

Repositório ISCTE-IUL

Deposited in *Repositório ISCTE-IUL*:

2025-11-04

Deposited version:

Accepted Version

Peer-review status of attached file:

Peer-reviewed

Citation for published item:

Geada, N. (2023). Introduction: Enhancing business communications and collaboration through data science applications. In Nuno Geada, George Leal Jamil (Ed.), *Enhancing business communications and collaboration through data science applications*. (pp. 1-14).: IGI Global.

Further information on publisher's website:

10.4018/978-1-6684-6786-2.ch001

Publisher's copyright statement:

This is the peer reviewed version of the following article: Geada, N. (2023). Introduction: Enhancing business communications and collaboration through data science applications. In Nuno Geada, George Leal Jamil (Ed.), *Enhancing business communications and collaboration through data science applications*. (pp. 1-14).: IGI Global., which has been published in final form at <https://dx.doi.org/10.4018/978-1-6684-6786-2.ch001>. This article may be used for non-commercial purposes in accordance with the Publisher's Terms and Conditions for self-archiving.

Use policy

Creative Commons CC BY 4.0

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a link is made to the metadata record in the Repository
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

ABSTRACT

This chapter consists of an introduction of the study of enhancing business communication and collaboration through data science applications in the current context. Organizations are highly complex and ever-changing environments that need to be supported by solid and reliable information. With rapid technological and scientific advances, it is imperative that organizations adopt a policy of using technological methods to ensure the prosperity and continuity of their business.

INTRODUCTION

The communication flow in organizations, is influenced by the structure of the organization, this structure reveals the paths through which the information flows in the organization, it tells us who should communicate with whom. These flows are four: descending, ascending, horizontal and diagonal” (Pereira et al., 2019). Regarding the existence of these flows, when referring to upward communication is all the information that comes from the people located at the bottom and develops a route that can reach the highest that can reach the highest position in the structure of the organization. A functional structure for transmission of communication

downwards, at the formal level, in which the content is relevant to the entire structure of the company, which consists of the following typical example of procedure: a director, upon receiving information from management, communicates it to the production manager, who in turn and sector chiefs to inform them, then the sector chiefs inform the foremen, then the then the foremen inform the foremen, who in turn inform the workers (Asma et al., 2020; Belay et al., 2021). This example, typical of a This example, typical of a hierarchical organization, highlights the importance of information reaching all levels, not going beyond any functional level, which, if it happened, could subvert the functioning of the organization. It is essential to consider that the participation of employees since it is crucial for cooperation and motivation, has the purpose of informing, instructing, and directing, its intensity of information flow will depend fundamentally on the philosophy and policy of each organization, leading to interdepartmental problem solving (Azevedo, 2020; Geada, 2021). Organizational communication must be conducted by “a coordination responsible for the set of content and communication tools, which may involve, among other things involve, namely: standards, methods, processes, programs, plans, projects, which are conveyed through channels and flows involving levels of the hierarchical structure” (Geada & Anunciação, 2021). The content and the way communication circulate denotes the culture and shapes the organizational identity.

The lack of objectivity or veracity of the data, it is crucial that the means of information are fast, agile and unbureaucratic, since the flow is corresponding the feedback process, that is, the return of the functional body on the management model, administrative actions and organizational plans determined by the company (Albrecht et al., 2020; van de Wetering, 2021; van de Wetering et al., 2020). “Communication management is an administrative activity that aims to create the information and purpose of creating the necessary information and understanding so that employees can be autonomous in their tasks and naturally arise cooperation, motivation, and job satisfaction”.

It is these purposes that will lead to a team spirit and a better performance in the tasks, that is, both subordinates should receive from their superiors' clarifications about the on the other hand, superiors should be informed of what is happening so that useful information that useful and necessary information is made available so that people can conduct their tasks with motivation, team spirit, leadership, performance which can conduct their tasks with motivation, satisfaction, and better communication and cooperation among the members of the work group to which they may belong (Al Salman et al., 2020; Albrecht et al., 2020; Ashta et al., 2018; Bittner et al., 2020; van de Wetering, 2021; van de Wetering et al., 2020). In the face of unstoppable technological advances, the world has become networked and needed a professional who would practice a study to examine the thousands of data and draw new insights for intelligent decision making. So, we can measure and

Introduction

present KPI's like performance, leadership throw data science that make possible to create empirical science for collecting and analysing a set of relevant data in order to develop current and even future problems in a given area (Al Salman et al., 2020; Albrecht et al., 2020; Ashta et al., 2018; Baiyere et al., 2020; Bittner et al., 2020; van de Wetering, 2021; van de Wetering et al., 2020).

