

People Analytics: A Case Study of the Tool Implementation in a Large Multinational Company

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Abstract

People management has always been a challenge for all organizations, and during the pandemic period, there was an increase in its complexity. Technologies and information systems are one of the tools to mitigate this issue. This article presents a case study of a tool implementation based on People Analytics in a large mining company. Several organizational tools to measure project efficiency have been applied during the implementation of this tool, such as PDCA, 5W2H, SWOT, Organizational Charts, flowcharts among others. The positive impact of this approach on the management system of the company has provided improvements in various aspects. For instance, improvements were observed in the management of data and indicators, responsibilities and processes in the company. The work that was carried out showed the potential capacity of the tool which contributed to the decision-making process based on strategies of the studied organization. In addition, potentialities, based on data analysis with a focus on people management, were observed. One of the examples was a campaign action called “Yellow September” in 2021 (Suicide Prevention), which was disseminated to the entire HR team in order to keep the staff alert about the internal analytical data on the subject, benchmarking tools and analytics techniques to learn about the behavior of the employees.

Keywords: People Management, People Analytics, Human Resources, KPIs

1. Introduction

The contemporary market has required technological advances from organizations to better support the management of their employees. The creation of data is no longer a problem and has become an opportunity. With the growth of Big Data, there has also been an increase in the quantity, speed, variety and veracity of the data created. Therefore, the challenge becomes the production and analysis of information (Nóbrega et al., 2021). The skills required are changing together with the tools that will be needed.

Data management via Data Analytics, according to Saffi (2020), came to light due to the large volume of information available and the capability of the tools to support strategic decisions through the analysis of large amount of data. Another branch of this field known as People Analytics has emerged, and it consists of using business intelligence and data analysis for people management (Eachempati, & Srivastava, 2017). The concept of People Analytics emerged through Google at the end of the last decade of the 20th century, with Mike Westum as one of the founders. However, it was only implemented in 2007, when was possible to collect about 15,000 resumes a day (Nóbrega et al., 2021).

People Analytics can be applied to different types of analysis such as optimized recruitment, retention, evaluation, promotion, compensation, turnover and other aspects of human capital management. In summary, it was created to help on the development of an increasingly better company environment and generate several insights that can be strategic for optimizing processes and actions, generating results for the organization and guaranteeing the development of new technological skills for the employees (Tursunbayeva et al., 2018).

Such technologies endorse thoughts such as: “Is data the new oil?” (Carrière & Haksa, 2019). That was the reflection that IMF (International Monetary Fund) technicians made about the new data culture. According to them, data has assumed a critical role with the new growth of the economy and in the last decade companies with data at the center of their business have come to dominate the ranking of the most valuable companies in the world. But with that, several challenges also arise, such as those related to LGPD (General Data Protection Law), since personal data are very sensitive and require greater care in collection and transfer in accordance with the sanction of the General Data Protection Law (Frazão et al., 2019). The traffic of online information, which evolves even more between the years 2020 and 2021 in the pandemic period, where several companies adopted the Home Office service, is the biggest challenge nowadays for the LGPD as it has difficulty identifying probable criminal activities, storage and tracking of personal data (Fornasier, 2021). During such technological evolution, and with the updated rigors of the law, the Human Resources area is no longer just a support area and has become a reference for decision-making.

Thus, the general objective of the work is to make a critical analysis of the case study of the implementation process of the People Analytics tool in a large company in the mining sector during the Covid-19 pandemic process. These techniques were mainly used to overcome the challenge that the company faced, of identifying and dealing with problems of production processes, which impacted individual and collective performance and generated noise in information that had to be disseminated for the progress of production. The specific objectives are aimed at: defining the implementation scenario, evaluating its impacts and analyzing its possible returns. This work is justified by the contribution of the implemented tool on the optimization of people management, which is a field that had major changes in the process and the relationship of employees in the market since the pandemic event (Rodrigues Junior et al., 2021).

2. Material and Methods

This research begins with a brief review of concepts that served as a theoretical framework and then the research methodology is defined.

2.1 Theoretical Reference

To fully understand the tool discussed in this work, it is necessary to understand some the basic concepts about the terms intrinsically related to it such as how to understand what people management is and how it works, some organizational tools available and what they do, in addition to the concept of Data Analytics (therefore relating to People Analytics).

