

Business Analytics Executive Overview

**Module 3 - Organizing and Staffing
for Analytics**

Doug Laney



Lesson 3.0

Overview



Roles Covered



Chief Information Officer

Chief Data Officer

Chief Analytics Officer

Chief Digital Officer

Roles Covered

Data Scientist

Analytics Center of Excellence

Other Analytics Related Roles

Analytics Outsourcing, Crowdsourcing,
and Consultancies

A photograph showing three students in a hallway. In the foreground, two girls are sitting on a bench, looking at a yellow spiral-bound notebook and smiling. One girl has dark hair and is wearing a blue zip-up hoodie. The other girl has glasses and a ponytail, wearing a black top. In the background, a boy in an orange shirt is sitting on a chair, looking at a laptop. The hallway has white walls and doors.

Lesson 3.1

The Chief Information Officer (CIO)

Position Summary

Ensure the IT strategy aligns with the business strategy.

Participate in and contributes to overall enterprise business strategy development.

Leverage IT in all aspects of business model design and development.

CIO Primary Responsibilities



Set the mission and vision of the IT organization.

Create technology-related synergies across the enterprise.

Collaborate with executive leadership, incorporating data and analytics to aid in enterprise strategies.

CIO Primary Responsibilities



Be knowledgeable on new technologies and platforms.

Design enterprise architecture management.

Manage and control capital expenditure budgets for IT.

CIO Primary Responsibilities



Direct development of IT sourcing strategy and executive oversight for strategic vendor and partner relationships.

Develop an IT "people strategy".

Develop and maintain an IT workforce that is diverse in business, technical, and competency skills.



Lesson 3.2

The Chief Data Officer (CDO)



CDO Duties



Shepherding the information strategy.

Leading the data and analytics program.

Fostering a data-driven culture.

Building the intelligence essential for the digital enterprise.

CDO Duties



Play a critical role in digital business transformation.

Champion data and analytics value creation and governance.

CDO Duties

CDOs must foster value creation from the use of the organization's data assets as well as the external data ecosystem.

CDO Primary Responsibilities



Exploit the value of enterprise information assets.

Define information strategy practices.

Drive the development and deployment of the enterprise's data and analytics platform.

CDO Primary Responsibilities



Work with other C-level executives to establish vision, govern, and create a culture that manages data as an enterprise asset.

CDO Primary Responsibilities



Standardize the governance of data
and algorithms used for analysis.

Institute a programmatic approach for
enterprise information management.

CDO Business Accountabilities



Be the corporate leader of data-driven insights.

Exploit data using research and analytics to maximize the return on data assets.

Innovate with and expand the organization's research and analytics offerings.

CDO Business Accountabilities



Identify new kinds, types, and sources of data to drive business innovation.

Research and develop new data products or services to expand markets, monetize data (directly and indirectly), and grow company revenue.

CDO Management and Operational Accountabilities

Be a marketing champion for the information services provided by the enterprise and related data and analytics management capabilities.

CDO Regulatory and Governance Accountabilities

Lead regulatory and compliance programs related to data and analytics assets.

CDO Regulatory and Governance Accountabilities

Organize and lead a data and analytics governance council to provide executive sponsorship and oversight for governance policy creation and compliance.

CDO Regulatory and Governance Accountabilities

Ensure the performance of independent audits, as appropriate.

CDO Management and Operational Accountabilities

Organize and lead a data and analytics center of excellence.

Develop the enterprise's capacity to develop insights with advanced analytics.

CDO Management and Operational Accountabilities

Lead the development, publication, and maintenance of the corporate information architecture.

Measure master data and reference data for compliance to policy, standards, and conceptual models.



Lesson 3.3

Chief Digital Officer



Digital Officer Position Summary



Top executive responsible for ensuring that the enterprise's business strategy is optimal, given current and emerging digital realities, opportunities, and threats.

