



BUSINESS INTELLIGENCE FOUNDATION

PROFESSIONAL CERTIFICATION



BIFPC™ Version 092022



BUSINESS INTELLIGENCE FOUNDATION PROFESSIONAL CERTIFICATION BIFPC™



Who is Certiprof®?

Certiprof® is a certifying entity founded in the United States in 2015, currently located in Sunrise, Florida.

Our philosophy is based on the creation of knowledge in community and for this purpose its collaborative network is formed by:

- **Our Lifelong Learners (LLL)** identify themselves as Continuous Learners, demonstrating their unwavering commitment to lifelong learning, which is vitally important in today's ever-changing and ever-expanding digital world. Regardless of whether or not they win the exam.
- Universities, training centers, and facilitators around the world are part of our network of **CPLS (Certified Partner For Learning Solutions)**.
- **Authors (co-creators)** are industry experts or practitioners who, with their knowledge, develop content for the creation of new certifications that respond to industry needs.
- **Internal Staff:** Our distributed team with operations in India, Brazil, Colombia and the United States is in charge of overcoming obstacles, finding solutions and delivering exceptional results.



Our Affiliations

Memberships



Digital badges issued by



IT Certification Council – ITCC

Certiprof® is an active member of ITCC.

One of the importance of being part of the ITCC is how industry leaders collaborate with each other in an open format to explore new or different ways of doing business that inspire and encourage innovation, establishing and sharing best practices that allow us to extend that knowledge to our community. Certiprof has contribute with white papers in the Career Path Ways Taskforce a taskforce that was implemented internally to offer students with the opportunity to know what path to take after a certification.

- **IBM**
- **CISCO**
- **ADOBE**
- **AWS**
- **SAP**
- **GOOGLE**
- **ISACA**



Certiprof® is a corporate member of the Agile Alliance.

By joining the Agile Alliance corporate program, we continue to empower people by helping them reach their potential through education. Every day, we provide more tools and resources that enable our partners to train professionals who seek to enhance their professional development and skills.

<https://www.agilealliance.org/organizations/certiprof/>



This alliance allows individuals and companies certified or accredited with Certiprof® to have a worldwide distinction through a digital badge.

Credly is the world's largest badge repository, and leading technology companies such as IBM, Microsoft, PMI, Nokia, and Stanford University, among others, issue their badges with Credly.

Companies issuing knowledge validation badges with Credly:

IBM

Microsoft

PMI

Universidad de Stanford

Certiprof



Digital Badges



According to a study by the IT Certification Council (ITCC), people knew little about digital badges years ago. Today, large companies and educational institutions around the world issue badges.

Digital badges contain detailed metadata about who earned them, the competencies required, and the organization that issued them. Some badges are even linked to the activities needed to attain them.

For companies and educational institutions, badges and the information they provide are so important that many decisions, such as hiring or admission decisions, are based on the data they provide.

Digital Badges:
What Are They?



Why are they important?



- **Ease of Sharing and Verifying Achievements:**

Digital badges allow professionals to showcase and verify their achievements instantly and globally. According to a Credly report, **LinkedIn profiles with digital badges receive 40% more attention from recruiters and employers.**

- **Visibility on Digital Platforms:**

In a survey conducted by Pearson and Credly, **85%** of users who earned digital badges shared them on LinkedIn, and **75%** reported that this improved their **professional credibility in their networks.** In addition, **76%** of employers surveyed said that digital badges help them quickly identify specific skills.



Why are they important?

- **Hiring Impact:**

A study by the **International Project Management Association (PMI)** found that candidates who display project management digital badges are **60%** more likely to be hired compared to those who only mention their skills without digital verification.



Why are they important?

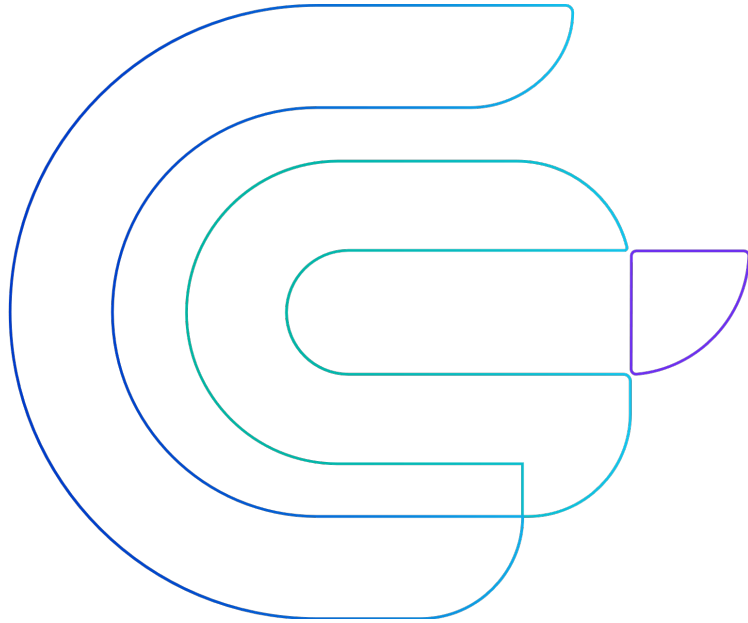


- **Personal Brand Empowerment:**

Digital badges' instant visibility and verification allow professionals to demonstrate their skills and build a solid personal brand. According to a LinkedIn study, professionals who use digital badges **are 24%** more likely to advance in their careers.