- **People management:** consists of a set of practices, policies and techniques that allow organizations and employees to establish a connection between the expectations of each party and thus achieve them over time (Chiavenato, 2020a; Chiavenato, 2020b; Budde & Silva, 2020).
- **Organizational Tools:** One of the most widespread processes currently in all areas is Quality Management. Quality is a very broad concept impossible to relate to just one, but to multiple elements with different levels of importance (Paladini, 2019). Companies use several tools in Quality Management, among them organizational tools such as organizational charts, flowcharts, 5W2H and PDCA. These apply not only to production processes, but to any area of an organization, including Human Resources (HR).
- **Data Analytics:** can be defined as a discipline, a practice or a process of collecting, processing and transforming data into information through various methods (statistical and mathematical) using computers (Paula, 2020; Runkler, 2020).
- **People Analytics:** Nasril et al. (2021) and Gal et al. (2020) cites some definitions for People Analytics and conclude that it is a data-driven approach to HR management.

Some companies achieved expressive results related to their need with the application of People Analytics. Some of these cases are presented below:

- **Google:** One of the pioneers and most famous success stories was Google through the Oxygen project. The project was launched to assess leadership positions and then verify the need to have them or dismiss them. There was a high turnover in the company and the idea arose to verify if this was the real perception of the employees about their managers. As a methodology, Google applied assessment tools, employee surveys, interviews and feedback that were not directly related to leadership. Through the data collected, it was possible to prove that good management makes a difference and that in addition to leaders being indispensable, it was possible to map the behavior of a good leader (Shrivastava et al., 2018).
- **IBM:** In the case of IBM, the objective was to improve the organizational environment of the company. It was used an artificial intelligence tool called Social Pulse. The purpose of this tool was to search for keywords in the publications of employees on social networks, then create dashboards with the most identified feelings. Thus, it was possible to identify the dissatisfactions of the teams, such as the leaders conceiving errors in the feedbacks and in the internal communication (Majumder et al., 2021).
- **Embraer:** In this case, the problem to be addressed was the volume of applications received by the company in the selection processes. Therefore, an internal project was started with the artificial intelligence tool Gaia, by Gupy. In this project, People Analytics was responsible for the in-depth analysis of the candidates, identifying trends, technical and behavioral skills. With this approach it was possible to identify the best profiles according to the characteristics of the company. Therefore, the following steps were less burdened with an adequate screening of professionals, which made it easier for managers, since it was not necessary to apply the process anymore for all candidates (GUPY, 2021).

Such success stories inspired the case study to be demonstrated in this article.

2.2 Methodology

This article is a case study of an implementation of the People Analytics tool in the HR department of a large company in the mining sector in Belo Horizonte, Minas Gerais, Brazil. In order to organize and carry out the best possible analysis of the case study, the company was contacted to analyze the current process, and the implementation of People Analytics tools was identified. During this process, the following steps were performed in the company:

- **Environment Analysis:** Evaluation of the organizational chart of the company to verify the distribution of the positions in the organization. The company provided data from January/2020 to December/2020 and an interview was carried out with the HR manager to learn about the workflow of the department. A survey with the employees was executed on the subject to identify the scenario and propose more effective actions. During this period, employees from 11 different positions were selected to be part of

the evaluation process. Meetings were held every 15 to 20 days (subject to team availability) to carry out the proposed activities

- **Critical Assessment:** Using organizational tools, the People Analytics implementation processes were identified and evaluated. Tools such as PDCA and 5W2H were used to evaluate the implementation planning.
- **Survey of Effects and Impacts:** Analysis of the effects of implementing the tool in the organization on the assertiveness of tasks and maturity in data analysis to improve lead time processes, retain talent, new hires and improve the organizational quality through indicators shared by the company.

