ tools and platforms. The first task assigned to the newly hired data scientist was to make a business case that made both themselves and their role indispensable. This was done through demonstrating the value of the position back to the business by delivering actionable insights in such a way that was visualised and made interesting to marketing and senior business management. Similar to Case A, a senior executive in the form of the organisation's CEO was the driver of change.

3.2.3. Case Study C

Case Study C was a data-driven, Internet-based search site with tens of millions of users each month. Its products were available in more than 30 languages and 70 currencies with over 1,000 staff employed in offices spanning the globe. The organisation's unique competency resided in its proprietary technology. Whilst vendors were occasionally engaged, most

development was carried out internally. In doing so, Case Study C believed it derived more scale and value from its data. A data-driven culture existed in which scientific, data-based decision-making was prevalent across all organisational employees. Where it did engage third parties for data analytics-related problems, it was with a view to shorter-term solutions. The service offered was free to users, with revenues generated through partner commissions and advertising. BDA was used to offer value-adding products to consumers. Case Study C was cognisant of BDA trends and viewed the effective use of BDA as a pre-requisite for competing within its marketplace. Prompted by developments amongst its peers in the Internet economy and more specifically in Silicon Valley, the organisation took the decision to reimagine its marketing function 3-4 years prior to the current study by transitioning from more traditional, siloed marketing and analytics functions to embedding data analytics within marketing. This process resulted in a new function that was no longer labelled as 'marketing'. The new function was a combination of classic marketing combined with a data analytics scientific approach. This significant recalibration was enabled by strong sponsorship from senior levels of the organisation that engendered a collaborative, cross-functional working environment.

3.3. Data Gathering and Analysis

Data were gathered using semi-structured interviews as the primary data source (Kvale, 1996; Mojtahed, Nunes, Martins and Peng, 2014). Each interview adhered to an agreed protocol in relation to recording techniques, the descriptive process, whether or not feedback would be provided and additional ethical concerns that conformed with the researchers' institutional ethical standards (Myers and Newman, 2007). Questions were open-ended in order to elicit the interviewee's own perspective. The requested duration of each interview was 60 minutes. Interviews remained within the designated timeframe, depending on the interviewee, their level of engagement, and their allowance of time discrepancies. The interviews were audio

recorded and transcribed verbatim into text by a professional transcription service. Interview transcripts were accessed by the researchers via password protected web portals. They were verified for accuracy through comparison with their corresponding recording, with no errors of concern discovered.

The data analysis was carried out collectively by the co-authors during three day-long coding workshops. Data were coded in QSR NVivo. Following Vidgen et al. (2017, p. 630), the objective of the workshops was to code the data and "tease out, remove duplicates, summarise and categorise" the codes. This process afforded an opportunity to debate the codes before reaching consensus as to their veracity. The co-authors individually reflected upon the coding process between workshops and raised points for consideration at subsequent meetings. The authors adopted Maykut and Morehouse's (1994) coding strategy, an approach premised upon Grounded Theory principles (Charmaz, 2006; Glaser and Strauss, 1967; Strauss and Corbin, 1990). 86 codes were identified during the first phase of open coding. These codes were generated by identifying and grouping chunks of text which represented participants' accounts of engagement between technical and non-technical colleagues. The theme of persuasion emerged across many of these codes. The refinement and classification of these codes produced 29 categories relating to all incidences of persuasion. Assigning these categories to higher-order concepts produced 7 broad themes that represent a formative, practice-oriented view of the work undertaken by BDA practitioners to persuade marketers to engage with BDA. Each theme was analysed to identify practitioners and their persuasive praxis which was then compared across organisational contexts. This enabled persuasive practices and their components, purpose and effects to be identified. The effects of the practice were mapped onto Fosso Wamba et al.'s (2017) BDAC model which enabled the authors to reflect on how the persuasive practices contained the seeds of analytical capability.

Case reports were shared with a key interviewee from each case site to validate findings. The seven persuasive practices are described below.

4. The Persuasive Practices

This section sets out the theorised bundle of persuasive practices which emerged from the data. This bundle of practices helps to identify different modes of technical and non-technical colleague engagement on BDA projects as well as the seeds of analytical capability which run through them. Seven persuasive practices were identified and rank ordered according to the number of coding references across the cases (see Table 3 and Figure 1). The practices within the bundle overlap with one another, although they have different emphases and combine socio-material resources in different ways. Figure 1 shows the distribution of the persuasive practices across three case studies, illustrating that they were more than distinct, one-off instances of praxis confined to a single organisational context. Table 4 illustrates the persuasive content of each practice, the purposes for which the practices were deployed and their connection to current conceptions of analytical capability. Table 5 illustrates the socio-material resources that were assembled as the practice was deployed.