Certification and digital badges validate knowledge and are powerful tools for continuous improvement and employability. In a world where lifelong learning has become the norm, these credentials are key to professional development and competitiveness in the global job market.





Not all badges are created equal, and at **Certiprof**, we are committed to offering you more than just digital recognition. By earning a badge issued by certiprof, you will receive validation of your knowledge backed by one of the world's leading professional certification bodies.

Take the next step and earn the badge that will open doors and position you as an expert in your field.



Why getting your certificate is essential?

- **Proof of Expertise:** Your certificate formally acknowledges the skills and knowledge you've acquired. It serves as verifiable proof of your qualifications and demonstrates your commitment to excellence in your field.
- **Credibility and Recognition:** In today's competitive job market, employers and peers value credentials that distinguish you from others. A certification certificate from a recognized institution, like Certiprof, provides instant credibility and boosts your professional reputation.
- **Career Advancement:** Having your certificate can open doors to new opportunities. Whether it's a promotion, a raise, or landing a new job, certifications are critical differentiator employers look for when evaluating candidates.



Why getting your certificate is essential?

- **Networking Opportunities:** Holding a certificate connects you with a network of certified professionals. Many organizations have alumni or networking groups where you can share experiences, exchange ideas, and grow your professional circle.
- **Personal Achievement:** Earning a certification is a significant accomplishment, and your certificate is a tangible reminder of the hard work, dedication, and progress you've made. It's something you can be proud of and showcase to others.





Earn this Badge

Business Intelligence Foundation Professional Certification - BIFPC™

Issued by [Certiprof](#)

Earners of the BI Foundation Professional Certification have a basic knowledge of Business Intelligence. They can know the History, Implementation Process, Architecture, and type of BI Analysis. They can understand business intelligence concepts and how you can develop visualizations and data knowledge to make better business decisions.

[Learn more](#)

 Certification

\$ Paid

Skills

Communication skills and critical thinking

Data Analysis

Data Mining

<https://www.credly.com/org/certiprof/badge/business-intelligence-foundation-professional-certi>



Lifelong Learning

- Certiprof has created a special badge to recognize consistent learners.
- By 2024, more than 1,000,000 of these badges have been issued in over 11 languages.

Purpose and Philosophy

- This badge is intended for people who firmly believe education can change lives and transform the world.
- The philosophy behind the badge is to promote commitment to lifelong learning throughout life.

Accessing and Earning the Badge

- The Lifelong Learning badge is awarded at no cost to those who identify with this approach to learning.
- Anyone who considers themselves to be a lifelong learner can claim their badge by visiting:

<https://certiprof.com/pages/certiprof-lifelong-learning>



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SHARE AND VERIFY YOUR **LEARNING** **ACHIEVEMENTS** EASILY

#BIFPC #certiprof



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Business Intelligence (BI) Foundation



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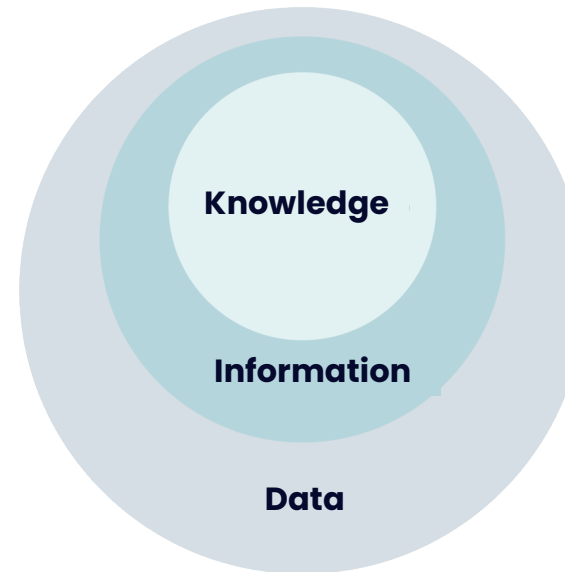


Business Intelligence

"Business Intelligence is a combination of technology, tools and processes that allow me to transform my stored data into information, this information into knowledge and this knowledge directed to a business plan or strategy."



(https://www.sinnexus.com/business_intelligence/)



What is Business Intelligence?

It is a technological term that includes:

- Strategies
- Data
- Applications
- Products
- Processes
- Any digital resource that provides a capacity for collection, storage and analysis.

Of the information that a company generates on a daily basis in order to optimize its performance.

(<https://cimatic.com.mx/business-intelligence/>)



A Little History...

- In 1989, the concept of **Business Intelligence** was coined by Howard Dresner, who defined it as methods to improve business decision making through the use of evidence-based support systems. But it was not until the following decade that it became successful.
- In the 1990s, more business intelligence tools began to be developed and marketed as companies saw the potential of this type of solutions and demand for them increased. However, these first softwares were not very intuitive, difficult to use and very specialized.
- Given this, the challenge arose to design **Business Intelligence** solutions that were faster and much easier to use so that all company personnel would have access to these tools and would be able to manage and analyze all their information in a secure and advanced way.