3. Results

3.1 Environmental Analysis.

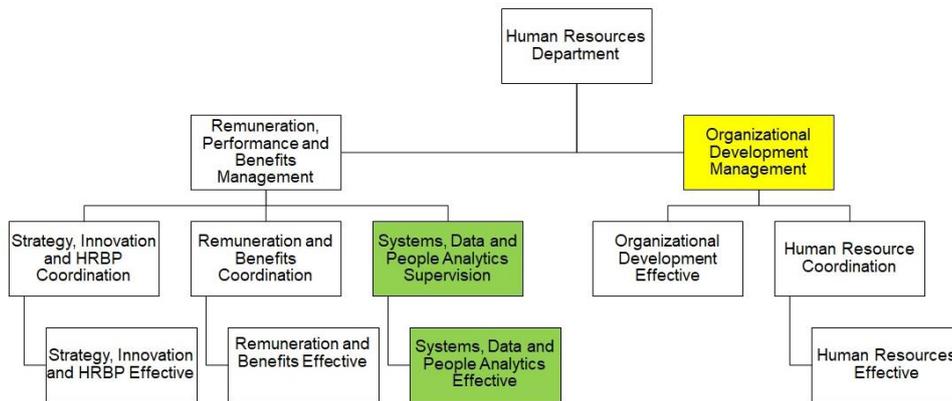
In the environmental analysis stage, the premise is to know the status of the company in the face of changes through People Analytics. It was evaluated that the organizational chart underwent changes to meet the demands of the People Analytics tool. The change took place from October 2020, where a supervision was created to meet the demands of the theme. First, this process was not carried out only to meet the demand (there were other reasons for the demands of the company), but the change positively impacted the progress of the process and provided greater organization. This team then became responsible for the implementation and creation of the culture of administration and use of data in HR. The organizational chart was composed as follows, as shown in Figure 1:

- Remuneration and benefits coordination: Responsible for all the benefit contracts of the company and part of the fixed and variable remuneration of the entire organization.
- Coordination of Strategy, Innovation, HR BP: Responsible for communicating the areas with HR, outlining strategies and developing a good organizational environment.
- Organizational development coordination: responsible for the application of training, leadership development, management and retention of the talents of the organization.

The organizational chart has undergone changes, as described in Figure 2. Still at this stage, the “Supervision of Systems, Data and People Analytics” was proposed. There was a debate with all employees present in the organization chart of Figure 2, where the theme of People Analytics was introduced, and a survey was carried out on Mentimeter® to understand what knowledge this group has on the subject. Several relevant information was collected for analysis of the scenario and next steps. From this research (Figure 3), one of the results was the identification of internal difficulties already experienced by employees, due to certain indicators in the area that they were not able to access, or that the data were not available (which conditioned the effect that people did not knew they existed). For the formation of words: each employee of the sectors involved could choose 3 words that answered the three

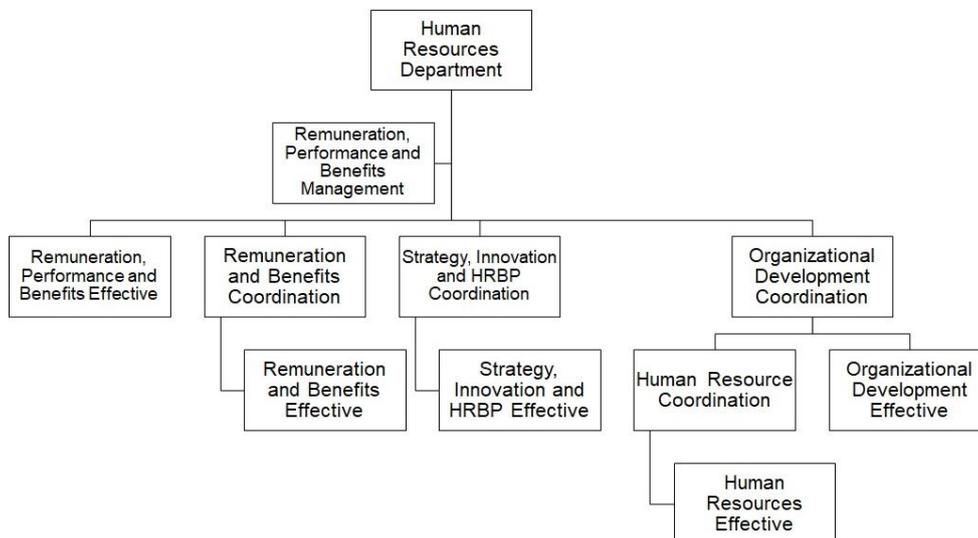
main questions: *which indicators have I already needed and not been able to support my analysis? what indicators do I currently need to support my discussions? which indicators can HR not fail to monitor?* Employee identification was preserved during the process and the results were collected and presented to everyone.