So, data science is a multidisciplinary approach to finding, extracting, and revealing patterns in data through a fusion of analytical methods, domain expertise and technology. This approach often includes the fields of data mining, prediction, machine learning, predictive analytics, statistics, and text analytics. However, most organizations face a shortage of experts to analyse their big data to find insights and explore issues the company didn't even know it had. To realize and monetize the value of data science, organizations must infuse predictive information, forecasts, and optimization strategies into operational and business systems. Many companies are now empowering their knowledge workers with platforms that can help them accomplish their own machine learning projects and tasks. Being able to extract trends and opportunities from the massive amounts of data being fed into a business gives the organization a competitive advantage. Data science includes descriptive, diagnostic, predictive, and prescriptive capabilities. This means that with data science, organizations can use data to find out what happened, why it happened, what will happen and what they should do about the expected outcome. So, data science was a critical, becoming a key element in managing the pandemic and its shock waves. It is this information that, after being treated and analysed, makes it possible to identify patterns of people's mobility, communication, risk areas and forecast of contagions or the rate of use of public transport. In an era where everything can be monitored, even our habits, travels, or consumption - as long as we are connected - "the biggest challenge is to take advantage of the enormous amount of information available to obtain the best practices that improve the quality of life" (Almeida & Simoes, 2021; Alvarez & Caregnato, 2021).

So, the constant technological evolution has allowed data to be generated with greater volume, velocity variety. Under the denomination of big data and datafication and communication, this context may generate the relationship between these areas, since, on the one hand, will the traditional business intelligence model of business intelligence will continue and will adapt to this new reality, or will the new world that is being established with the so-called data science and its new and complementary forms of data analysis (Sarac et al., 2021).

Data Science

To shed light on the relationship between these two areas, in the to shed light on the relationship between these two areas in the academic field, this article business

intelligence, and data science, considering the characteristics of articles from the respective areas. In this sense, it sought to analyze, based on bibliographic research review that considered articles from journals published in Web of Science database (Nie et al., 2022) (Albrecht et al., 2020). It will be a form to overlap between the several areas, using bibliographic characteristics of their publications, specifically their authors, keywords, and citations. Finally, based on the data collected, an analysis based on descriptive data will be performed. Data science is a multidisciplinary approach to finding, extracting, and revealing patterns in data through a fusion of analytical methods, domain expertise, and technology. This approach generally includes the fields of data mining, prediction, machine learning, predictive analytics, statistics, and text analytics (Ma et al., 2019).

As data grows at an alarming rate, the race for companies to take advantage of the information contained in their data is great. However, most organizations face a shortage of experts to analyze their big data to find information and explore problems that the company didn't even know it had. To realize and monetize the value of data science, organizations must infuse predictive information, forecasting, and optimization strategies into business and operational systems. Many companies are now empowering their knowledge workers with platforms that can help them perform their own machine learning projects and tasks. Being able to extract trends and opportunities from the massive amounts of data being fed into a business gives the organization a competitive advantage. Data science includes descriptive, diagnostic, predictive, and prescriptive capabilities. This means that with data science, organizations can use data to find out what happened, why it happened, what will happen, and what they should do about the expected outcome.

Conceptually, the data science process is very simple to understand and involves the following steps:

- Understand the business problem
- Gather and integrate the raw data
- Explore, transform, clean, and prepare the data
- Create and select models based on the data
- Test, adjust, and deploy the models
- Monitor, test, update and control the models

The data science process begins with understanding the problem the business user is trying to solve. For example, a business user may want to ask and understand “How do I increase sales?” or “What techniques work best to sell to my customers?” These are very broad and ambiguous questions that do not lead to an immediately researchable hypothesis. The data scientist's job is to break these business problems down into researchable and testable hypotheses. For example, “How do I increase

Introduction

sales?” could be broken down into several smaller questions, such as “What conditions led to the increase in sales? Was it a promotion, weather, or seasonality?” “How can we optimize our sales based on constraints?” And “What are the likely sales tomorrow / next week / next month for each store?” The important thing to remember is to understand the business decision that needs to be made and work backwards from there. How will your business processes change if you can predict something that will happen (Agramunt et al., 2020; Baig et al., 2020; Brooks et al., 2017; Coro et al., 2021).

