

**THE ROLE OF BUSINESS ANALYSTS IN INFORMATION MANAGEMENT
PROJECTS**

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Abstract

Today, companies realize that the integrated portrayal and administration of Information Technology (IT) involve Business Analysis in the course of constructing systems. The significance of business analysts in information management projects is more important than before given the increased adoption of data-based organizations. The role of the business analyst in contemporary organizations can be appreciated in terms of fulfilling a critical role of translating the business need and the available or potential solutions in terms of information management. It provided an understanding of business analysts' diverse roles, such as evaluating business needs, recognizing deficiencies in existing IT solutions, and outlining plans to improve data quality, availability, and protection. The paper further discusses business analytics strategies like descriptive, predictive, diagnostic, and prescriptive analytics to show their application for converting raw data into useful information. It also raises concern with regards to data quality, security and privacy as part of the IM alongside with people, policies, processes, technology and data. Finally, the paper also examines the information life cycle and all relevant activities, applications, and systems connected with data flow in the modern project; the emphasis is placed on the business analyst's roles in the effective management of information that has to become the critical support and a source of competitive advantage for companies.

Keywords: Business Analytics, Information Management, Business Analytics Techniques, Information Life Cycle

I. INTRODUCTION

Information management has also become one of the critical activities within the modern business world, being the basis for decision-making, performance, and strategic planning processes. Due to this increasing reliance on large amounts of data to run organizational operations, the profession of business analysts has evolved and adapted to better meet the complex requirements of managing information goods[1]. The specialization of business analysts is as a connector of a business needs of an organization and an IT solutions, which are intended to fulfill those needs. Apart from guaranteeing the accuracy of data collection, storage and application in accordance to the goals of the organization, the following are supposed to establish and stipulate the need in productive information management. Besides being able to analyze and understand their operational environments, business analysts introduce business value in different ways for information management projects because of their industry experience and technical competency[2]. Also, they work with the IT departments to develop applications that help enhance the quality, retrievability, and protection of the datasets. These professionals engage stakeholders to ensure they understand their needs and proceed to build plans that meet those needs. Thus, they perform

a critical role of supporting organizations to optimize the utilization of their information assets to enhance informed decision-making, organizational efficiency and competitiveness in the market.

A. Motivation and Contribution

As organizations experience increased issues of information management, specialized positions that facilitate the connection between business strategies and technology solutions are critical. With the growing significance of information management projects in organizational decision-making processes, BAs are now critical in guaranteeing that such projects are not only technical but also strategic. Therefore, the purpose of this paper is to discover how business analysts can be a part of and contribute to such projects, especially in a situation where data governance, security, and integration are becoming more challenging. The research contribution as:

- The primary contribution of this paper, therefore, is a detailed examination of the complex nature of business analyst's duties in information management projects.
- It shows how BAs participate in several phases of those, such as requirement gathering, data quality control, and stakeholder management.
- The paper also discusses how BAs play an important role in translating data into useful information with an aim of making information a valuable resource for organizations.
- Therefore, the findings of this study should be useful to practitioners and academicians who want to appreciate the importance of business analysts in the achievement of information management projects.

B. Organization of the paper

The paper is organized as follows: Section I: Introduction provides an overview with contribution and motivation, Section II: Business Analytics in Information Management examines the role of analytics, Section III: Information Management defines key concepts, Section IV: Information Management Activities, Applications, and Systems in Projects discusses relevant tools and systems, Section V: Information Management and Project Stakeholders addresses stakeholder interactions, Section VI: Role of Business Analysts in Information Management Projects focuses on the contributions of BAs, Section VII: Literature Review synthesizes existing research, and Section VIII: Conclusion and Future Work offers final insights and suggests future directions.

II. BUSINESS ANALYTICS IN INFORMATION MANAGEMENT

A business analyst in information management, also known as an IT business analyst or business systems analyst, evaluates information technology systems and suggests ways to improve them to meet business needs. Their contributions are crucial to the software and system development life cycle and may boost project success rates[3]. The figure 1 shows the business analyst in information management.