Figure 1 - Initial organization chart



Source: (Authors, 2022)

Figure 2: Changed organization chart



Source: (Authors, 2022)

Another result obtained was the identification of indicators necessary for each area for the execution of its activities, such as a movement panel for analysis of the latest promotions/salary increases in the company and thus being able to comply with the internal standard. Finally, there was the essential indicators that HR could not fail to monitor within the company. It was possible to identify the main needs of the HR department and to direct, through the themes

most mentioned by the collaborators in the research, on where to act with priority. Among the topics, the most mentioned were compensation, attraction, hiring and retention, which together accounted for 49% of the total of other topics mentioned by employees. A SWOT analysis was carried out by the company (Table 1) to support the possibilities inside and outside the organization, identifying the strengths, weaknesses, opportunities and threats that People Analytics can cause.

Figure 3: Word Cloud



A – Questioning: which indicators have I already needed and not been able to support my analysis?



B – Questioning: what indicators do I currently need to support my discussions?



C - Questioning: which indicators can HR not fail to monitor?

Source: (Authors, 2022)

The company identified that it produced a lot of data, but many of them are not used and therefore generate waste of Man Hours Worked and storage space. The SWOT Matrix proposal was carried out with the same employees involved in the beginning of the process, after analyzing the word clouds. As a result, it can be described, in summary, that the positive points about the implementation of People Analytics are concentrated in the possibility of making procedural data available in a more agile and accessible way, enabling more assertive and accurate decisions. However, the risks are concentrated on issues such as: alignments on how the tool works, the process of familiarizing employees with the indicators to be explored and the possibility of parallel and duplicated information in other departments. It was necessary to share the data available to support routines and decision-making so that the company can become more competitive in the current scenario. On the other hand, there is some difficulty in filtering data that are sensitive and can affect the security and confidentiality of information and may even violate the LGPD.

Table 1: SWOT analysis

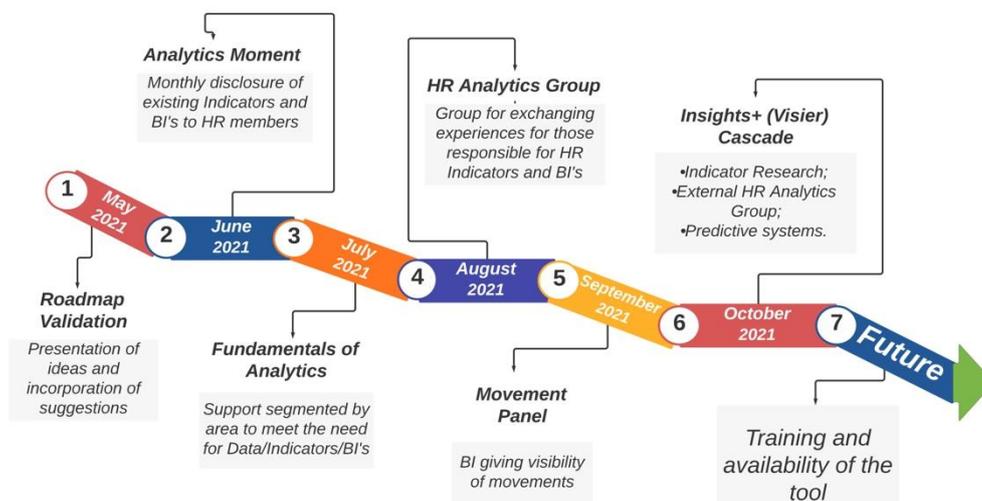
Internal Analysis	
Strengths	Weaknesses
Democratize information to support routines and decision-making.	Security and confidentiality of information in case of failures in access assignments.
Strengthen the culture of Analytics within HR.	Existence of parallel controls and duplication of efforts.
Engage customers within HR in the generation and consumption of information and indicators.	Dependence on other areas to obtain part of the information.
Transfer knowledge of Business Intelligence to the other teams.	Resistance to adopting indicators in the analysis and decision-making process.
Greater efficiency in obtaining information.	High targeting of HHT to prepare indicators and obtain information.
HHT optimization with greater access to tools and dashboards.	
Opportunities	Threats
Great data availability.	Failure to transform data into information and indicators.
Availability of free tools for publishing information.	Existence of indicators that are not adding value or supporting decision making.
Organization increasingly data oriented (data driven).	Lack of familiarity with the indicators.
Areas focused on theme development and knowledge sharing.	Existence of unreliable records.
Initiative aligned with the strategic objectives of HR (Digital integration, automation and simplification of processes).	Time interval without obtaining benchmark data and external references for comparison.
Practices and processes already in line with the LGPD.	
External Analysis	