	Case and n-coding reference/Practice	Case A	Rank	Case B	Rank	Case C	Rank
1	Involving data scientists throughout marketing projects	24	**1**	30	**1**	38	**1**
2	Translating from the language of data to other organisational languages	23	**2**	26	**2**	28	**2**
3	Demonstrating proof of concept	19	**3**	24	**= 3**	25	**4**
4	Establishing value	0	**7**	24	**= 3**	27	**3**
5	Visualising analytics	17	**4**	22	**4**	23	**5**
6	Staging persuasion	11	**5**	13	**5**	0	**= 6**
7	Appealing to idealised future states	10	**6**	11	**6**	0	**= 6**

Table 3: Elements of the persuasive practices bundle

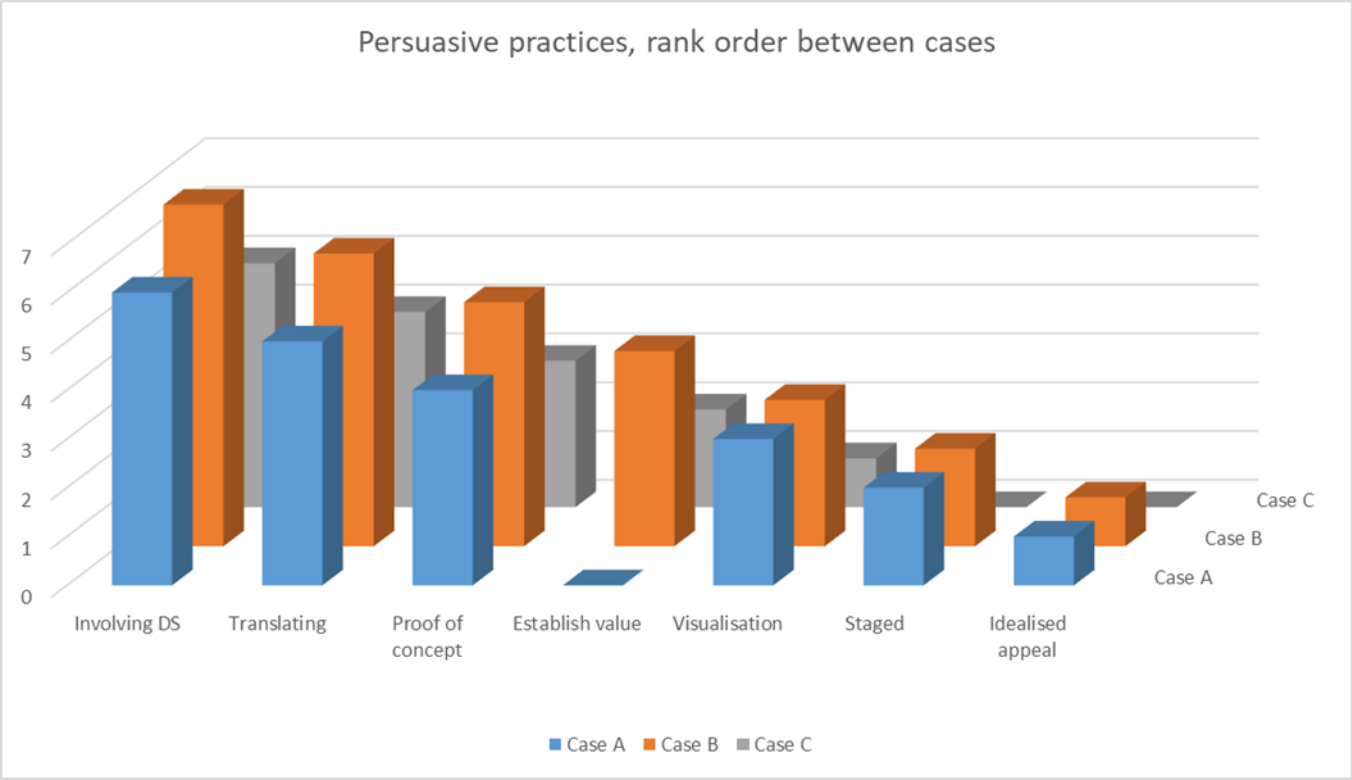

Figure 1. Persuasive Practices, rank order between cases

Persuasive practice	Persuade non-technical colleagues:	Seeds of BDAC creation (Wamba et al 2017)
Involving data scientists in marketing projects	• To see themselves and their marketing projects through a data lens from cradle to grave with the help of a data scientist • To help to close the gap between data science and marketing, overcoming organisational silos • To use analytics output to make marketing more efficient, effective and faster and to help salespeople know what they are selling and to whom	***Personnel capability*** • Orienting the thinking of more creative marketers towards data • Enabling marketers' personal development as marketing analysts rather than pure data scientists ***Business capability*** • Gaining a more accurate picture of affairs and avoiding post-hoc rationalisation, retrofitting data to the story • Building a way of working that channels information to the right decision makers so that it can be acted upon, addressing and solving problems in real time ***Infrastructural flexibility*** • Determining what can and can't be measured • Ensuring consumer behaviour is properly hypothesised, assets are appropriately tagged and correct data are captured
Translating from the language of data into other organisational languages	• To find the common ground and the shared problem with analysts, who use marketing vernaculars to try to engage marketers with the idea of data	***Personnel capability*** • Enabling marketers and analysts to understand the digital space together, sense checking understanding on both sides and breaking down barriers and gaps by spelling them out • Exciting marketers about analytics ***Business capability*** • Enabling marketers to make the connection between digital and business performance
Proof of concept	• To see for themselves what analytics can do and to see how collaborating with analysts can add value	***Personnel capability*** • Showing marketers how data can work for them and how they can use analytics • Prompting marketers to collaborate with analysts ***Business capability*** • Demonstrating how optimising pages, data and websites to yield data can add value • Introducing the latest new techniques and what they can do • Demonstrating tangible outputs in case studies • Underpinning the importance of designing projects with data embedded from the start • Showing marketers that it can make their job easier • Externalise all that has been done into a knowledge base