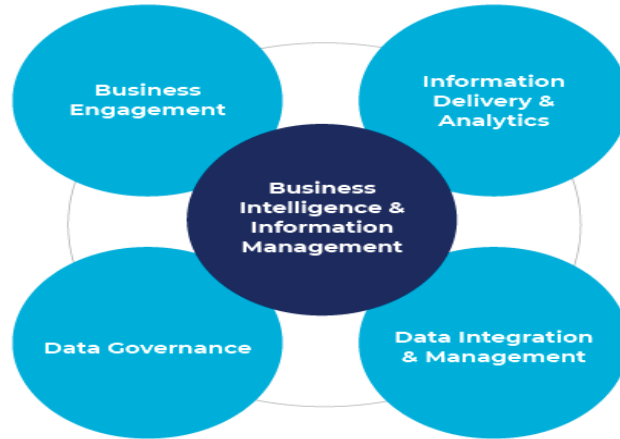


Figure 1: Business Analyst in Information Management

Here are some of the responsibilities of a business analyst in information management[4]:

- Analyze business requirements: Communicate with stakeholders to understand the business landscape, its needs, and its processes.
- Identify gaps and needs: Analyze existing IT systems to identify gaps and needs, and develop solutions to help the organization run more efficiently.
- Create implementation requirements: Create IT strategies in collaboration with relevant parties, and fine-tune the functions performed by IT staff.
- Translate requirements into specifications: Gather business requirements from different areas of the organization and translate them into functional system design specifications that IT development teams can execute.
- Use data analytics: Use data analytics to improve products, services, and software, and help drive the business in the right direction.

Business analysts in information management need to have a variety of skills, including:

- Analytical skills: Being able to see the big picture and make good decisions
- Communication skills: Being able to collaborate, negotiate, and facilitate, and interact with different stakeholders
- Creative thinking: The ability to think creatively and solve issues in novel ways
- Interpersonal skills: Having strong leadership, teamwork, and conflict management skills
- Organizational skills: Being able to manage priorities and meet deadlines

A. Business Analytics Techniques

Figure 2 illustrates the importance of many key business analytics methodologies, including diagnostic, predictive, prescriptive, and descriptive analysis.

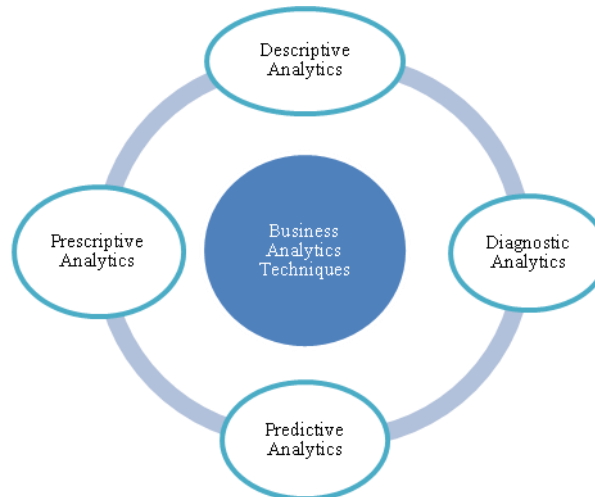


Figure 2: Techniques of Business Analytics

The following techniques are discussed:

- **Descriptive Analytics:**The first step in data analysis is descriptive analytics, which summarizes raw data into intelligible summaries to provide a complete picture of the present state of affairs.
- **Diagnostic Analytics:**To get to the bottom of why certain results or discrepancies happened in a dataset, diagnostic analytics utilizes advanced methods like data mining and statistical modelling.
- **Predictive Analytics:** Businesses may now proactively negotiate the complexities of a dynamic marketplace with the help of predictive analytics, which is much different from the traditional paradigms of insights produced by hindsight.
- **Prescriptive Analytics:**Using advanced tools like optimization modelling and simulation, prescriptive analytics assesses several situations and proposes the best course of action.

III. INFORMATION MANAGEMENT

There is some ambiguity around the definition of "information management" in various academic works. For example, in computer science and related fields, it can mean either "information technology management" or "data management," the latter of which places more focus on the relationships between database design and the structures underlying quantitative data[5]. Its meaning in the field of business and management is similar to that of technology management, with a focus on how IT affects a company's capabilities and ability to compete. It is associated with the "growing demand" for information workers (managers) in librarianship and information science, whose understanding of information encompasses data, BI (organizational and competitive), external RI (resources of information of various types), and the related technology (for managing these various sources). The latter context's information management focusses more on the information user's interpretation of the data and problems with data retrieval than the former[6].