Source: (Authors, 2022)

In view of the results obtained from this whole scenario, assumptions were established that allow the start of actions to apply the tool: use the tools already made available by the company, thus not changing the budget in the first year of application; leverage everything that is already done, publicizing work that has been already carried out by HR; use already available knowledge, creating space for exchanging information with other areas and accelerating the learning process; decentralize to spread the Analytics culture, creating Analytics actions and reference points in all areas. Aiming to spread the culture of Analytics, the company structured a Roadmap proposal (Figure 4) with actions that will improve the activities of the HR department and make it more data driven.

- **Analytics Moment:** The idea of this action is to make monthly disclosure of indicators that already exist in the organization. Thus, presenting indicators that are unknown by the employees and generating engagement and knowledge about the information presented.
- **Fundamentals of Analytics:** Support from the area specialized in data analysis to meet the needs of a specific sector in creating data, indicators and dashboards.
- **HR Analytics Group:** Group with representatives from each sector to exchange experiences and knowledge related to data analysis.
- **People Analytics Panel:** Internal event with the participation of people from other companies related to the topic to inspire employees through their knowledge and experiences.
- **Movements panel:** Creation of a panel to support the analysis of personal movement in the organization. It was one of the most cited topics in the survey.
- **Insights+:** Training, qualification and availability of tools present in the company to enhance engagement.

Figure 4: Roadmap



Source: (Authors, 2022)

With these findings in mind, the second stage of this research focuses on a critical assessment, with the application of quality tools, to optimize the process of assimilation of People Analytics by the company.

3.2 Critical evaluation

During the planning phase at the company, it was observed that some organizational tools that could contribute to the development of the implementation stages of the People Analytics tool were not implemented. To demonstrate organizational possibilities, the PDCA tool was used according to Table 2. Via PDCA, the demands that each necessary stage are concentrated, filtered by each specific stage. It can be seen: P - a process of understanding and delimitation of the challenge of implementing People Analytics was described; D - the execution of the proposed actions; C - post-implementation verification process of the tool and; A - evaluation of the positive and negative impacts on the process as a whole. In view of the analysis of the PDCA cycle shown in Table 2, the 5W2H tool was applied to identify the problem, the people responsible and the solutions that would be necessary for the execution of the PDCA, according to Table 3.

Related to the financial part of the company in the case study, only the change in organizational structure was found, creating a team responsible for the implementation, execution and continuous improvement of the entire People Analytics process. This technique allowed delegating functions to each stage of the planning and thus better organizing the practical part of the implementation. It was evaluated the best strategies and the impacts they caused in the routine of activities of those involved. The result obtained through the analysis made it possible to execute some changes in the structure of the company that were duly justified through Table 4.

Table 2: Analysis via PDCA of Organization Possibilities

PDCA	Stage	Demand
P	Problem identification	Little use of the data made available in HR
	Observation	A large volume of data was identified but little effective analysis of them, negatively affecting HR strategic decisions
	Analysis	Lack of knowledge of data analysis
	Action plan	Improved People Analytics
D	Execution	Application of the People Analytics tool
C	Verification	Analysis of post-implementation indicators of the tool
A	Standardization	Creation of procedures, training to encourage and maintain the culture of data analysis
	Conclusion	Identify if the problem has been solved and propose improvements for the future

Source: (Authors, 2022)

Table 3: 5W2H of the PA Implementation

What?	Implementation of the People Analytics Tool
When?	Started during the pandemic

Why?	Create a data culture in the HR area so that better analyzes of existing indicators are carried out and to be able to predict possible threats
Where?	Large company in the mining sector
Who?	Creating a responsible area, implementing People Analytics tools and proposing an application methodology
How Much?	Additional cost of two employees in the organizational structure

Source: (Authors, 2022)