Establish value:	• That it is difficult to get commercial results from using analytics, it's not just a matter of pressing a button	***Personnel capability*** • Lending legitimacy to the skills of the data scientist • Enabling marketers to understand what an IT project is so that they become advocates for analytics ***Business capability***

		• Recasting the IT project as a broader project within the organisation and create the links to various local and organisational KPIs • Making markets more transparent and knowable in advance of the IT project • Understanding reasons for poor performance and help to diagnose change • Enabling stakeholders to tell others about successes and explore reasons for failure ***Infrastructural flexibility*** • Emphasising what is lost when opportunities to measure are lost • Building effective reporting from the start
Visualisation	• To realise that analytics, despite its complexity, is easy to relate to and is not intimidating, unfamiliar or boring	***Personnel capability*** • Presenting data in an appealing way so that it is interesting to marketers • Making analytics and the presence of a data analyst seem normal • Making analytics accessible to a wider range of people • Cutting through jargon and technical language ***Business capability*** • Instigating organisational change • Introducing ideas of a customer journey through a website ***Infrastructural flexibility*** • Moving away from excel as a stereotype of inaccessible data • Automating analysis
Staged persuasion	• To take time away from the working day to focus on analytics through either training, 'show and tell', weekly knowledge exchange sessions, projects and homework, presentations to wider organisation, featuring internal and external expertise	***Personnel and Business capability*** • Generating internal audiences and interest
Appeals to idealised future states	• To invest in analytics now because it will pay off in future	***Personnel capability*** • Engendering recruitment of correctly skilled staff to support analytics ***Business capability*** • Creating an organisational environment which is open to change and can be capitalised on • Overcoming inertia of long held practices, and outflank resistance by a traditional marketing workforce • Sharing the benefits of analytics back to the business • Enable demands from the rest of the business to be met

Table 4: The persuasive practices, their content and effects, illustrating where the seeds of value are sown

