

Building a Bi Team in Your Data-Driven Company: “Who Does What?”

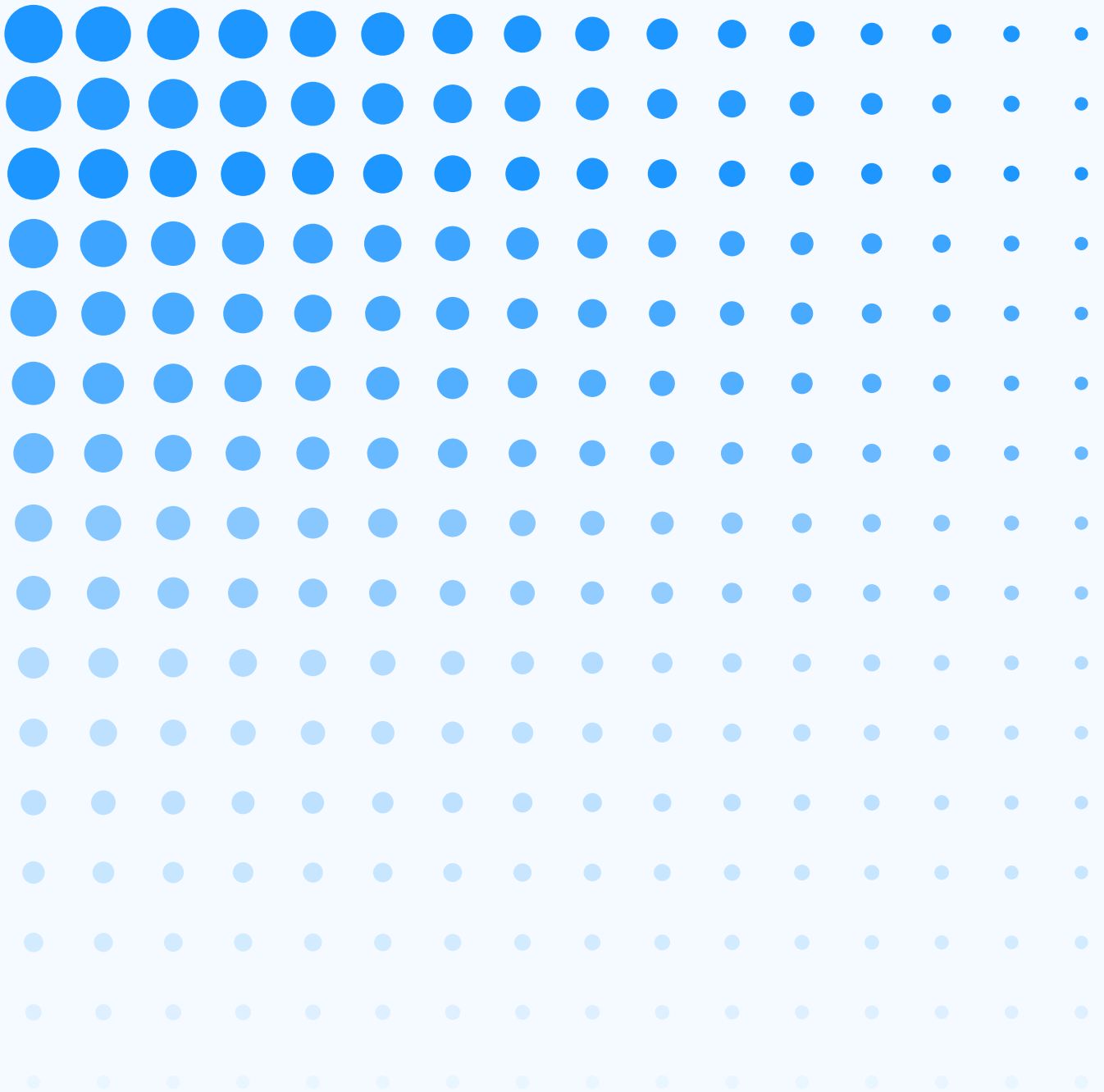
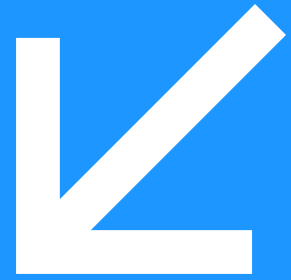


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01

INTRODUCTION

Ever wonder what the difference is between a BI Developer, Data Analyst, Business Analyst, DBA, Data Scientist, and Head of BI? Read on...

