TOP MANAGEMENT PERCEPTIONS ON USING ANALYTICS IN DECISION MAKING

Presentation for IFKAD 2023, Matera, Italy

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GLOSSARY

» Business analytics =
"the extensive use of data, statistical and quantitative analysis, explanatory and predictive models, and fact-based management to drive decisions and actions" (Davenport and Harris 2007, 7).

» Business analytics capability =
capability that enables collecting, storing, analyzing, and interpreting data in a way that helps firms **to make better decisions and improve their ability to compete** (Davenport 2006).

BUSINESS ANALYTICS HELPS FIRMS TO MAKE DECISIONS

›› Knowledge is in an essential role when firms make resource-related decisions to enhance their competitiveness (Spender, 1996).

›› Firms are continuously developing their business analytics capabilities, as they expect the increased focus on data, analysis, models, and fact-based management to improve their ability to make such decisions (Davenport and Harris 2017).

›› Supported with analytics-based outputs, decisions may become more accurate, and may require less human involvement (Kesavan and Kushwaha, 2020).

›› Improved business processes and decision-making performance enabled by analytics may also result in improved organizational performance (Chatterjee, Rana and Dwivedi, 2021).

FIRMS MAKE DIFFERENT TYPES OF DECISIONS

>> Firms and their managers get involved with different types of decisions (Simon & Norton, 1960; March & Simon, 1993; Holsapple, 2008):

 – Structured, programmable, routine-type decisions that typically have well-defined decision criteria and well-known consequences

 – Complex and unstructured, problem-solving type decisions that require making assumptions as the context and consequences are novel, and adequate information required for decision making cannot be stated or gathered

>> Top managers are typically involved in strategic decision making concerning firm longer-term objectives together with resource acquisition and development required to achieve these objectives (Noda & Bower, 1996; Eisenhardt, 1999).

BUSINESS ANALYTICS ROLE VARIES IN DIFFERENT TYPES OF DECISIONS

›› BA output is often considered to have more important role in operative decision making than in strategic decision making, due to different nature of these decisions (Kunc & O'Brien, 2019).

›› While routine decision making seems to highly benefit from using analytics-based tools and models in terms of faster and more accurate decisions, analytics models created for supporting strategic considerations often need to be specifically tailored for solving somewhat unique problems that are highly dependent on the firm's environmental and strategic contexts (Luoma, 2016).

›› Strategy formation requires understanding of firm's past performance, their intraorganizational characteristics and their uncertain and dynamic environmental and strategic contexts (Hutzschenreuter & Kleindienst, 2006).

USING BA ENHANCES KNOWLEDGE CO-CREATION IN ALL TYPES OF DECISIONS

» Using business analytics in decision making enhances the organizations' knowledge co-creation (Acharya et al., 2018) and helps make decisions based on knowledge (Marjanovic, 2022).

» In those decisions where human role remains essential, analytics may be used to amplify human intelligence (Wijnhoven, 2021).

» However, the benefits of analytics are achieved only when decision makers possess the ability to process the information provided by analytics and utilize it when making decisions (Cao, Duan and Cadden, 2019), or to turn the insights enabled by analytics into action (Marjanovic, 2022).

RESEARCH OBJECTIVES

›› Many of the decisions made by top management require making future predictions of the firm's continuously evolving environmental and strategic contexts.

›› While firms continue to invest in business analytics (BA), it remains somewhat unclear how BAC built with these investments are facilitating top management decision making.

›› When, how, and why top managers do or do not utilize BA when making decisions?

›› In our research, we respond to these questions by outlining the role of BA in top management decisions.

RESEARCH APPROACH

›› Empirical data was gathered through semi-structured interviews of 12 top managers in large Finnish firms that have gone through digital transformation of their operations

›› The interviewees either have managerial responsibilities over a business unit or function, or they are responsible for running a strategy process for the entire firm or its unit or function.

›› Interview data analysis was conducted in three main stages (Roulston, 2014)

1. First-cycle coding of the data using initial (open) coding approach (Saldana, 2013), after which the coding outcome was reviewed.