Persuasive practice	Promoting non-technical engagement with:	Socio-material components of the persuasive practices
Involving data scientists:	Operational issues and marketing project design	*Non-human*: Website coding, data, social listening (on social media), website traffic, marketing projects and campaigns, reports, KPIs, data modelling techniques, user interfaces, organisational structures, skills gaps. *Human*: Salespeople, appropriately skilled consultants, creative marketers, traditional marketers, dually skilled marketers, decision makers, analysts, teams, skillsets, mindsets, past experience in other companies
Translating:	Shared problems and a common digital community	*Non-human*: 'the digital space', projects, content, campaign, knowledge exchange and flow, data, reports, analyses, recommendations, organisational structures and silos *Human*: Excitement, expectations, needs, requirements, boredom, dislike, disengagement; brand language, commercial language, layman's terms, data-centric language; customers, marketers, the digital community, creatively skilled marketers, analysts skilled at communication,
Proof of concept:	What analytics can do through case studies and success stories	*Non-human*: Campaigns, consumer journey through the website, case studies, programmatic media, social content, case studies, tangible outputs, new techniques, systems, dashboards, data quality, tests, documentation, types of data, hypotheses, measurement targets, team management techniques *Human:* the customer's 'click', marketing mindsets, web developers, senior marketing managers, project owners, digital team
Establish value:	How difficult it is to get commercial results, legitimating the skill of the analyst	*Non-human*: budgets, savings, money, spend, costs, algorithms, machinery, run model, programmatic data, behavioural data, modelling, mapping, markets, clicks, interfaces, marketing team structure, project management infrastructures, meetings, sales pitches *Human*: Expectations setting, data analysts' labour, marketers' understanding of marketers what analysts do and what an IT project is, customers, marketers move from luddites into advocates
Visualisation	Analytics outputs and their accessibility	*Non-human*: Google brand studio, demographic, markets, products, flexible real time filters, Tableau, colours, maps, PowerPoint, KPI, dashboard, benchmarks, working norms, tool set *Human*: finance, directors, CEO, stakeholders, marketing, senior management, marketing team members, lay marketers, mindset
Staged persuasion	Ideation and education about analytics away from the workplace	*Non-human*: End to end case study, presentations, skype, dashboards, software developments, call management, explicit knowledge *Human*: brand owners, marketing teams, external expertise, internal expertise, external speakers, tacit knowledge
Appeals to idealised future states	Data driven futures and their possibilities	*Non-human*: the organisation's internal environment, better marketing effectiveness, better marketing investment, ossified practices, future practices, the future business, better information flows, insights that can be capitalised upon *Human*: colleagues in marketing who are open to change, resistant people who are willing to find flaws, older workforce, top management support

Table 5. Persuasive practices and their associated socio-material elements

The practices are described in the following paragraphs. Each depicts different ways in which gaps between technical and non-technical colleagues were bridged.

4.1. Involving Data Scientists Throughout Marketing Projects

This persuasive practice involves the embodied placement of data analysts in marketing teams so that they could work with marketers from the start of marketing projects. This had the effect of designing data requirements in to marketing projects to produce greater insight as the project unfolded. Traces of all three forms of analytical capability are found in this persuasive practice. It was deployed to raise marketers' awareness of analytics and suggested that improved decision-making may be an outcome of the enhanced measurement of consumer behaviours. The socio-material elements of analysts, various types of marketer, their skills and experiences were brought together so that the projects on which they were working and their respective tools and techniques could be viewed through a data lens.

All of the interviewees emphasised that the gap between data analysts and marketing was something that needed to be overcome and that the placement of analysts in marketing teams was a key way in which this could be achieved. In Cases A and B analyst placement enabled marketers and data specialists to develop mutual understanding. Data specialists would be exposed to marketing projects and ideation sessions, which would help them understand the marketing vernacular. In turn, marketers would be helped to understand what could and could not be measured. Effective reporting on a project's performance would then be available from the start rather than making it fit retrospectively. Interviewee B1 noted it helped to demonstrate to marketers "how data can help them from the very start before you even start your brief right through until the very end in terms of measuring performance. The advanced organisation had fully integrated marketing and data into a new function which encompassed both disciplines. Their activities focused on bringing new analytical solutions to bear on

operations quickly, efficiently, building new products and features, and building an analysis which solved meaningful problems. Interviewee C3 noted, however, that: "engineers and product people… still have this bias towards if you built a wonderful product people will come and use it" whereas marketers would be aware of the need to convince people to use a product. Gaps in mindset are explored further in the next persuasive practice.