Companies are scrambling to redefine themselves as “data-driven”. And this makes sense, because who wouldn’t want to base their decision making on actionable insights excavated from the mines of big data?

Yet many companies lack the skills and processes cultivated from business intelligence professionals that are needed in order to be truly data-driven. That’s why they’re scrambling to create and staff effective BI departments.

As the volume, velocity, and variety of data have exponentially increased in recent years, so has the number of different business intelligence (BI) positions and responsibilities. Once upon a time, a small set of blanket position names covered the entirety of a the business intelligence spectrum. Today, the terminology for similar-sounding BI professions has become quite confusing.

Let’s try to clear things up.

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THE BUSINESS INTELLIGENCE DEVELOPER

The business intelligence developer works at coding level on backend BI solutions.

After consulting with internal stakeholders about their BI and analytical needs, these data specialists design, build, implement, and maintain new and existing BI tools, such as dashboards, data warehouses, reports, and ETL mappings (which is why they're sometimes called ETL programmers or developers).

Business intelligence developers engage extensively with both relational and multidimensional databases, acting as a data integrator. Ultimately, a BI developer is focused on creating solutions for enterprise-wide, self-servicing analytics. He or she lays the groundwork for the data-driven organization.

A BI developer needs to be well-versed in all things relating to data integration. He or she should be experienced with ETL processes,

SQL, reporting tools, data modeling, SSAS/SSIS/SSRS, OLAP, data warehousing, and more.

The business intelligence developers you hire should have at least a bachelor's degree in computer science, computer programming, or another quantitative field. In addition to technical skills, it is imperative that BI developers possess strong written and verbal communication abilities – since they will be working intimately with key business stakeholders.

According to Payscale, a typical salary for a BI developer in the United States ranges between \$53,000 to \$114,000 with the median being \$77,212. At the time of this article, there were 2,970 job postings for a business intelligence developer in the United States on LinkedIn.

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DATA ANALYST

A data analyst acquires, processes, and summarizes data.

By using specific queries and analytical tools, data analysts construct insights from data. They supply their organizations with reports, summaries, and visualizations - transforming data into digestible insights understandable by non-technical personnel. Their work helps management make data-driven decisions and set goals based on evidence.

A data analyst typically has skills in statistical analysis, reporting, data wrangling, machine learning, data manipulation, and data visualization. He or she should be proficient with Microsoft Excel and Microsoft Access in addition to having experience with reporting tools (such as Tableau, Looker, Perscope), SQL, a statistical language (like SPSS, R, or SAS), data mining, and predictive modelling. Most candidates also have some programming skills.

Data analysts typically have a degree in statistics, applied mathematics, or computer science. Alongside their technical skills, data analysts should be adept at presenting their findings to business stakeholders. According to Payscale, a typical salary for a data analyst in the United States ranges between \$39,000 to \$80,000 with the median being \$55,035. There are 77,568 job postings on LinkedIn for data analysts in the United States.

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BUSINESS ANALYST

A business analyst explores sets of data in order to make data-driven decisions within an organization.

He or she assesses the operations of an organization and its business model, then uses this information to form financial strategies involving technological integration. The business analyst's goal is standardize organization workflows by implementing and designing new systems that meet internal stakeholder requirements.

Business analysts are often referred to as 'system analysts,' since they translate business rules and needs into technical systems –bridging the gap between IT system developers and business users.

Business analysts are excellent problem solvers who utilize strong analytical skills to find solutions that enable an organization to reach its goals. They are adept at data manipulation and are experienced with databases, spreadsheets, and reporting

tools. Like a BI developer, a business analyst's communication skills must be robust, so they can convey technical reports in layman terms and translate business desires into technical realities. They also need to have exceptional organizational abilities.