Once the business problem is understood, the next step involves collecting and integrating the raw data. First, the analyst must see what data is available. Often, the data will be in many different formats and many different systems so that data wrangling and data prepping techniques are often used to convert the raw data into a usable format suitable for the specific analytical techniques that will be used (Croxford et al., n.d.). If the data is not available, data scientists, data engineers, and IT often collaborate to bring new data into a sandbox-like environment for testing. Now the data can be explored. Most data science professionals employ a data visualization tool that organizes the data into graphs and visualizations to help them see the overall patterns in the data, high-level correlations, and any potential discrepant values (Campion et al., 2022). This is also the time when the analyst begins to understand what factors can help solve the problem. Now that the analyst has a basic understanding of how the data behaves and the potential factors that may be important to consider, the analyst will transform, create new features (also known as variables), and prepare the data for modeling. This is the point at which most analysts use algorithms to create models from the input data using techniques such as machine learning, deep learning, prediction, or natural language processing (also known as text analytics) to test different models. Statistical models and algorithms are applied to the data set to try to generalize the behavior of the target variable based on the input predictors (Agramunt et al., 2020; Baig et al., 2020; Brooks et al., 2017; Coro et al., 2021).

The outputs are usually predictions, anticipations, anomalies, and optimizations that can be displayed in dashboards or embedded reports or infused directly into business systems to make decisions near the point of impact. Then, after the models are deployed in the visualization or business systems, they are used to score new input data that has never been seen before.

After models are deployed, they must be monitored so that they can be updated and retrained as data changes due to changing behavior of real-world events. Therefore, it is imperative that organizations have a model operations strategy in place to govern and manage changes in production models. In addition to deploying models in dashboards and production systems, data scientists can also create sophisticated data science pipelines that can be invoked from a visualization tool or dashboard.

Often, they have a reduced and simplified set of parameters and factors that can be adjusted by a citizen data scientist. This helps solve the skill shortage mentioned above. So, a citizen data scientist, usually a business or domain expert, can select the parameters of interest and execute a very complex data science workflow without having to understand the complexity behind it. This allows them to test different scenarios without the need to involve a data scientist. In short, data scientists tell a story using data and then provide predictive information that the company can use for real-world applications. The process used, as shown in the chart below, is (Bittner et al., 2020; Chen et al., 2021; Cottler et al., 2020; Dias & Silva, 2022):

- Input data
- Preparation data
- Machine learning application
- Model deployment, scoring, and management
- Output data

Key Steps in the Data Science Process

Business Understanding

- Understanding the business decision to be made
- Determining what data is needed to make the decision
- Understanding how your business will change because of the decision
- Determining the architecture needed to support the decision
- Assembling a cross-functional technical and project management team

Understanding the Machine Learning Process

- Data acquisition and integration
- Data exploration, preparation, and cleansing
- Data preprocessing, transformation, and feature generation
- Model development and selection
- Model testing and tuning
- Model deployment

Understanding Model Operations and The Governance Process

- Model repository, documentation, and version control
- Model scoring, API structure and container strategy
- Model execution environment
- Model deployment, integration, and results

Introduction

- Model monitoring, testing and update

Main Data Science Tasks

- Problem understanding and analysis
- Data collection, data preparation / cleaning, and basic exploratory data analysis
- Model development and testing
- Model deployment, monitoring, and governance
- Communicating findings to business decision makers

DATA SCIENCE CHALLENGES

Below are some examples of the challenges that data science is facing in different industries:

Energy

Data science is being used primarily in the energy sector to optimize exploration, production, and operations, while anticipating demands such as:

- Equipment failure prediction
- Forecasting future oil volumes and prices
- Distribution optimization
- Emission reduction
- Soil composition analysis
- Reservoir characterization

Finance and Insurance

In the finance and insurance sector, data science focuses primarily on risk reduction, fraud detection, and optimization of the customer experience. Some examples of where data science is used are:

- Fraud detection
- Customer analysis
- Portfolio risk management
- Churn probability determination
- Compliance with regulations such as SOX, Basel II

- Credit risk prediction

Healthcare

Data science in healthcare is primarily used to improve quality of care, improve operations, and reduce costs.