4.2. Translating from the Language of Data to other Organisational Languages

This persuasive practice involves analysts and marketers developing mutual understanding through a common language. Traces of personnel and business capability development could be found in this practice. It enabled mutual understanding of analytics, representing personal capability development and allowed the links between analytics and business performance to be drawn. The socio-material resources referenced had strong affective and linguistic components, emphasising excitement and expectations as well as disengagement; lay terms as well as technical and 'brand' language. The construction of an organisational 'digital space' and 'digital community' in which data, reports, projects, content, campaigns, knowledge and recommendations circulated and in which technical and non-technical colleagues engaged was a central feature of this practice.

The problem, as stated by this interviewee from Case Study B was: "when you talk to a bunch of creative marketers and you mention the word data or data sets, their eyes start to glaze over" (Interviewee B2) and in Case Study C "there were a lot of people who I was talking to who didn't like data, they didn't like numbers, they didn't enjoy working like that" (Interviewee C2). Whilst Case Study C had combined the two departments into one which aimed to create a common language through integrative working, Cases A and B were still grappling with the problems of translation. Interviewee B2 described marketers as being in "a parallel world and they'll never make the connection. The connection will never be made

between digital initiative and business performance." Case Study B discovered that speaking in terms of the brand was a crucial step to enable a connection with marketers, suggesting "one phrase that seemed to resonate was talking to them about the fact that, today, data is another way for our brand to listen and learn." In Case Study A, data science and marketing were referred to as "distant" by interviewee A3. Nevertheless, the two data science practitioners helping with the first steps on the analytics journey were said to be "very good at articulating things in layman's terms. And a lot of the sessions, it's been us kind of playing it back or saying, okay this is what we think you mean by that. And just a bit of to-ing and fro-ing". A further comment described how marketing practitioners assisted in the translation, commenting that "traditional marketing skills including creativity and communication and understanding the customer, they're not going to change."

4.3. Demonstrating Proof of Concept

This practice involves data analysts demonstrating to themselves, their team and marketers that analytics can give tangible benefits: the equivalent of "showing the workings out" in a mathematical problem. Traces of personnel and business capabilities ran through this practice, as it raised awareness of the business benefits of analytics as well as the need for new working practices in marketing. When using this persuasive practice, interviewees referred to specific moments during presentations to marketing teams where they had used case studies and experiments as a form of persuasion. A host of socio-material elements were brought together to construct these case studies in front of marketing project owners, senior marketers and their respective mindsets.

All three participating organisations noted the importance of this practice. Interviewee B2 describes how their organisation has some near-future goals for proof of concept: "it's just about better exposure and more tangible outputs in case studies that we need to… deliver".

For Case Study B, proof of concept was to be generated from internal projects, but Case Study A who were even earlier in the BDA journey had to look elsewhere, as A1 explains: "it's a lot of trying to find examples of where it has helped individuals in organisations or where it has resulted in success externally with a particular customer". The advanced organisation conducted similar activities but in a much more routinised, episodic way, embedded into everyday practice as a way of developing shared learning: Interviewee C2: "Let's map out the tests that we are doing regularly together, how can we share our learnings with the team, how can we document them, in a similar way, how can we see what this hypothesis looks like and the types of data that we would need. How are we going to analyse it and how we might use it".

4.4. Establishing Value

This persuasive practice is used to persuade non-technical colleagues that gaining commercial value from analytics isn't just a matter of 'pressing a button', and that it is difficult to connect the complexities of data analytics with commercial success. Traces of all three types of analytical capability are found in the codes. The analysts' skills are legitimised in the eyes of marketers and marketers come to appreciate how IT projects work. IT projects are cast in the business context as analytics are used to explain and explore patterns in performance. The importance of capturing data in the right form and at the right time is emphasised. A wider range of heterogeneous resources were referred to in this practice: financial elements featured alongside technical, organisational and human elements.

Interview participants highlight the efforts needed to persuade non-technical colleagues of the importance of setting up a value-based outcome. In Case Study B, interviewee B3 describes how these difficulties are glossed over in their initial encounters with marketers: "I fight very hard to convince people that there is no such thing as an IT project, there are projects with IT

components, but an IT project to me doesn't exist." B5 describes: "We can give them support and advice, but actually sometimes when we see the data come back we're like, well, if you had reached out to us we could've given you more support". Case Study C, the developed organisation, emphasised the necessity to broadcast where analytics had added economic value. Interviewee C3 explains the success of this persuasive practice: "over the past one year, I focused all of my efforts as well on making the organisation realise the value of a holistic approach to a marketing technology stack which resulted in the reorganisation and reprioritisation of this stream of work" and further "the people who had started off being very reluctant, that became some of our strongest advocates when they really saw the value in the data". The least mature organisation, Case Study A, made no reference to establishing value because they were still experimenting very early in the analytics journey and hadn't operationalised anything consistently.