Business analysts can have degrees in computer science, but many may hold a business, economics, or finance degree. According to Payscale, a typical salary for a business analyst in the United States ranges between \$42,000 to \$83,000 with the median salary being \$58,893. There were 47,296 business analyst jobs in the United States posted on LinkedIn when this article was written.

05

DATABASE ADMINISTRATOR

A database administrator, or DBA, is like a data handyman.

He or she ensures that the software used to manage a database is properly maintained, allowing rapid and easy access to data. The DBA orchestrates the capacity planning, design, installation, configuration, performance monitoring, migration, and troubleshooting of all things database-related. DBAs maintain database systems, create new database applications, support existing database applications, and manage an organization's data and metadata. These IT professionals also establish policies covering the usage of a company's database and preserve data security.

DBAs are knowledgeable about the theories, capabilities, and practices of database administration, security, storage, backup, and recovery. They have expertise with relational database management software

like MySQL, Microsoft SQL, or Oracle.

Additionally, database administrators have experience with data modeling tools like SAP PowerDesigner, performance monitoring tools, backup and disaster recovery tools, benchmarking tools like HammerDB, and advanced query tuning tools.

Database administrators typically have a bachelor's degree in computer science or an associate's degree in database administration. According to Payscale, DBAs in the United States make between \$44,000 and \$100,000 a year. The median salary is \$69,732. When this article was written, there were 7,564 job postings in the United States for database administrators on LinkedIn.

06

DATA ENGINEER

Data engineers are software engineers who build backend big data platforms.

These are the data professionals that design and build data pipelines that integrate data from various sources - assuring the data is extracted, transformed, and loaded into databases or data warehouses.

Data engineers manage the flow of big data. They are responsible for collating large data sets into databases, writing complex queries within said databases, and scaling storage systems. Data engineers make sure a company's big data can be easily accessed, processed, and analyzed by data analysts and data scientists. Rather than analyzing the data itself, data engineers integrate big data, allowing optimal analyzation by other BI professionals. In the era of big data, data engineers are the next evolution of business intelligence developers.

Data engineers are experts in Hadoop and its subsidiary tools like MapReduce, Pig, and Hive, SQL technologies like MySQL or Microsoft SQL, NoSQL-based technologies such as MongoDB or Cassandra, ETL processes, and data warehousing solutions. They should be proficient with computer programming.

Data engineers tend to hold masters degrees. Their median salary according to Payscale is \$87,425, with salaries ranging between \$62,000 to \$120,000. There are currently 52,256 data engineering jobs posted on LinkedIn for the United States.

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DATA SCIENTIST

The newest, hottest kid on the BI block, a data scientist is like a data analyst's older brother.

Possessing advanced data analytical skills, data scientists can handle a larger volume, velocity, and variety of data than a data analyst. More adept at computer programming than a typical data analyst, data scientists have the ability to invent new algorithms to solve complex analytical problems. They leverage their computer programming, statistics, analytical, and machine learning skills to pull out actionable insights from big data.

Data scientists interpret, extrapolate, and deliver deep insights using reports, visualizations, and narratives. Whereas a data analyst typically looks at data to summarize the past, a data scientist analyzes data to strategize for the future. He or she supplies the end product – the curated information – that enables organizations to make data-driven decisions. And this

is why the demand for data scientists has skyrocketed, their supply is limited, and they come at a hefty price tag.

Data scientists have a strong knowledge of computer programming languages (like Python, Scala, and Matlab), statistics and statistical tools (like R), machine learning, Apache Hadoop, Apache Spark, data mining tools, data visualization tools, and big data infrastructures.

Most data scientists hold advanced degrees in quantitative fields like computer science, statistics, physics, or applied mathematics. According to Payscale, the pay range for a data scientist in the United States is \$62,953 to \$126,182 with the median average salary being \$93,147. There are 32,529 job postings in the United States for data scientists on LinkedIn.