- Detection of fraudulent claims
- Prescribing personalized medicine doses
- Image analysis to detect cancer
- Claims management
- Improving patient safety
- Determining who is most at risk
- Disease risk prediction

Pharmacist

Data science in the pharmaceutical industry is primarily used to ensure the safety, product quality and efficacy of drugs, such as:

- Golden lot determination
- Clinical trial analysis
- Product traceability
- Stability and shelf-life analysis
- Validation of reports and analysis for regulatory compliance
- Manufacturing process analysis, data

Manufacturing

In manufacturing, data science helps optimize processes, improve quality, and monitor suppliers.

Some examples are:

- Improved yields
- Reducing waste, rework, and recalls
- Detecting warranty fraud
- Regulatory compliance
- Equipment failure prediction and prevention
- Challenges facing data scientists
- Inaccessible data

Solved By

Easily combining data from multiple, disparate sources into a virtual data layer
Visually manipulating, cleaning, and transforming data to make it ready for analysis

Using relationship introspection and discovery to understand and validate data relationships for model building

Business Communication

Business communication is critical to success in today's business world. But not sure how to improve your business communication? Take advantage of our tips.

Realizing the importance of corporate communication can be a key determinant of a company's success. How corporate communication is carried out can make all the difference in the realm of performance and productivity.

So let us help you better understand this process with tips on how to improve your company's communication skills.

What is Business Communication?

Business communication has two fundamental aspects. So, on the one hand it is the sharing of information between people within the same company or organization to benefit the strategy of that entity. But, on the other hand, it is the dissemination of information to the outside of the company, for example, to promote products and/or services (Albrecht et al., 2020; Ferrini, 2020; Pacheco Pumaleque et al., 2021).

We are facing two essential pillars that can define the success of an organization, since they affect the most important levels of its reality. The implementation of business communication practices brings long-term advantages. The secret lies in applying consistent methods at all levels of the organization, as it is important to avoid information gaps and failures.

TYPES OF CORPORATE COMMUNICATION

Corporate or business communication comes in different forms and is not just about how you speak. Communication in any entity, today, is done through very different means and channels, both online and offline. But in general terms, we can speak of four types of business communication:

- **Verbal Communication** - is the passing of messages through voice and spoken speech, such as in meetings, phone calls or face-to-face conversations.

- **Visual Communication** - is the use of images or graphics to convey an idea, such as infographics, videos, or maps.
- **Nonverbal Communication** - is the behavior and attitudes that convey very specific information, such as gestures, clothing, and facial expressions.
- **Written Communication** - is what we share in text format via the Internet or physical media, such as emails, letters, or reports.

However, regardless of the channel or medium used, it is important to have consistency as mentioned above. So, regardless of the medium and form of communication, the message should always have the same tone and be clear.

Why is Business Communication Important?

Communication in the business world is critical to convey the desired messages about strategy, branding, and customer service. If this is not done clearly, the result will be catastrophic. So internally, corporate communication is important for creating harmony between employees and managers. But it also helps to promote teamwork and therefore get everyone rowing in the same direction. See that your employees can only contribute to the company's success if they clearly understand the strategy and what needs to be done. But on the other hand, externally, a brand or company needs to convey a solid and effective message to its target audience.

ADVANTAGES OF GOOD CORPORATE COMMUNICATION

Let's now look at the main advantages of implementing a good communication strategy in a company or organization. The benefits are obvious and will become very clear with the following infographic and subsequent explanations:

1. Increases Productivity

Effective business communication helps to improve the atmosphere in the workplace. Therefore, it contributes to strengthening teams and therefore to increasing productivity. When communication is positive, employees feel more motivated and work better together. Thus, work becomes easier, in a less tense environment. So, the advantages in this regard are obvious.

2. Reduces Conflicts and Misunderstandings

One of the most important vectors of communication is the ability to listen and fully understand all situations. Therefore, good communicators listen to others and think before they speak. This way they can have appropriate reactions and find the best solutions without creating friction within the teams. And when conflicts arise, problems can be addressed and resolved immediately. In addition, good corporate communication reduces the chances of misunderstandings or misunderstandings between employees.