4.5. *Visualising Analytics*

Visualisation is one of the more widely known ways in which data can be more easily interpreted by practitioners with a non-technical background. As a persuasive practice visualisation was used to show that analytics was accessible to non-technical colleagues. Traces of all three analytical capabilities can be found in this practice. Comments have a high affective component, as visualisation is designed to appeal to marketers, demystify analytics and make it less intimidating, signalling personal capability development. The content of visualisations imputed business and organisational priorities as well as deploying new tools, techniques and datasets. Through visualisation, broad sets of human stakeholders interact with both novel tools and established ways of deriving business priorities.

Interviewee B2 explains "if you start producing reams of Excel spreadsheets, it's not going to convince them as to the value" and A6 agrees "Things like Tableau now where you get

insights without having a really technical background. And then more people within organisations that want to start using these techniques, it's made more accessible for a wider range for people." Numerous tools were deployed in the cases to visualise data: dashboards of various forms, Tableau, PowerPoint and Google Data Studio were mentioned by interviewees. The mature organisation routinely used Tableau for data visualisations and again cited its persuasive characteristics referring to a change in mindset. "We have come to a place where we now are reliant on real time dashboards. We use a tool called Tableau, to do data visualisation, based on a… store that we have with all of our data sets, and be able to really look and analyse and figure out what to do… there has certainly been an adjustment, also in terms of mindset as well as toolset."

The final two persuasive practices – staging persuasion and appealing to an idealised future state - only occur in the less mature Cases A and B, and do not occur in the developed organisation, Case C.

4.6. Staging Persuasion

This persuasive practice involves creating stylised persuasion episodes in which information about the benefits of analytics is disseminated formally to an audience. It is a deliberate attempt to engage non-technical colleagues away from their everyday working environment. The most common form of staged persuasion is the internal presentation, but themed days relating to innovation and new working practices were also formal episodic fora where staged persuasion about analytics takes place. These persuasion episodes feature polished case studies and thus contain traces of both personal and business capability development, represented in various success stories. In staged persuasion, a wide range of human stakeholders are brought together to engage with stylised versions of analytic projects, represented through case studies, dashboards, visualisation tools and software

demonstrations.

In Case Study B, the analytics team, whose internal title was the “effectiveness team”, were keen to promote their praxis around the organisation. Interviewee B1 explains that the presentations they do to marketing teams emphasise “the benefit of bringing us in at the start to sort of say, look, we're going to make sure that the journey's tagged. That we know if somebody clicks here or reacts to your campaign, we're going to capture the data correctly or we're going to capture their division journey correctly.” They then go on to discuss how the effectiveness team had booked out the organisation’s ‘connection day’, an episode which promoted learning across the organisation. During this event the team intended to “take them through an end-to-end case study example of how working with the effectiveness team, as we call ourselves, how working with us, you know, is going to add value to your teams. So again, that's another opportunity for us to showcase the added value of how we're leveraging data.”

Interviewees in Case Study A described how they were intensively promoting the benefits of analytics to multiple audiences across the organisation. Three separate types of staged persuasion took place. The first were “show and tell” episodes that they entitled “inspiration sessions”. These sessions aimed to reach the geographically dispersed workforce in Case Study A and were deployed over the course of a year. External marketing practitioners were used to craft the message to all of the internal stakeholders. The second were entitled “knowledge exchange sessions”. These episodes were set up by the marketers in order to learn from the analytics interns and so that they could understand the potential of analytics in more detail. During these sessions they asked the interns to bring ideas that could be explored using analytics and so that the marketers could benefit from their knowledge. Interviewee A4 describes that a productive learning environment was the result: “They were really easy to engage with, really helpful. Kind of became mentor, teacher types to us”. The third type of

staged persuasion, as with Case Study B, was several internal presentations from analytics practitioners to a wide range of organisational stakeholders – inquiry teams, software development teams, and regional marketing teams. Undertaken using a virtual meeting platform, they appeared to engage the wider organisation.