► (<https://cimatic.com.mx/business-intelligence/>)



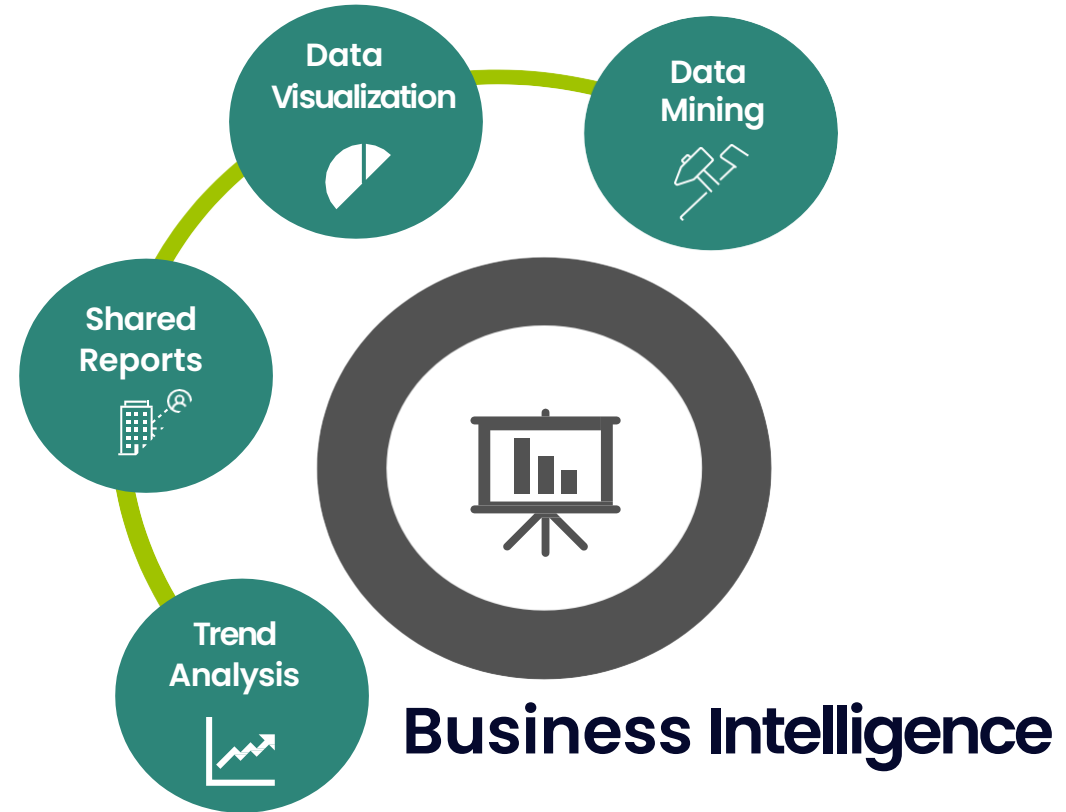
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BI



Modern BI

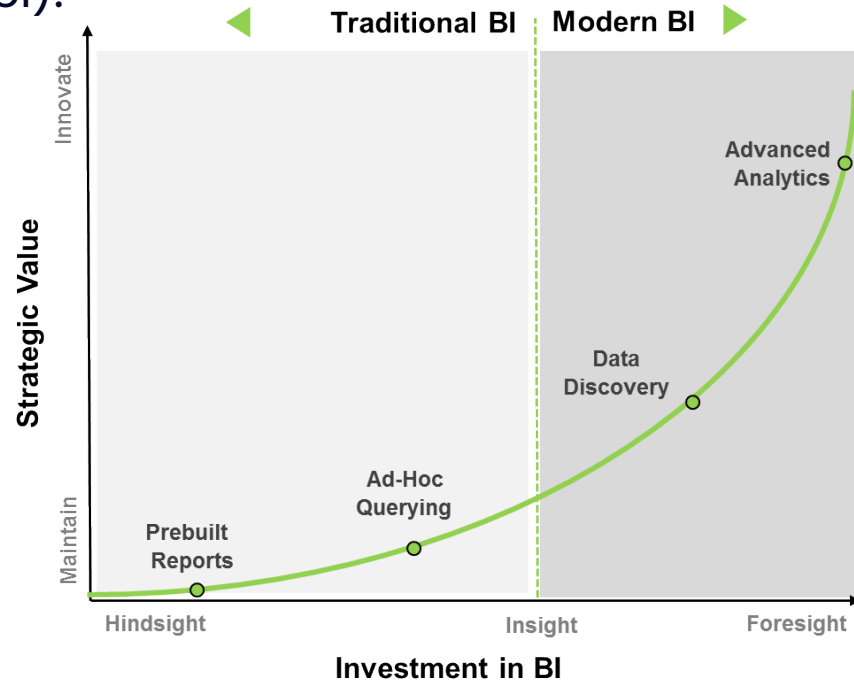
- Today, Business Intelligence has evolved to include more processes and activities. These processes include:



BI Today

As organization investment in data modernization increases, value grows exponentially and changes from hindsight to insights to foresight

This allows company executives without advanced technical knowledge to have access to the data current and historical information for decision making (strategic level).



► (<https://www.deloitte.com/content/dam/Deloitte/tr/Documents/deloitte-analytics/Modern%20Business%20Intelligence.pdf>)



What is BI for?