3. Improves Customer Service

Efficient communication with customers, for example by answering questions and presenting solutions, is essential for the reputation of the business. In addition, it helps strengthen their trust and loyalty towards the brand and/or company. The way brands communicate is a determining factor in creating a strong relationship with their customers. Therefore, it is a fundamental vector of the business.

4. Helps to Achieve Goals

The success of a business depends on a clear understanding of the goals to be achieved. So, when your employees know what they have to do to achieve the set goals, it's easier for them to focus on that. Therefore, it will also be easier to achieve those goals. Note that this is also important to keep them motivated, because they understand what their role is within the organization. In this way you will also be strengthening their loyalty to the company, as well as preventing a talent drain.

5. Promotes Innovation

The sharing of ideas, in a good communication exchange, encourages innovation because it fosters creativity. When there is a good basis for communication, there is also greater trust and employees feel more willing to take risks in discovering new solutions. This kind of approach fosters new ideas and unique ways of responding to customer needs.

6. Encourages Individual Success

Effective corporate communication is not only good for the company's goals, but it can also help the individual goals of employees. This is because it allows for the elimination of surprises and unforeseen events, strengthening employees'

commitment to the overall goals. In this way, employees are also able to achieve their own goals more easily, since they can fulfil the tasks entrusted to them. In this way, good business communication favours promotions and opens up new career advancement opportunities for the most productive employees.

REFERENCES

- Agramunt, L., Berbel-Pineda, J., Capobianco-Uriarte, M., & Casado-Belmonte, M. (2020). Review on the Relationship of Absorptive Capacity with Interorganizational Networks and the Internationalization Process. *Complexity*.
- Al Salman, J., Al Dabal, L., Bassetti, M., Alfouzan, W., Al Maslamani, M., & Alraddadi, B. (2020). Management of infections caused by WHO critical priority Gram-negative pathogens in Arab countries of the Middle East: A consensus paper. *International Journal of Antimicrobial Agents*, 56(4).
- Albrecht, S. L., Connaughton, S., Foster, K., Furlong, S., & Yeow, C. J. L. (2020). Change Engagement, Change Resources, and Change Demands: A Model for Positive Employee Orientations to Organizational Change. *Frontiers in Psychology*. <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.531944>
- Almeida, F., & Simoes, J. (2021). Leadership Challenges in Agile Environments. *International Journal of Information Technology Project Management*, 12(2), 30–44. doi:10.4018/IJITPM.2021040102
- Alvarez, G., & Caregnato, S. (2021). Collaboration revealed through sub-authorship: A scientometric study of acknowledgments in Brazilian articles from Web of Science. *Encontros Bibli-Revista Eletronica de Biblioteconomia e Ciência da Informação*, 26.
- Ashta, A., Stokes, P., & Hughes, P. (2018). Change management in Indo-Japanese cross-cultural collaborative contexts: Parallels between traditional Indian philosophy and contemporary Japanese management. *Journal of Organizational Change Management*, 31(1), 154–172. doi:10.1108/JOCM-05-2017-0201
- Asma, D., Mohsen, M., & Taoufik, A. (2020). Analysis of E-commerce Security using AVISPA. *International Journal of Computer Science and Network Security*, 20(12), 13–20.
- Azevedo, G. (2020). Does Organizational Nonsense Make Sense? Laughing and Learning From French Corporate Cultures. *Journal of Management Inquiry*, 29(4), 385–403. doi:10.1177/1056492618813203

Introduction

Baig, M., Almuhaizea, M., Alshehri, J., Bazarbashi, M., & Al-Shagathrh, F. (2020). Urgent Need for Developing a Framework for the Governance of AI in Healthcare. Academic Press.

Baiyere, A., Salmela, H., & Tapanainen, T. (2020). Digital transformation and the new logics of business process management. *European Journal of Information Systems*, 29(3), 238–59.

Belay, S., Goedert, J., Woldeesenbet, A., & Rokooei, S. (2021). Enhancing BIM implementation in the Ethiopian public construction sector: An empirical study. *Cogent Engineering*, 8(1).

Bittner, V., Szarek, M., Aylward, P., Bhatt, D., Diaz, R., & Edelberg, J. (2020). Effect of Alirocumab on Lipoprotein(a) and Cardiovascular Risk After Acute Coronary Syndrome. *Journal of the American College of Cardiology*, 75(2), 133–44.