4.7. *Appealing to Idealised Future States*

This predominantly rhetorical persuasive practice has echoes of the "inspirational appeal" influence tactic described in the early leadership influencing literature (Kennedy et al 2003). In the two early use cases it was used as a linguistic device to persuade internal practitioner audiences that the future benefits of analytics were worth the investment in the present time. It contains traces of personnel and business capability development as, in both of these cases, it was used to incentivise the recruitment of skilled analysts and to anachronise current practices, promote change and highlight the potential business benefits of analytics. The human components of this persuasive practice are those anticipated to be most resistant to change and wedded to current practices. Data and its associated material components are presented as 'the future of marketing' in this persuasive practice.

In Case Study B, interviewee B2 describes analytics in familiar, FMCG industry language as "ingredients that make a perfect blend": "I very much talked to them about data sets being the ingredients that we can use to create this perfect blend of practical, actionable and inspirational wisdom for [deleted], the brand. And that, by identifying what and why we want to measure, data will help us to plan and prove the effectiveness of our marketing endeavours and our marketing investment." In Case Study A, the very early stage organisation acknowledges the tempting pull of these inspirational appeals and the presence of a powerful analytics vision, but also sees the difficulties in achieving it: "In order for us to be a data-driven organisation, we need to have people capturing the right data, populating the data in a set way, and there's vast

inconsistencies around that currently. I think it's because we're so early days as a team, one thing I think I struggle with is believing that we will reach his ultimate vision of all seeing, all dancing data at our fingertips (Interviewee A2).

Now we have set out the bundle of persuasive practices, the next section will discuss their significance.

5. Discussion

This paper has presented a fine-grained examination of the social and political aspects of BDA implementation, going beyond the mainly technically-oriented case studies and quantitative studies published thus far (Conboy et al., 2019; Wamba et al., 2017). The research addresses the question of how technical and non-technical colleagues are persuaded to engage in BDA projects in a way that builds value. Persuasion was a dominant theme in qualitative data gathered from three case studies and twelve expert interviews which were designed to explore the connection space between data analysts and marketers as BDA projects were implemented.

Using a practice-based analytical lens, a bundle of seven persuasive practices that were routinised across the three case studies was revealed. Each persuasive practice was social in that its targets were groups of different human stakeholders and political in that the practices were deployed to the end of creating a new, analytically driven organisational order which promoted new ways of doing, rendered certain skillsets anachronistic and sometimes provoked resistance. Persuasion, after all, is deployed to engage stakeholders in a worldview which is different to the one that they already hold.

The practices were: involving data scientists throughout marketing projects; translating from the language of data to other organisational languages; demonstrating proof of concept; establishing value; visualising analytics; staging persuasion, and appealing to idealised future

states. The data show that there were many gaps between technical and non-technical colleagues that these practices were deployed to bridge: gaps in skills and ability with analytics processes and outputs; in understanding of the potential contribution analytics could make not only to operations but to performance; in understanding of what IT projects are, what analysts do and how to engage with them. Each practice engaged non-technical colleagues in different ways: around operational issues such marketing project design, creating a common digital community, demonstrating the nuts and bolts of analytics and legitimising the skill of the analyst to more generalised persuasion on wider matters emphasising accessibility, the importance of ideation away from the workplace and idealising about data driven futures.

The persuasive practices mobilised new combinations of socio-material organisational resources to bridge these gaps including:

- Embodied analysts who bring, among other things, data skills, belief systems, listening and message-giving skills and put a human face on the technologically black-boxed and complex area of BDA
- Elements associated with common language development, polyphony, sensemaking, reflexivity and the reconciliation of different mindsets arise
- Organisational structures, infrastructures, technologies, applications, datasets and working practices
- Assembling, documenting and presenting case studies which are figurations of existing organisational knowledge
- 'Tangible outputs' of analytics, working theories, hypotheses and documentation
- Wider organisational performance measures and accepted versions of success
- Specific tools in order to demonstrate BDA in a graphic manner that avoids jargon

- Existing organisational information sharing fora and traditional leadership persuasive techniques

The practices were connected in a bundle: overlapping, rather than mutually exclusive, in a manner similar to other observations of practice (Sanders et al., 2015; Reckwitz, 2002). Variation in the use of each practice was explained partly by the analytical maturity of the organisational case. Crucially, however, a core of practices common to all the cases demonstrated that non-technical colleagues had to be constantly re-engaged, even if, as in Case Study C, the organisation was a mature user of the technology with structurally embedded collaboration between marketers and analysts.

