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Fall 9-11-2020

## Developing and Deriving Value from Big Data Analytics Capabilities

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### Recommended Citation

Rayburn, Sujatha and Patel, Jignya, "Developing and Deriving Value from Big Data Analytics Capabilities" (2020). *SAIS 2020 Proceedings*. 22.

<https://aisel.aisnet.org/sais2020/22>

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# THE ROLE OF THE MANAGER IN DEVELOPING AND DERIVING VALUE FROM BIG DATA ANALYTICS CAPABILITIES

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## EXTENDED ABSTRACT

In this big data age, big data analytics (BDA) has come to occupy a large role in becoming a major competitive differentiator for companies with many companies significantly accelerating the pace of their investments in BDA (Abbasi et al., 2016). As companies increasingly bet on BDA as the next competitive frontier, there is an imminent need for business leaders to clearly understand and rationalize the economic value gained from costly BDA investments by measuring their impact on objective measures of firm performance (Mikalef et al., 2020). Borrowing from prior empirical literature on IT capabilities and economic value, some scholars have drawn a positive relationship between BDA capabilities, which are built by assembling an array of resources that include a mix of big data, technology, human, and organizational resources among others and firm performance while others have failed to capture commensurate value from BDA investments (Gupta & George, 2016; Wamba et al., 2017; Popovič et al., 2018;). More work is required to understand and articulate the value creation process from capability building to value realization (Grover et al., 2018). While the BDA literature has been very prolific in defining the ingredients that go into building a BDA capability, not much work has been done to highlight the contributions of the manager as a potential source of BDA value creation (Mikalef et al., 2020). The IT-Business value literature has previously demonstrated that resource synchronization and orchestration is a prerequisite to develop and leverage resources strategically (Cragg et al., 2011). Using the resource orchestration framework as a theoretical foundation, this paper addresses the following research questions – 1) How do managers contribute to firm performance by bundling resources to build superior BDA capabilities? 2) How do managers mobilize, coordinate, and deploy these capabilities in concert with firm strategy and market context, and how does that moderate the relationship between BDA capabilities and performance outcomes? 3) Can managerial ability explain the differential performance outcomes in firms with otherwise BDA capability parity? This study will employ a quantitative research approach using a survey targeting top, middle, and operational level analytics managers in publicly traded companies drawn from multiple industries to measure BDA and BDA Managerial Capability given various market contingencies. The survey data will draw measures of firm performance from the Compustat database. The study adds to the scholarly literature by explicating the importance of effective resource management and the contribution of managers to the resource exploitation aspects of value realization from capabilities. From a practical viewpoint, the study enables companies to understand the processes and activities required to create and deploy high-quality BDA capabilities along with the organizational context and strategies necessary to produce superior firm performance.

## KEYWORDS

Big data analytics, capabilities, resource orchestration, resource bundling, mobilizing, firm performance, economic value,

## REFERENCES

1. Abbasi, A., Sarker, S., & Chiang, R. (2016). Big Data Research in Information Systems: Toward an Inclusive Research Agenda. *Journal of the Association for Information Systems*, 17(2), I-XXXII. doi:10.17705/1jais.00423
2. Cragg P, Caldeira M, Ward J (2011) Organizational information systems competences in small and medium-sized enterprises. *Inf Manag*, 48(8):353-363
3. Grover, V., Chiang, R. H., Liang, T., & Zhang, D. (2018). Creating Strategic Business Value from Big Data Analytics: A Research Framework. *Journal of Management Information Systems*, 35(2), 388-423. doi:10.1080/07421222.2018.1451951
4. Gupta, M., & George, J. F. (2016). Toward the development of a big data analytics capability. *Information & Management*, 53(8), 1049-1064. doi:10.1016/j.im.2016.07.004

5. Mikalef, P., Pappas, I. O., Krogstie, J., & Pavlou, P. A. (2020). Big data and business analytics: A research agenda for realizing business value. *Information & Management*, 57(1), 103237.
6. Popovič, A., Hackney, R., Tassabehji, R., & Castelli, M. (2016). The impact of big data analytics on firms' high-value business performance. *Information Systems Frontiers*, 20(2), 209-222.
7. Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J., Dubey, R., & Childe, S. J. (2017). Big data analytics and firm performance: Effects of dynamic capabilities. *Journal of Business Research*, 70, 356-365.