Table 4: 5W2H of each PDCA task

Stage	Unit	Cost (Year)
P	What?	Identify, observe and analyze the data leverage problem
	When?	Pandemic period
	Why?	Improve data analysis and culture creation for better decision making
	Where?	HR area
	Who?	People Analytics Team
	How much?	No Costs - Use of systems that the company already had
D	What?	Application of the People Analytics tool
	When?	From May/21
	Why?	Improve data analysis and culture creation for better decision making
	Where?	HR area
	Who?	The entire HR team
	How much?	Zero, use of systems that the company already had
C	What?	Analyze the indicators after implementation of the tool
	When?	From December/21
	Why?	Analyze decision-making and the direction it took
	Where?	HR area
	Who?	People Analytics Team
	How much?	Zero, use of systems that the company already had
A	What?	Create BI culture and routine for continuous dissemination of applied knowledge
	When?	From May/22
	Why?	To keep designing the best possible strategies and implementing process improvements
	Where?	HR area
	Who?	People Analytics Team
	How much?	Zero, use of systems that the company already had

Source: (Authors, 2022)

As shown in Table 4, the activities and resources that will be needed during the PDCA process, can be correlated, in short, as planning to designate responsible and resources to be aligned to implement People Analytics, an execution that started on 21 May with a focus on the HR team, a process to verify the indicators obtained from December 21st and, finally, a range of new possibilities in 2022 such as the use of BI and the dissemination of the knowledge obtained.

3.3 Assessment of Financial and Procedural Impacts

It was necessary to make some changes in service assignments and this directly impacted the hiring of two assistants (salary range – excluding taxes – around 2,300.00 Brazilian Reals

(BRL)), which generated an increase in personnel costs. As the company already has licenses that allow analysis and brainstorming (for example: Power BI®, Office Package®, Mentimeter® etc.) there was no need at this stage to include new tools. Based on that the implementation of People Analytics did not directly impact the cost of these tools. This cost can reach the range of 4,243.20 BRL/year per user (Office® 1.371,60 BRL+ Mentimeter®1.500,00 BRL+ Power BI®1.371,60 BRL) depending on the level (Prices From: Microsoft®(2021) and Mentimeter (2021))

The results already obtained through the roadmap were also evaluated, such as Momento Analytics®, which allowed to assess the external and internal impact on the company. One of the examples was a campaign action called Yellow September in 2021, which was disseminated to the entire HR team. This campaign motivated the HR department to be aware of internal analytical data on the subject, benchmarking and demonstration of analytical techniques as a way of learning. The intention was to bring to light the reality experienced in the company and in Brazil in general and with data, to publicize initiatives already carried out by the company to combat the problems faced and to transmit knowledge of techniques to improve the analyses. It was noticed through the feedback received that the tool reached several people and aroused the interest in changing some practices and taking new measures to cooperate with the reduction of these numbers. In addition, it enabled actions such as improvement in mental health programs, new initiatives and lectures to raise employee awareness etc. It could be seen an initiation of culture change and decision making based on People Analytics data at the beginning of the implementation.

The People Analytics tool has made a significant impact in its first steps, and the objective of the tool in this case study was to create this Business Intelligence culture in the midst of a humanities area. The main purpose was to support the HR department on the decision-making tasks, through technical analysis and knowledge exchange. After the culture is implemented, a change of mentality is expected so that instead of correcting past problems, there is information and knowledge to predict possible future problems and know how to correct them. An investment being considered by the company is the implementation of tools with prediction algorithms (based on Machine Learning). Tools like Talent Insights® are being quoted for such a venture. For strategic reasons, the budgeted amount for the company under study will not be mentioned, but it appears as a base in the order of tens of thousands of Brazilian reais per year (with approximately two or three licenses for use). The completion of the implementation is scheduled for January/2022, and improvements in the processes must be made until then. A future improvement that can be included after the completion of the current strategy is the implementation of tools for predictive analytics and thus make the path used, after having the data culture, much more targeted and functional.

4. Conclusion

In view of the whole scenario of the implementation process, it was concluded that it is not enough to just share technical knowledge, new learning and impositions on those involved. It is necessary that there is commitment and willingness to do things different on the part of the participants. In addition, the market is very dynamic and requires an attitude of always looking for new knowledge, techniques and tools to keep up with the need, so updating is always something essential to be done.

It is important to emphasize that the case study carried out used data, tools and systems that the company studied already had, which did not generate any costs related to systems and tools. Therefore, for the evaluation of other companies, it is possible that there will be some change, it is important to carefully evaluate the People Analytics pre-implementation scenario so that possible additional costs are measured and discussed. As next steps, it is ideal to search the market for an alternative tool that can support predictive analysis for the company. With the cultural transformation of Business Intelligence in the routine of those involved, the paths and methodologies to be followed are much more evident and thus, being able to strategically support the company to achieve its ambitions.

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