The paper's theoretical contribution is that persuasive practices are the precursors and enablers of BDAC in BDA project implementation. They may be found in the minutiae of everyday interactions. Although the practices themselves could not be shown to build value *per se*, their consequences and effects, as explained by the practitioners themselves, contained the seeds of analytical capability development. The second order analytical capabilities identified by Fosso Wamba et al. (2017) were able to classify the content of codes pertaining to the effects of the practices: personnel capability development, business capability development and infrastructural flexibility. Indeed, the subcomponents of 'relational capability' are inferred in some of the practices, in particular pertaining to the way in which analysts worked collaboratively and acted in a teaching capacity. The variety of organisational gaps encountered in the data, persuasive elements and the sheer breadth of organisational resources mobilised to the end of bridging them goes beyond this and other first order variables to illustrate the complexities involved at the start of value creation from analytics.

This complexity also contributes to observations made in the project management literature about the breath and importance of communication competencies now required by project managers (Dillon and Taylor, 2015). The host of elements deployed in the persuasive practices demonstrates that persuasion is more than the rhetorical, logical, cognitive phenomenon explored in the leadership and marketing literature (Kennedy et al., 2003). The findings show that it is assembled and enacted, taking place in multiple registers. Emotions and expectations sit alongside cognition, professional mindsets and more rational assessments of performance and process (Liu et al., 2015).

The research also has several practical implications. Over the years practitioners have expressed many concerns about organisational gaps in analytics implementation and how to fill them. Gaps in language between technical and non-technical staff, analytics team composition, organisational structural and process, and developing analyst and marketing skillsets have been discussed anecdotally in the practitioner literature. Persuasion can be deployed to bring resources together so that these gaps may be overcome and common ground established. Yet persuasion as a theme has only been addressed specifically in the practitioner literature as an aspect of analytics team composition (Berinato, 2019). The current work suggests the ways in which persuasion may take place in the BDA context. Not only does it concern effective linguistic communication, it also encompasses the deployment of working material artefacts, knowledge and evidence about what BDA may bring to the organisation. Bridging implementation gaps in practice thus involves the ingenious mobilisation of all kinds of resources to convince colleagues of the value inherent in analytics as well as to understand and address their concerns. The persuasive practices we outline are some of the ways in which the constructive relations needed for a BDA project to get off the ground may be built.

There are also a number of limitations to the analysis. While the seven practices intersected with persuasion research, the broader persuasion literature has observed a much wider range of persuasive forms which do not appear in the dataset. Persuasion, as Bakir et al. (2018) highlight, is connected with the exercise of power and the range of power relations at play in organisations can vary from the consensual through to the coercive and manipulative. The persuasive practices identified took place in non-adversarial contexts where relations – as far as it is possible to say – were co-operative and consensual. Forms of persuasion which have been observed in other organisations which were coercive, manipulative, propaganda-like or political were not observed. As such, a different range of persuasive practices might appear in more adversarial circumstances.

Further limitations to this work arise from its restriction to three organisations within three specific industries. Broader datasets, a wider range of industries and a wider range of practitioners may surface further persuasive practices in embedding BDA. This research has also focused more on how both persuaders and persuadees characterised persuasive practices together rather than on how they, as separate entities, delivered and received persuasion. A more explicit focus on different persuadees in the organisation – for example, human resources or finance professionals – and the direction of persuasion may similarly demonstrate the appropriateness of different elements of the persuasive practice bundle. Future research would thus consider a wider sample of organisations, different types of practitioner, deploy ethnographic methods, and, ultimately, examine the outcomes of persuasive practices. This would be both in terms of the successful embedding of BDA across the organisation and the consequences for practitioners in terms of their skillsets and capabilities. Reflecting the marketing and leadership persuasion literatures, it would also seek to map the demographic, skills-based, cultural, personality and other dynamics of how persuasive practices were deployed in BDA settings.

6. Conclusion

This paper has drawn on data from three organisational case studies to propose that persuasive practices are the precursors and enablers of analytical capability development. A bundle of seven practices was utilised across three organisations to bridge multiple gaps between technical and non-technical colleagues on BDA projects. The deployment of these practices varied according to the level of BDA maturity and featured a host of socio-material elements. The paper has complemented existing technical case studies with an account of the managerial and human elements of BDA implementation, making contributions to three literatures: BDAC, persuasion and project management. Effective deployment of persuasive practices potentially both embeds the benefits and mitigates the risks of BDA, sowing the seeds of many different forms of value.

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