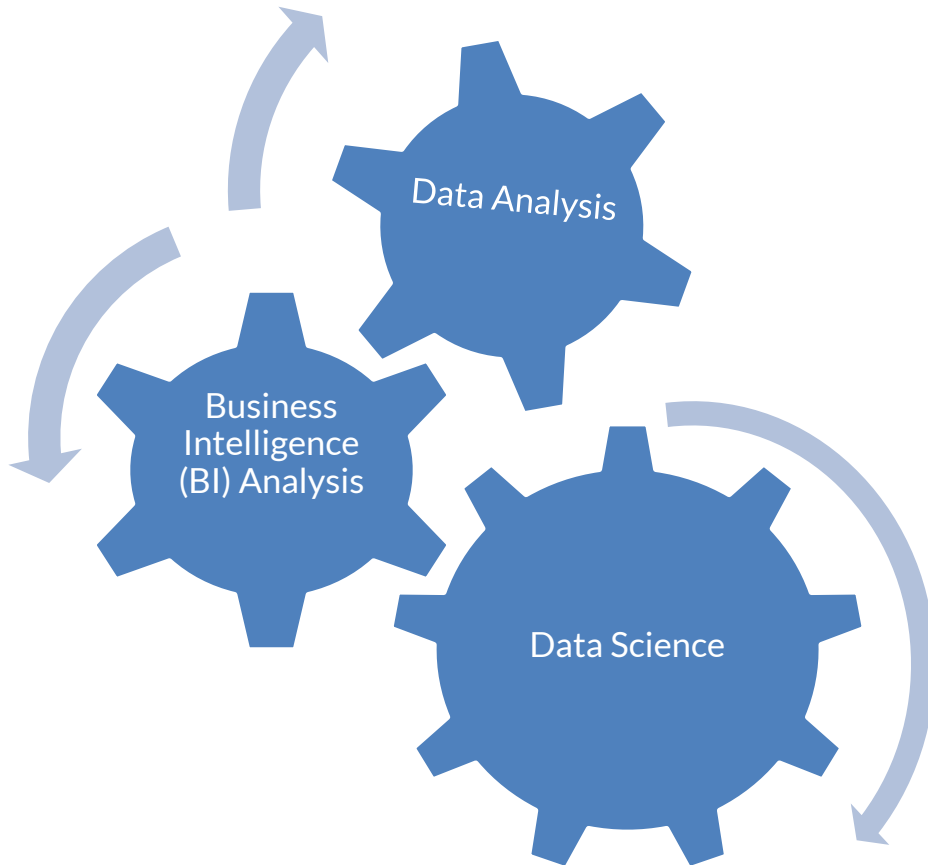
The main function of BI is to group as much data as possible effectively and facilitate its interpretation. The union of both internal and external data offers a more complete view of the business.

- Improve decision making
- Increasing Productivity and Efficiency
- Predicting market behavior
- Identify new business opportunities
- Make sales and financial projections

<https://www.concur.co/news-center/inteligencia-empresarial>



Interaction



- Data Analysis: Extraction, Retrieval, Classification
- BI Analysis: Helps to draw conclusions from data analysis, through statistical analysis.
- Data Science: Discovering patterns and forecasting future patterns, using advanced statistics and predictive analytics.



BI Analysis Categories

There are three main types of BI analytics, covering many different needs and uses. These are predictive analytics, descriptive analytics and prescriptive analytics.



Advantages of BI Implementation

- Data clarity
- Increased efficiency in the analysis.
- Reports adaptable to the needs.
- Customized dashboards and scorecards
- Consumption of large amounts of data.
- Identification of new business opportunities
- Saves time by optimizing processes
- Data-driven business decisions
- Increased competitive advantage



► (<https://www.tableau.com/learn/articles/business-intelligence>)



Before starting... Strategy:

- A BI strategy is your blueprint for success. You will need to decide how data is used, compile key roles and define responsibilities in the initial phases.
1. Know your business strategy and goals.
 2. Identify key stakeholders.
 3. Choose a sponsor from your key stakeholders.
 4. Choose your BI platform and tools.
 5. Create a BI team.
 6. Define your scope.
 7. Prepare your data infrastructure.
 8. Define your goals and roadmap.

<https://www.tableau.com/learn/articles/business-intelligence>



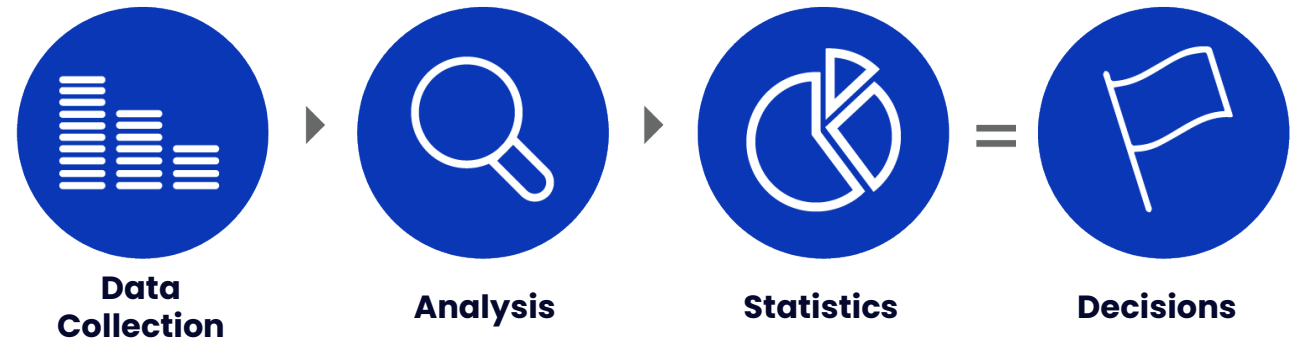
Implementation Process

A complete BI solution allows:

- **Observe** what is happening?
- **Understand** why it happens?
- **Predict** what would happen?
- **Collaborate** – what should the team do?
- **Decide** which path to follow?

Business Intelligence Analyst

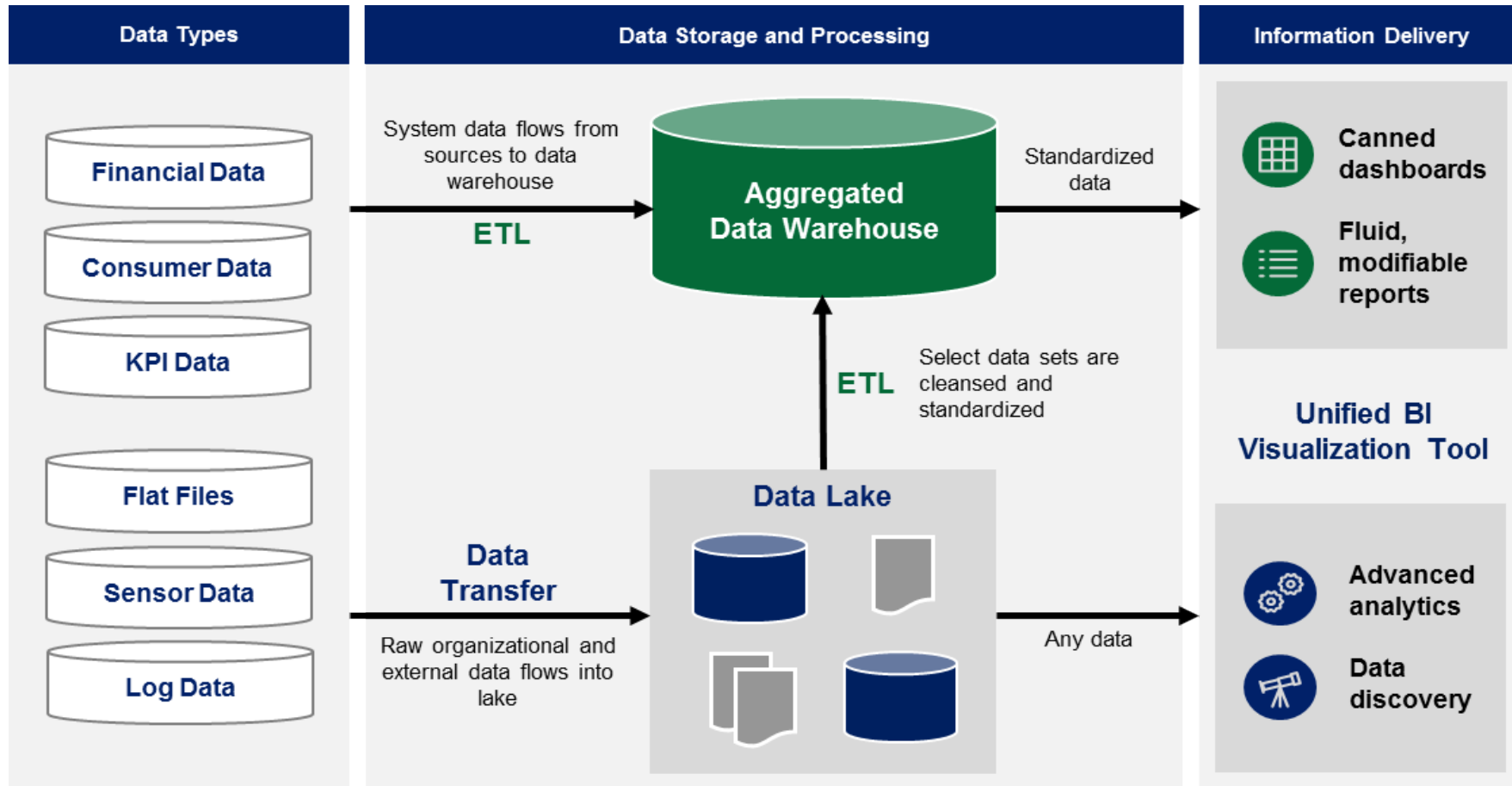
Phases



(https://www.sinnexus.com/business_intelligence/)



Implementation Scheme



ETL (Extract, Transform, and Load)
Extract, Transform, and Load Data

(<https://www2.deloitte.com/content/dam/Deloitte/tr/Documents/deloitte-analytics/Modern%20Business%20Intelligence.pdf>)



BI Platforms

Many business intelligence tools and platforms streamline the analysis process. This makes it easier for people to see and understand their data.