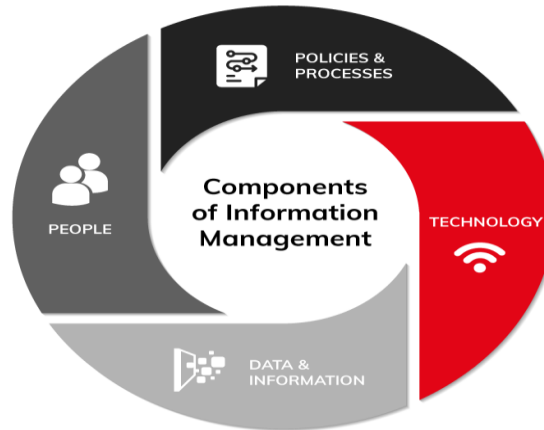


Figure 3: Components of IM

The four primary components of information management are people, technology, rules and procedures, and data and information. As figure 3 illustrates, each of these elements must cooperate with the others to guarantee successful and efficient business results.

- **People:** Humans are at the core of every organization, regardless of how data-intensive its operations may be. Both daily operations and information systems rely on human interaction to some degree, from the personnel who are directly engaged in information management to the information makers and consumers.
- **Policies and processes:** Information management's defining rules and methods are equally crucial. Data archiving and deletion timelines, storage protocols, and security measures are all aspects of information management that may be affected by the implementation of an IM framework.
- **Technology:** Effective information management in businesses may be hindered by technology, which also plays a significant role. Businesses might benefit from a framework that specifies how and where data should be kept, accessed, and utilized, particularly with the proliferation of application suites like Office 365.
- **Data and information:** Data and information are crucial components of information management, while this may come as no surprise. The efficient use of an organization's IP depends on data and information as well as people, rules, and technology.

A. The elements of information management

Various streams have interacted to shape the evolution of information management. To start with, it has its roots in many different areas that have long dealt with document-related tasks, such as gathering, organizing, maintaining, and using data:

- Information management (IM) started in fields like archives, records management, and librarianship.
- IM deals with things like organizing, storing, and retrieving information, and the economics of information.
- The rise of information technology (IT) has greatly shaped IM by making the costs and value of information more noticeable.
- Business concepts like strategic planning, cost-benefit analysis, resource management, and marketing have also influenced IM.

- Businesses and public organizations alike are implementing these principles into their information management strategies.

B. The information life cycle

An information life cycle is based on the concept of a document life cycle, which is fundamental to records management. Following are the stages that make up the record life cycle, which is also known as "document control"[7]:

- Design and Creation of Records;
- Identification;
- Authorization;
- Verification, Validation, Auditing;
- Circulation, Access, Loan, Use;
- Back-Up Procedures and Disaster Recovery
- Plans;
- Retention Schedules and Destruction.

Information kind, organization method, usage, and controls all play a role in shaping the life cycle, which in turn varies from company to company[2].

IV. INFORMATION MANAGEMENT ACTIVITIES, APPLICATIONS AND SYSTEMS IN PROJECTS

In this chapter, "information management" is defined as the processes that influence the movement of knowledge, data, and information rather than tangible commodities. A large portion of this movement is facilitated and enabled by digital means on contemporary projects. Information management tasks, along with the applications and systems that support them, are intricate and interdependent in modern large-scale projects [8]:

- **Storage and retrieval systems:** A centralized data repository may be necessary for a big project to store hundreds of thousands of papers or product models that detail the deliverables, who made each design decision, how the project is progressing, and the procedures for approvals and quality assurance. Everyone involved in the project, from team members to upper management, as well as outside parties like customers and regulators, have unique permission settings for these databases.
- **Digital models and prototypes:** The development of systematic procedures and standards for the collaborative usage of digital models and prototypes by all parties involved in a project is a continuous endeavor. Smart 3D and 4D (3 spatial dimensions plus time) models are becoming more popular, and their usage is altering project work by making and integrating various types of information, like that from GIS and CAD, from the very beginning of a project.
- **Automated search facilities:** These enable the analysis of textual and geometric data sets, the creation of linkages across datasets, and the identification of exceptions. These methods find extensive use in a variety of settings, including but not limited to: 3D interference checks between mechanical and structural systems, screening for tumors and airline luggage, and forensic investigations. Some project-based sectors, however, have heated discussions on the usefulness of very expensive and labor-intensive automated search procedures. Pharmaceutical high-throughput screening and oil and gas 4D reservoir scanning are two examples.