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HEAD OF BUSINESS INTELLIGENCE, BI DIRECTOR, VP OF ANALYTICS

Whatever you decide to call it, the business intelligence director is responsible for making a firm truly data-driven. The heads of BI establish and execute strategies that generate insights, creating self-service analytic platforms and other business intelligence solutions. They also lead the BI unit, ensuring that it is delivering optimal insights and fulfilling the needs of key organizational stakeholders - including internal staff, clients, and partners.

Business intelligence leaders are equipped with both business and technological skills. They are up-to-speed on the latest BI technologies and trends, which enables them to establish data governance and define policies and procedures regarding data storage, processing, and analytics. They are knowledgeable about all the tools used by the positions listed above, and are typically proficient in several programming languages, advanced databases, data warehouses, data modeling, and data analytics.

BI directors, acting as VPs of Analytics, usually report to C-level executives, so they must have outstanding communication and interpersonal skills in order to translate the language of business to the language of IT. They have strategic and organizational ability, constructing and delivering multi-level plans for a firm's business intelligence. BI directors have an eye for details, both small and large, allowing them to be analytical leaders.

Heads of BI typically hold a degree in computer science, business analysis, or finance. According to Payscale, the typical pay scale for a business intelligence director is \$96,000 to \$158,000 with the median salary being \$127,526. There are 4,332 job postings for a business intelligence director on LinkedIn.

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CONCLUSION

Putting together a winning BI team is no small challenge.

Yet it is a challenge that is rapidly becoming mission-critical for companies looking to harness the power of their big data resources. By clearly defining BI roles and expectations prior to hiring, organizations ensure that their transition to data-driven is smoother and ultimately more beneficial.

Interested in how to hire the right Head of Business Intelligence? [Read more here.](#)

To learn how you can integrated all your data in less than 30 minutes [click here.](#)

BI PROFESSIONS IN THE AGE OF "DATA-DRIVEN COMPANIES"

Title	Responsibilities	Typical skillset	Pay range	Experience
BI DEVELOPER 	The coder: Creates BI solutions for in-house, self-service analytics and serves as a data integrator.	ETL, SQL, OLAP, Data Warehousing, Data Modeling	\$53,000 \$114,000	0-4 years: 44% 5-9 years: 33% 10-20+ years: 23%
DATA ANALYST 	The data summarizer: Creates BI solutions for in-house, self-service analytics and serves as a data integrator.	Programming, Statistics, Data Mining, Data Manipulation, Machine Learning	\$39,000 \$80,000	0-4 years: 68% 5-9 years: 19% 10-20+ years: 14%
BUSINESS ANALYST 	The Systems Analyst: Establishes technological bridge between IT and internal stakeholders	Analytics, Databases, Data Manipulation, Reporting Tools, Business Knowledge	\$42,000 \$83,000	0-4 years: 62% 5-9 years: 23% 10-19 years: 16%
DATABASE ADMINISTRATOR 	The Database Handyman: Ensures the software used to manage a database is properly maintained	RDBMS, Data Modeling, Performance Monitoring, Benchmarking, Backup and Disaster Recovery	\$42,000 \$83,000	0-4 years: 62% 5-9 years: 23% 10-19 years: 16%
DATA ENGINEER 	The Data Plumber: Manages the flow of big data from sources to systems	Hadoop, SQL, NoSQL, ETL, Data Warehousing	\$62,000 \$120,000	0-4 years: 67% 5-9 years: 20% 10-20+ years: 13%
DATA SCIENTIST 	The Data Wizard: Transfigures big data from numerous sources into actionable insights	Programming, Statistics, Hadoop, Machine Learning, Data Mining, Big Data Infrastructures	\$63,000 \$126,000	0-4 years: 76% 5-9 years: 16% 10-20+ years: 8%
BI DIRECTOR 	The Captain of the BI Ship/Team: Leads strategies for BI and analytics goals	BI Technologies and Trends, Organizational Leadership, Strategies, Management Skills	\$96,000 \$158,000	0-4 years: 6% 5-9 years: 17% 10-20+ years: 76%