- Intuitive to use
- Variety of dashboards and display options.
- Intelligent information
- Alerts for good and bad metrics
- Integrated artificial intelligence (AI)
- Flexibility of implementation
- Integration with other platforms and applications
- Data connectivity
- Integration in commercial applications



(<https://www.tableau.com/learn/articles/business-intelligence>)



What capabilities do you need to choose a platform?

Do you need front-end functionality with data visualization and self-service analytics?



Looking to integrate other enterprise applications and systems?



Do you require centralized data storage in data warehouse form?



BI Platforms Market

There are many commercial and open source BI platforms available in the market such as Qlik sense, Power BI, Tableau, MicroStrategy, they offer different user experiences and functionalities. However, in general, they all offer a combination of the following functionalities:

- Customizable and Dynamic Dashboards
- Data visualizations
- Report scheduling
- Data quality management and monitoring
- Faster data mining capability
- Monitoring of performance against KPIs (Key Performance Indicators)

(<https://www.tableau.com/es-es/learn/articles/business-intelligence/choosing-bi-platforms>)

Figure 1: Magic Quadrant for Analytics and Business Intelligence Platforms



Source: Gartner (March 2022)

(Gartner (March 2022))



Some BI Platform Statistics

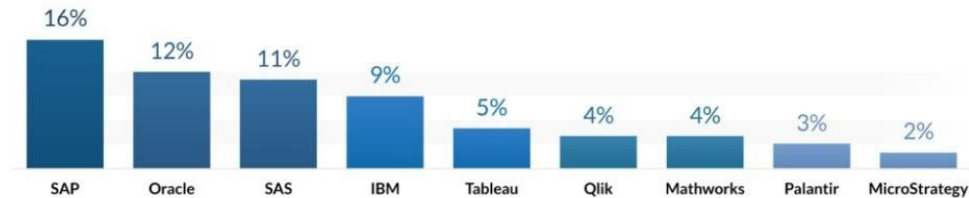
3 Key Business Intelligence Statistics You Should Know

FinancesOnline
REVIEWS FOR BUSINESS

1 Top business intelligence software vendors in the world

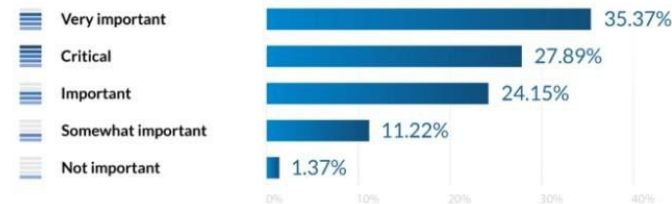
Sources: VitrVibe

BI software vendors by market share:



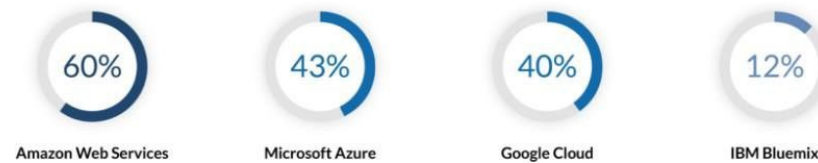
2 Importance of data preparation according to companies

Source: Dresden Wisdom of Crowds BI Study 2019



3 Top IAAS platforms preferred by BI vendors

Sources: Dresden



<https://financesonline.com/business-intelligence-software-statistics/>



Business Cases Using BI

Coca-Cola Bottling Company maximized operational efficiency

Company: Coca-Cola Bottling Company (CCBC), Coca Cola's largest independent bottling partner

Problem: Manual reporting processes restricted access to real-time sales and operations data.

Solution: Coca-Cola's business intelligence team handles reporting for all sales and delivery operations at the company. With their BI platform, the team automated manual reporting processes, saving over 260 hours a year—more than six 40-hour work weeks. Report automation and other enterprise system integrations put customer relationship management (CRM) data back into the hands of sales teams in the field through mobile dashboards that provide timely, actionable information and a distinct competitive advantage. A self-service BI implementation fosters more effective collaborations between IT and business users that maximize the expertise of participants. Analysts and IT can focus on big-picture strategy and long-term innovations such as enterprise data governance rather than manual research and reporting tasks.

<https://www.tableau.com/learn/articles/business-intelligence-examples>



Business Cases Using BI

HelloFresh centralized digital marketing reporting to increase conversions

Company: HelloFresh

Problem: Digital marketing reporting was time-intensive, manual, and inefficient.

Solution: For meal kit company HelloFresh, a centralized business intelligence solution saved the marketing analytics team 10-20 working hours per day by automating reporting processes. It also empowered the larger marketing team to craft regional, individualized digital marketing campaigns. Based on aggregate analyses of customer behavior, HelloFresh created three buyer personas to guide their efforts. Being able to see and track real-time data means the team can react to customer behaviors and optimize marketing campaigns. As a result, they saw increased conversion rates and improved customer retention.

<https://www.tableau.com/learn/articles/business-intelligence-examples>



Business Cases Using BI

Chipotle created a unified view of restaurant operations

Company: Chipotle

Problem: Disparate data sources hindered teams from seeing a unified view of restaurants.