- **Simulation programmes:** Model performance may be better understood via the use of simulations. One-way algorithms may bring together disparate datasets by comparing millions of simulations that have already been calculated with up-to-the-minute information on actual operations and selecting the best match. Data from models and simulations is being used more and more.
- **Communications technologies:** Connected, mobile, and visual devices allow project managers and engineers to communicate via text, audio, and video communications technologies. It also shares access to centralized data-sources. Breakthroughs in this field are enabling a massive reorganization of tasks across different locations and even other continents.

V. INFORMATION MANAGEMENT AND PROJECT STAKEHOLDERS

Physical information management is being overlaid and transformed by digital technology. The importance of data life-cycle management is on the rise, and as a consequence, stakeholders use them extensively in all project stages, not just management planning, when interacting with one another. A model is often the backbone of a more extensive collection of information sources for all parties involved in a project, where [8]:

- The clients are using technical and financial simulations, email, the Internet, automated search engines, and knowledge management systems to manipulate information while creating business cases. The design is being actively engaged with throughout the project using various simulations (egress, manufacturing, etc.) and visual representations of plant or building models.
- To improve stakeholder communication and prepare ahead, engineers and technical managers use digital models in conjunction with a range of scanning and monitoring technologies.
- As the project progresses, they will use a variety of tools and resources, including performance data, standards, schedules, CAD, organization and work process simulations, databases containing lessons learnt, databases containing projects, extranets, email, mobile technologies, and online communities of practice to share information within and between companies and with project supply chains.
- Digital as-built facility models, HVAC system or factory distributed control systems, facilities management databases that aid in warranty administration, subsystem depreciation calculations, etc., and design drawing archives are all tools useful to facility managers.
- Environmental impact assessments and public involvement are being facilitated by regulators via the use of information management technology, such as wikis. The practice of automatically validating the code of complete building information models was first used in Singapore.

The digital infrastructure necessary to complete projects is provided by these technologies when used together. It significantly impacts the movement of information, knowledge, and data, and hence the management of project tasks. Researchers have claimed that they are changing the fabric of organizations [9] and 'intensifying' innovation processes [10].

VI. ROLE OF BUSINESS ANALYSTS IN INFORMATION MANAGEMENT PROJECTS

Information Management (IM) projects involve Business Analysts (BAs) who act as intermediaries between the business requirements and the technology solutions. This is vital since they are meant to be a part of IM project delivery, as well as planning and implementation. Here's a detailed look at their roles:

A. Requirements Gathering and Analysis

Some of their primary functions are also the activity such as requirement gathering and analysis. This also indicates that the stakeholders are involved in the development of information management system, where BAs relay their needs of the stakes and record them to ensure the creation of a proper system that can be embraced by the organization.

- **Identifying Needs:**As for the BAs, their main duties include collecting and recording stakeholders' requirements to ensure the information management system corresponds to the organization's needs.
- **Defining Scope:** They help in defining the project scope by translating business needs into clear, actionable requirements.
- **Prioritizing:**The BAs sort out the requirements by business value, which allows to implement the most important functionalities faster.

B. Stakeholder Communication

Another important domain of BAs' engagement involves the communication with stakeholders. This role is charged with the responsibility of making sure that the project is on track and that any problems are fixed.

- **Liaison Role:** BAs act as a liaison between business stakeholders and the technical team, ensuring clear communication and alignment on project objectives.
- **Facilitating Meetings:**They use workshops, interviews, meetings, and the like to get feedback and provide information regarding the project.

C. Process Mapping and Improvement

In the context of process mapping and improvement, BAs scrutinize the business processes involved in information management to discover problems and opportunities for change. This work is beneficial to reap full benefits that are associated with the new system and integrating the system with business operations.

- **Analyzing Current Processes:** BAs analyze existing business processes related to information management, identifying inefficiencies and areas for improvement.
- **Designing Future Processes:** They design optimized workflows that leverage the new information management system, ensuring smoother operations.

D. Data Management and Governance

For data management and governance standpoint, BAs also make sure that the data contained in the IM system is correct, complete, and well protected compliance to data governance policies.

- **Data Quality Management:** BAs ensure that data within the IM system is accurate, consistent, and secure, adhering to data governance standards.
- **Metadata Management:** They help define and manage metadata to improve data discoverability and usability across the organization.

