Contribution Details

Submission Type / Conference Track: Theme 7: Industry 4.0

How do organizations create and develop capabilities in Analytics?

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Abstract

Context

Analytics practice involves tools, methods, technology, skillful analysts and management to orchestrate those resources in order to extract value from data. However, systematic use of analytics and the creation of a capability depends on organizational actions and mechanisms that support required transformations to create more data-driven environment mindset.

Literature

Analytics capability concept relates to an organizational proficiency in the use of data for a strategic and operational vision (Mikalef, Pappas, Krogstie, & Giannakos, 2018). Wamba, et al. (2017) suggest a capability model formed by capabilities dimensions (management, people, infrastructure) that can improve firm performance. Besides identifying needed resources, it lacks on detailing how analytics results are operationalized. Sharma, Mithas and Kankanhalli (2014) state that there is not an obvious relationship between best insights and expected outcomes, and researchers must focus on behavioral, organizational and strategic aspects. Gupta and George (2016) highlights human and intangible resources in the capability model, emphasizing firm´s managerial roles – similar assumption to studies that identifies managers as key parts on incorporating analytical results (Janssen, Voort, & Wahyudi , 2017; Vidgen, Shaw, & Grant, 2017). Gupta and George also considers data-driven culture and intensity of organizational learning, supporting and enabling the analytics capability.

Literature Gap

Analytics capability models identify resources required, lacking descriptions on how organizations can organize them for a systematically use. There is also a misunderstanding on what consists that capability that must be viewed as a proficiency on both generating analytical results and incorporating them in firm´s operations.

Resarch Questions

The first part of research is to conceptualize analytics capability, describing two important phases: analytical results generation and their operationalization. That is essential to understand how organizations actions influences analytics practice. Thus, the focus can be fine-tuned to investigate mechanisms that foster and support the development of analytics capability.

Methodology

This research presents a qualitative approach. The first part consists on a literature review, selecting papers that describes organizational aspects on deploying analytics initiatives. Using micro foundations logic (Felin, Foss, Heimeriks, & Madsen, 2012) and organizational project theory (Galbraith, 1983), five dimensions (strategy, structure, process, people, rewards) will guide the review in order to identify patterns on actions and mechanisms on analytics practice. The review results will structure the research model. Thus, the second part of researching will be testing the model in real cases, conducting semi-structured interviews with organizations that are in further phases of (analytics) experimentation.

Empirical Material

References selected for literature review includes 10 papers and reports. Those reports, despite the lack of academic rigor, have considerable descriptions and results in the application of analytics in organizations. All references are: Hernandez, Berkey and Bhattacharya (2013), LaValle, Lesser, Shockley, Hopkins and Kruschwitz (2011), Kane, Palmer, Phillips, Kiron and Buckley (2017), Davenport and Dyche (2013), Félix, Tavares and Cavalcante (2018), Janssen, Voort and Wahyudi (2017), Vidgen, Shaw and Grant (2017), Popovic, Hackney, Tassabehji and Castelli (2018) and Galbraith (2014). Empirical material will be collected, ongoing planning is to finalize this part of process until the date of submission of the full article (May 31st).

Results

Researching first objective was to propose an analytics capability concept, which can be summarized as an ability to systematically generate and operationalize analytical results, aiming to improving organizational performance. Reviewing application cases described on literature, it was identified that interaction coordination (among multifunctional professionals) is critical, especially for generating analytical results; in operationalization phase, managers' active engagement is emphasized.

Some elements facilitate overcoming those factors and systematically support analytics practice such as formalizing standard procedures and tasks, assuring security and conformity (data and processes), strategically selecting analytical demands and transferring autonomy to leaderships and employees. Those elements can be promoted by organizational mechanisms (constructs) identified as analytical structure with centralized coordination, governance system, 'management action' (training, incentives, metrics) and analytical strategy. Each construct aggregates different tasks, and it is possible to nominate its main purpose, respectively as resources coordination, processes coordination, operations coordination and guiding the practice. Those constructs and their primordial function, together (not alone), enables analytics capability development. The analytics strategy guides and strongly influences other constructs and its 'absence' compromises analytics capability creation – absence can be understood as lack of clear objective, non-alignment with organization´s macro strategy or lack of communication or understanding of strategy.

Contribution to Scholarship

This research aims to contribute to the increasing analytics literature, which has been working with the concept of analytics capability (including other terms as business analytics or big data analytics capability). Besides more researches dealing with this concept, there is a lack of clarity about the extension of the capability that must be understood not only as an ability to generate substantial analytical results as a proficiency to implement them in organization operations. Recurrent issue in this field is lacking of studies regarding how analytics capability can be structured in the organization (Mikalef, et al., 2018; Popovic, Hackney, Tassabehji, & Castelli, 2018; Posavec & Krajnovic, 2016). The study also aims to aggregate to management theories, such as resource based view and dynamic capability, that suffer frequent criticism about the lack of explicit distinction in the construction and acquisition of capability and the implementation processes required (Kraaijenbrink, Spender, & Groen, 2010).

Contribution to Practice

Analytics is one of the many objects searched when promoting digital transformation in organizations. Many aspects that support analytics capability building can be the same required to engage other subjects in digital field, especially some strategical elements that induce organizational actions towards analytics practice. Consequently, identifying organizational mechanisms that support analytics capability development can contribute to firms that aims to use analytics systematically in their operations and want to become digital. This path requires actions and certain degrees of transformations, resulting on evolving a (more) data-driven environment.

Fitness

Research main theme seems to be aligned to the theme track, in the sense of the efforts required by organizations in order to promote one of the solution in the Industry 4.0. Analytics capability development need organization mechanisms in order to support and structuralize a systematic use of it.

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Submitted File(s) for Final Version

1st file PaperR&D Track7.5 Matsumoto Salerno May2019.pdf

Session Details

20-PM2-03: ST7.5 - Emerging Landscapes. New Skills, New Technologies and New Organizational Challenges in the 4.0 Age

Time: **Thursday, 20/Jun/2019: 2:45pm - 4:15pm** *Location:* **Amphi Becquerel**

Session Chair: **Marcelo Enrique CONTI**, Sapienza University of Rome, Management Dep.
Session Chair: **Giuliano Maielli**, Queen Mary, University of London
Session Chair: **Laura RIOLLI**, California State University Sacramento
Session Chair: **Cristina SIMONE**, Sapienza University of Rome, Management Dep.