Solution: Chipotle Mexican Grill is an American restaurant chain with more than 2,400 locations worldwide. Chipotle retired their traditional BI solution for a modern, self-service BI platform. This allowed them to create a centralized view of operations so they can track restaurant operational effectiveness at a national scale. Now that staff have more access to data, the speed of report delivery for strategic projects has tripled from quarterly to monthly and saved thousands of hours. “This was the ticket to take all metrics and understanding to that next level,” explained Zach Sippl, Director of Business Intelligence

<https://www.tableau.com/learn/articles/business-intelligence-examples>



Conclusion on the Search for a BI Platform

- Simple analytics platforms import, clean, analyze, and forecast data, but the BI are more robust and dynamic, and can adapt as your BI strategy grows.
- Enterprise platform enables business agility without sacrificing Data governance and security



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ETL



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ETL Fundamentals

- ETL is a type of data integration that refers to the three steps (extract, transform, load) used to blend data from multiple sources.
- It is often used to build a data warehouse. During this process, data is taken (extracted) from a source system, converted (transformed) into a format that can be stored and stored (loaded) into a data warehouse or other system.
- **Datawarehouse:** It is a repository of easily accessible data, fed from numerous sources, transformed into groups of information on specific business topics.

https://www.sas.com/es_ar/insights/data-management/what-is-etl.html



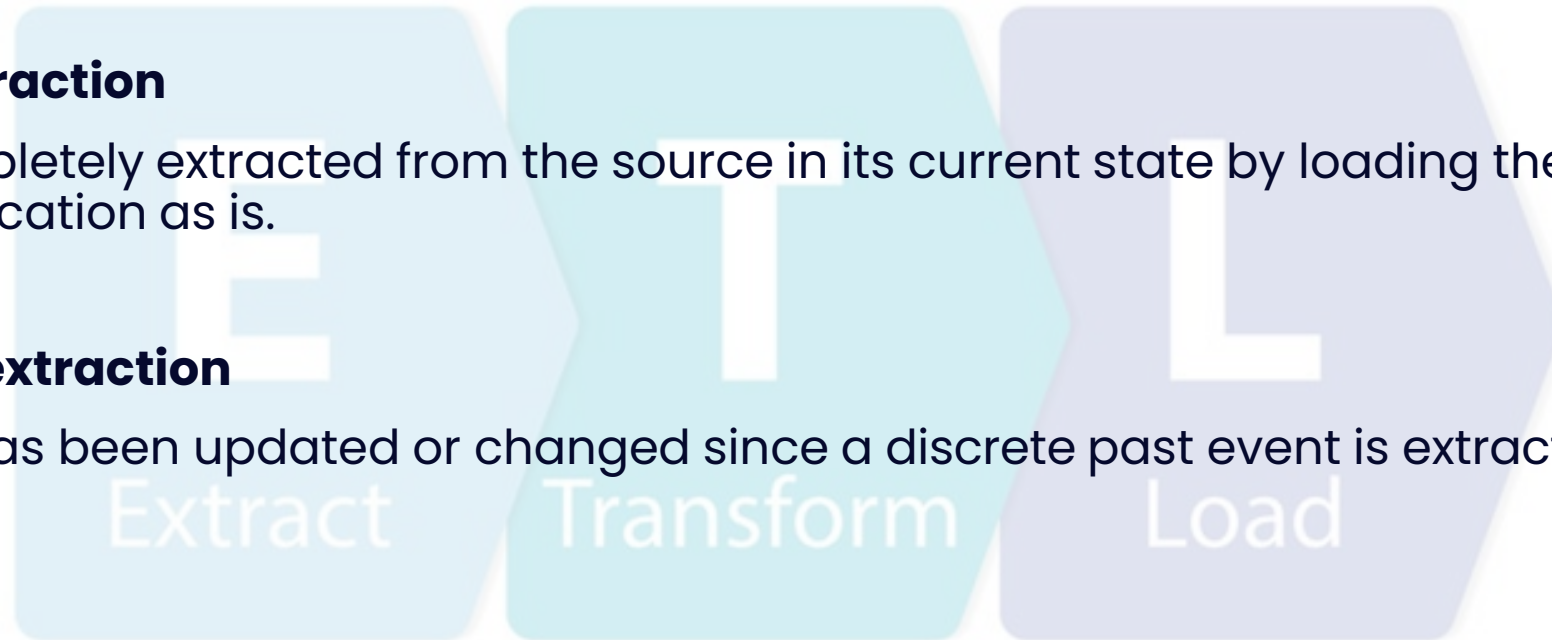
Extraction Techniques

- **Complete extraction**

The data is completely extracted from the source in its current state by loading the source table into the target location as is.

- **Incremental extraction**

Only data that has been updated or changed since a discrete past event is extracted.



<https://www.astera.com/es/type/blog/database-extraction/>



Database Extraction Challenges

- Unstructured / semi-structured data
 - Compatibility problems
 - Data quality and security
 - **Data:** Concrete information on facts, elements, etc., that allows them to be studied, analyzed or known.
- * **Database:** It is an organized collection of information or structured data, which is usually stored electronically in a computerized system



Data Transformation

- It is the process of converting data from one format to another format that is more usable by the target system or application. It includes multiple activities: you can 'transform' your data by filtering it according to certain rules and joining different fields to obtain a consolidated view. Transformation tools help you achieve your final result with ease.