E. Solution Design and Evaluation

BAs are also involved in the IM projects when it comes to design and evaluation of solutions.

- **Selecting Tools and Technologies:**BAs analyze a range of IM tools and technologies within organizational environments and identify suitable IM solutions based on requirements and technologies.
- **Feasibility Analysis:**They make evaluations so that they can identify the feasibility of the solutions under discussion.

F. Risk Management

Another area where BAs may make a difference is in risk management. It brings out possible risks concerning data security, compliance and project delivery and the measures needed to cover or avoid the risks respectively. That way, matters likely to cause hitches on the project or jeopardize the results are detected and dealt with before they occur.

- **Identifying Risks:** BAs identify potential risks related to data security, compliance, and project delivery.
- **Mitigation Strategies:**They ensure the project's success by developing and implementing measures to reduce identified risks.

VI. LITERATURE REVIEW

This section provides some previous related study on business analysts in information management projects:

This paper, Vidgen, Shaw and Grant, (2017) explores the obstacles encountered by business leaders who are aiming to generate value via increased reliance on data and information. Our empirical research used a mixed-methods approach, gathering data from two sources: (1) a Delphi survey conducted with practitioners via several forums and (2) in-depth interviews with business analytics managers from three case organizations. The case studies corroborated the Delphi results and brought attention to many problem areas, such as the following: businesses need an analytics and data strategy, the proper personnel to implement a data-driven culture shift, and data and information ethical considerations when gaining a competitive edge via data. Moreover, enterprises must first structure their business analytics departments to include business analysts, data scientists, and IT staff. Secondly, they must match their business strategy with their business analytics capabilities in order to address the analytics challenge holistically and collaboratively. Becoming data-driven is not just a technical challenge. Consequently, by highlighting the crucial business domains and operations to focus on in order to accomplish this shift, this article offers a business analytics ecosystem for enterprises that advances the corpus of academic research[11].

This paper, Appelbaum et al., (2017) provides a business intelligence-based Managerial Accounting Data Analytics (MADA) framework based on the balanced scorecard principle. Management accountants may assess performance and get information relevant to decisions by using MADA's extensive business analytics capabilities. In an enterprise system setting, four views on corporate performance measurement—financial, customer, internal process, and learning and growth—are integrated with three forms of business analytics—descriptive, predictive, and prescriptive—through the use of MADA. Additional topics covered include data quality and data integrity, which are related concerns that impact the effective use of business analytics inside an enterprise-wide BI system. In addition to offering the MADA framework, which integrates balanced

scorecard methodology, this study adds to the body of literature by examining the influence of business analytics on management accounting by an enterprise systems and BIviewpoint[12]. The Table 1 provide the existing literature work on the topic the role of business analyst in information management projects that were explained below:

Table 1: Summary of the Literature work on Business Analysts in Information Management

Ref	Methodology	Performance	Limitations & future work
Vidgen, Shaw and Grant,[11]	Delphi study + interviews with business analytics managers	Identified key challenges for becoming data-driven and developed a business analytics ecosystem.	Limited generalizability; explore scalability for larger systems.
Appelbaum et al.,[12]	MADA framework using balanced scorecard in a business intelligence context	Integrated analytics for managerial accounting in enterprise systems.	Focus on data quality/integration; refine MADA for diverse industries.

VIII. CONCLUSION AND FUTURE WORK

The purpose of this paper is to discuss the importance of business analysts (BAs) in information management projects and how their contribution influences the achievement of the project results through facilitating requirements identification, stakeholders' engagement, and problem solving. In conclusion, business analysts are central to information management projects in that they facilitate the linking of organizational goals and strategies to technological initiatives in a world that has become increasingly data-driven. Business analysts do not only help to specify the requirements for business needs in terms of functional systems and applications but also have the responsibility of data quality, protection, and management especially throughout its entire life-cycle. Thus, the importance of business analysts in solving complex problems and providing unique solutions will remain essential when the need for effective management of large amounts of information increases as key drivers for business growth in the face of digitalization. Further studies could investigate how business analyst positions continue to grow within AI, ML, and big data analytics in information management initiatives. Examining how BAs can work with these technologies and share in increased complexity, data-oriented surroundings will be important. Further, more empirical research and analysis on the application of BAs in measuring the outcome of projects in different sectors could offer more ideas on how to implement the BAs more effectively and also corroborate the results of this paper.

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