2. Reorganizing the condensed data was under inductive, second-cycle themes emerging from initial coding (Saldana, 2013), and then reflected with previous literature.

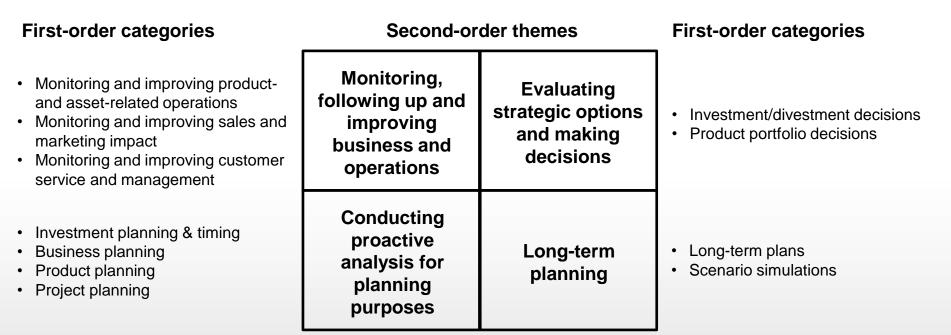3. Interpreting the themes among the research team and documenting the findings to be shared.

TOP MANAGEMENT PERCEPTIONS ON REASONS BEHIND USING BA

First-order categories	Second-order themes	
Industry is digitalizing Customers are moving to digital channels	Digitalizing business processes	FIRM EXPERIENCE
Competition is already benefitting from analytics Competition can be beat with analytics	Maintaining firm competitiveness	
Systematic view and follow-up of firm activities Better understanding on what should be done	Facilitating holistic business monitoring and management	
Backing up decisions with data Justifying why something needs to be done	Justifying decisions	
Analytics enables more accurate predictions Analytics-based data enables better decisions	Making decisions based on facts	
More data means more insights New viewpoints through analytics	Identifying new perspectives and insights	
Manager prefers to use numbers Data brings comfort and peace of mind	Getting a feeling of having made right decisions	INDIVIDUAL EXPERIENCE

TOP MANAGEMENT PERCEPTIONS ON WHEN TO USE BUSINESS ANALYTICS

First-order categories

- Monitoring and improving product- and asset-related operations
- Monitoring and improving sales and marketing impact
- Monitoring and improving customer service and management

- Investment planning & timing
- Business planning
- Product planning
- Project planning

Second-order themes

Monitoring, following up and improving business and operations	Evaluating strategic options and making decisions
Conducting proactive analysis for planning purposes	**Long-term planning**

First-order categories

- Investment/divestment decisions
- Product portfolio decisions

- Long-term plans
- Scenario simulations

DISCUSSION

>> Top managers use BA differently in different situations.

>> The regular BA output does not seem to provide enough input when top management interest moves from monitoring the ongoing business into predicting what may take place in the future or evaluating what measures the firm should take on longer term perspective.

>> This observation is in line with the previous research (Luoma, 2016; Kunc and O'Brien, 2018) that highlights the different nature of more strategic decisions that require more tailored analysis to be addressed.

>> However, as the technological development continues at an accelerated pace, it may bring along new opportunities for firms to increase the use of BA also in such situations.

Orjatsalo, J., Hussinki, H. & Stoklasa, J. (2023). Top management perceptions on using analytics in decision making. IFKAD 2023 conference, 7.-9.6.2023, Matera, Italy.

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LIMITATIONS & FUTURE RESEARCH OPPORTUNITIES

» Main limitations of this study include its narrow geographical scope, the nature of the participating firms and the small number of interviews.

» Besides continuing the further analysis of the current material, there are future research opportunities in terms of expanding the current scope

- Investigating how analytics teams are currently supporting top management and how they could still increase this support may provide fruitful insight on measures to increase the use of analytics among top management.

- Launching a wider survey to collect the measures that have already been taken by the firms to increase the use of analytics would add another possibility to gain such information.

- To observe how the continuously evolving analytics technologies may impact BA usage in more complex, strategic decisions in firms, a longitudinal study may be a suitable solution.