<https://www.astera.com/es/type/blog/data-transformation-tools/>



Data Loading

- In this phase, data from the previous phase (transformation phase) is loaded into the target system. Depending on the requirements of the organization, this process can encompass a wide variety of different actions.



<https://blog.powerdata.es/el-valor-de-la-gestion-de-datos/qu-son-los-procesos-etl>



Types of Data Loading

- **Simple accumulation:** This way of loading data consists of making a summary of all the transactions within the selected time period and transporting the result as a single transaction to the data warehouse, storing a calculated value that will typically consist of a sum or an average of the magnitude considered. This is the simplest and most common way to carry out the loading process.
- **Rolling:** This process would be the most advisable in cases where several levels of granularity are to be maintained. For this purpose, summarized information is stored at different levels, corresponding to different groupings of the time unit or different hierarchical levels in one or more of the dimensions of the stored magnitude (for example, daily totals, weekly totals, monthly totals, etc.).

<https://blog.powerdata.es/el-valor-de-la-gestion-de-datos/qu-son-los-procesos-etl>



Data Granularity in Data Loading

- What is datawarehouse granularity?

Granularity represents the level of detail at which you want to store information about the business that is being analyzed.



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Data Relationship Model



Data Relationship Model

A database model shows the logical structure of the database, including the relationships and constraints that determine how data is stored and accessed.



Primary and Foreign Keys

Primary keys

- A primary key is a column or set of columns in a table whose values uniquely identify a row or record in a table. A relational database is designed to enforce the uniqueness of primary keys by allowing only one row with a specific primary key value in a table.

Foreign keys

- A foreign key is a column or a set of columns in a table whose values correspond to the primary key values of another table. In order to add a row with a specific foreign key value, there must be a row in the related table with the same primary key value.

<https://www.ibm.com/docs/es/ida/9.1.2?topic=entities-primary-foreign-keys>

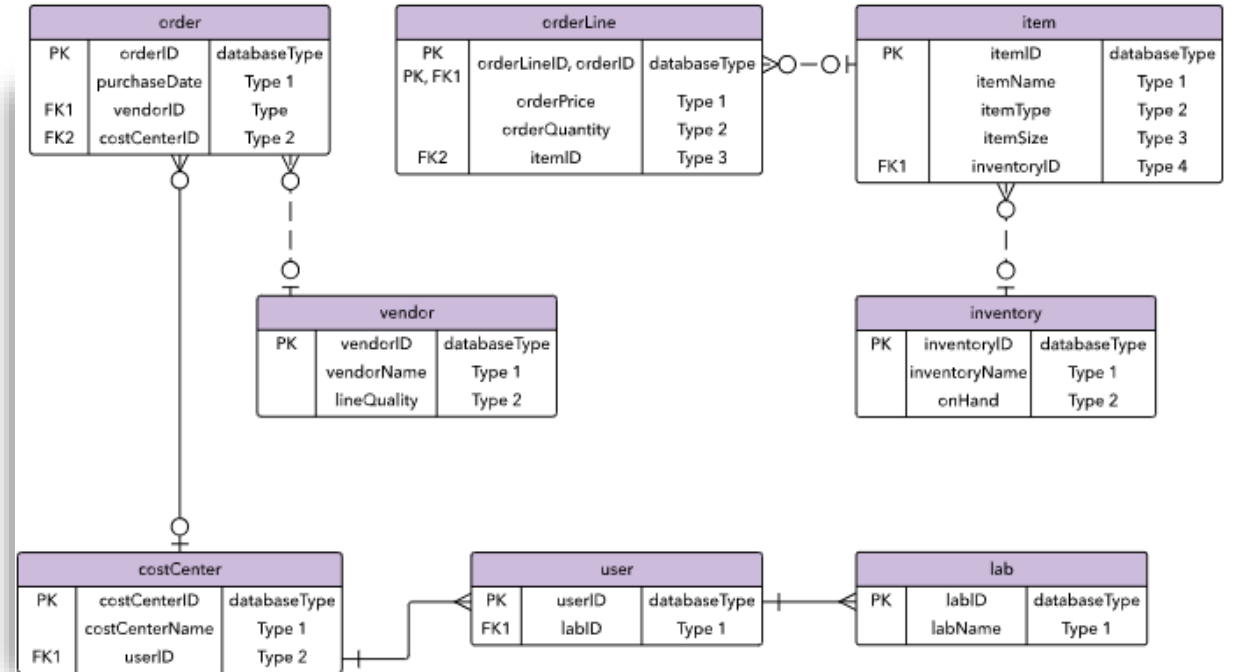


Entity – Relationship Model

A common form of the ER entity-relationship diagram is the star schema, in which a central table of information is connected to multiple dimensional tables.

► **The types of relationships between tables are.**

- 1 to 1 ratios
- From 1 to Several
- From several to 1
- From several to several



<https://www.lucidchart.com/pages/es/que-es-un-modelo-de-base-de-datos>



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Conclusion



In Conclusion

Running a business efficiently means making the best decisions.

The integration of Business Intelligence in today's organizations relies on the centralization of all your data in an efficient and clear manner to achieve the best long-term performance.

However, the platform is only the foundation for advanced analytics. The people, processes and technologies that support the platform ultimately drive the impact of the system's ability to derive insights and achieve mission objectives.



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