Brooks, S., Dunn, R., Amlot, R., Rubin, G., & Greenberg, N. (2017). Social and occupational factors associated with psychological wellbeing among occupational groups affected by disaster: A systematic review. *Journal of Mental Health*, 26(4), 373–384. doi:10.1080/09638237.2017.1294732 PMID:28635439

Campion, T., Sholle, E., Pathak, J., Johnson, S., Leonard, J., & Cole, C. (2022). An architecture for research computing in health to support clinical and translational investigators with electronic patient data. *Journal of the American Medical Informatics Association*, 29(4), 677–85.

Chen, Z., Zhou, L., Lv, H., Sun, K., Guo, H., & Hu, J. (2021). Effect of healthcare system reforms on job satisfaction among village clinic doctors in China. *Human Resources for Health*, 19(1).

Coro, G., Panichi, G., Pagano, P., & Perrone, E. (2021). NLPHub: An e-Infrastructure-based text mining hub. *Concurrency and Computation-Practice & Experience*, 33(5).

Cottler, L., Green, A., Pincus, H., McIntosh, S., Humensky, J., & Brady, K. (2020). Building capacity for collaborative research on opioid and other substance use disorders through the Clinical and Translational Science Award Program. *Journal of Clinical and Translational Science*, 4(2), 81–9.

Croxford, S., Stirling, E., McLeod, S., Biesiekierski, J., Murray, E., & Ng, A. (n.d.). An exploratory study of industry perspectives to inform undergraduate nutrition employability initiatives. *Nutrition & Dietetics*.

- Dias, G., & Silva, M. (2022). Revealing performance factors for supply chain sustainability: A systematic literature review from a social capital perspective. *Brazilian Journal of Operations & Production Management*, 19(1), 1–18. doi:10.14488/BJOPM.2021.037
- Ferrini, V. (2020). Assembling the Bathymetric Puzzle to Create a Global Ocean Map. *Marine Technology Society Journal*, 54(3), 13–7.
- Geada, N. (2021). Management of Change: Pandemic Impacts in IT. *International Journal of Enterprise Information Systems*, 17(2), 92–104.
- Geada, N., & Anunciação, P. (Eds.). (2021). *Reviving Businesses With New Organizational Change Management Strategies*. IGI Global. <http://services.igi-global.com/resolvedoi/resolve.aspx?doi=10.4018/978-1-7998-7452-2>
- Ma, Y., Ni, X., Shi, Y., Yan, C., Shi, L., & Li, Z. (2019). Epidemic characteristics and related risk factors of occupational exposure for pediatric health care workers in Chinese public hospitals: a cross-sectional study. *BMC Public Health*, 19(1).
- Nie, P., Liu, F., Lin, S., Guo, J., Chen, X., & Chen, S. (2022). The effects of computer-assisted cognitive rehabilitation on cognitive impairment after stroke: A systematic review and meta-analysis. *Journal of Clinical Nursing*, 31(9–10), 1136–48.
- Pacheco Pumaleque, A.A., Carbajal, N., Silva, M., & Pacheco, L. (2021). Strategic management model to promote competitiveness in tourism companies in Cañete. *3C Empresa Investigación y pensamiento crítico*, 17–31.
- Pereira, V. R., Maximiano, A. C. A., & Bido, D de S. (2019). Resistance to change in BPM implementation. *Business Process Management Journal*, 25(7), 1564–1586. doi:10.1108/BPMJ-07-2018-0184
- Sarac, M., Adamovic, S., & Saracevic, M. (2021). Interactive and Collaborative Experimental Platforms for Teaching Introductory Internet of Things Concepts. *International Journal of Engineering Education*, 37(4), 1071–1079.
- van de Wetering, R. (2021). Understanding the Impact of Enterprise Architecture Driven Dynamic Capabilities on Agility: A Variance and fsQCA Study. *Pacific Asia Journal of the Association for Information Systems*, 13(4), 32–68.
- van de Wetering, R., Kurnia, S., & Kotusev, S. (2020). The Effect of Enterprise Architecture Deployment Practices on Organizational Benefits: A Dynamic Capability Perspective. *Sustainability*, 12(21), 8902.