Digital Officer Primary Responsibilities

Work with C-level executives to identify the opportunities for differentiating digital capabilities and solutions.

Digital Officer Primary Responsibilities

Lead the process to identify and evaluate internal digital asset capabilities and strengths.

Digital Officer Primary Responsibilities

Lead the development of the digital business strategy and roadmap.

Ensure that the enterprise is developing digital assets that will be needed the midterm and long term.

Digital Officer Primary Responsibilities

Lead organizational changes required to create and sustain enterprise digital capabilities.

Define and reports on digital business KPIs.

Act as a thought leader on emerging digital business models.

Digital Officer Primary Responsibilities

Build and maintains external relationships in academia.

Manage a small team of analysts, researchers, technologists.

Digital Officer Primary Responsibilities

Partner with the CIO and IT organization to develop and exploit new digital business solutions.

Partner with the HR function to build digital talent in the enterprise.

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Lesson 3.4

The Chief Analytics Officer (CAO)

CAO Position Summary

Define and set the enterprise strategy and plan to use analytics to advance its business mission and goals.

Direct analytics processes.

Know the flow of information, understand its context, and be aware of how it links across the enterprise.

CAO Main Responsibilities

Develop, define, and drive the enterprise's strategy with regard to the exploitation of analytics for monetary or social gain.

Set policy and standards regarding the use of analytics in the organization.

CAO Main Responsibilities

Plan, fund, and execute on new and innovative analytics-based initiatives.

Create mechanisms to use data as a strategic asset.

Organize and coordinate the organization's disparate data streams in preparation for analytics.

CAO Main Responsibilities



Innovate and expand the organization's research and analytics offerings.

Develop analytic metrics that establish a consistent and coherent approach to data throughout the organization.

CAO Main Responsibilities

Make data accessible to people who might need it.

Provide training and mentoring that promotes analytic tool usage and skillsets.

Provide analytics results directly to business users.

CAO Main Responsibilities



Create a culture that promotes data-driven decisions.

Locate the new and/or best sources for data.

Measure the ROI of analytics initiatives .

CAO Main Responsibilities



Lead analytics governance (which should mirror and support an information governance program).

CAO Other Responsibilities

Represent the enterprise to regulators, customers, suppliers and external bodies.

Be a champion for analytical services that the enterprise provides.

Ensure that appropriate controls exist for analytics.

CAO Other Responsibilities



Ensure that analyses used for financial reporting are valid, reliable, traceable, timely, available, secure and consistent.

Ensure that business reports based on analytics of controlled data are consistent.

CAO Other Responsibilities



Recruit and develop a data science organization for corporate exploitation of big data and the liberation of dark data.

CAO Other Responsibilities



Centralize services for sourcing external data.

Be aware of future skills and technologies.

CAO Other Responsibilities



Research and develop new data analytics products.

Create and expand analytics based on open data offerings to empower citizens and to enable better government and commercial services.



Lesson 3.5

The Data Scientist



What is a Data Scientist?



An individual responsible for modeling complex business problems, discovering business insights and identifying opportunities through the use of statistical, algorithmic, mining and visualization techniques.

Conditions Leading to the Emergence of Data Science

Big data scenarios necessitate new approaches and algorithms.

The deficit of advanced analytic talent is a bigger issue than available technology.

Conditions Leading to the Emergence of Data Science

Data science is a key enabler of fact-based, decision-oriented business processes.

Searching for Scientists of the Data Kind

Online Google hits for the term have tripled year-over-year.

Three times more “data science” LinkedIn titles than “statistician” and “BI analyst”.

The Data Scientist Role



Expected to work more in a team environment than statisticians are.

Required to work with big data more frequently than those in other analytics roles are.

The Data Scientist Role

Skill requirements emphasize machine learning, computing, and algorithms.

Strong communication skills.

Doctorate degrees are required nearly twice as often than statisticians are.

The Data Scientist Skills

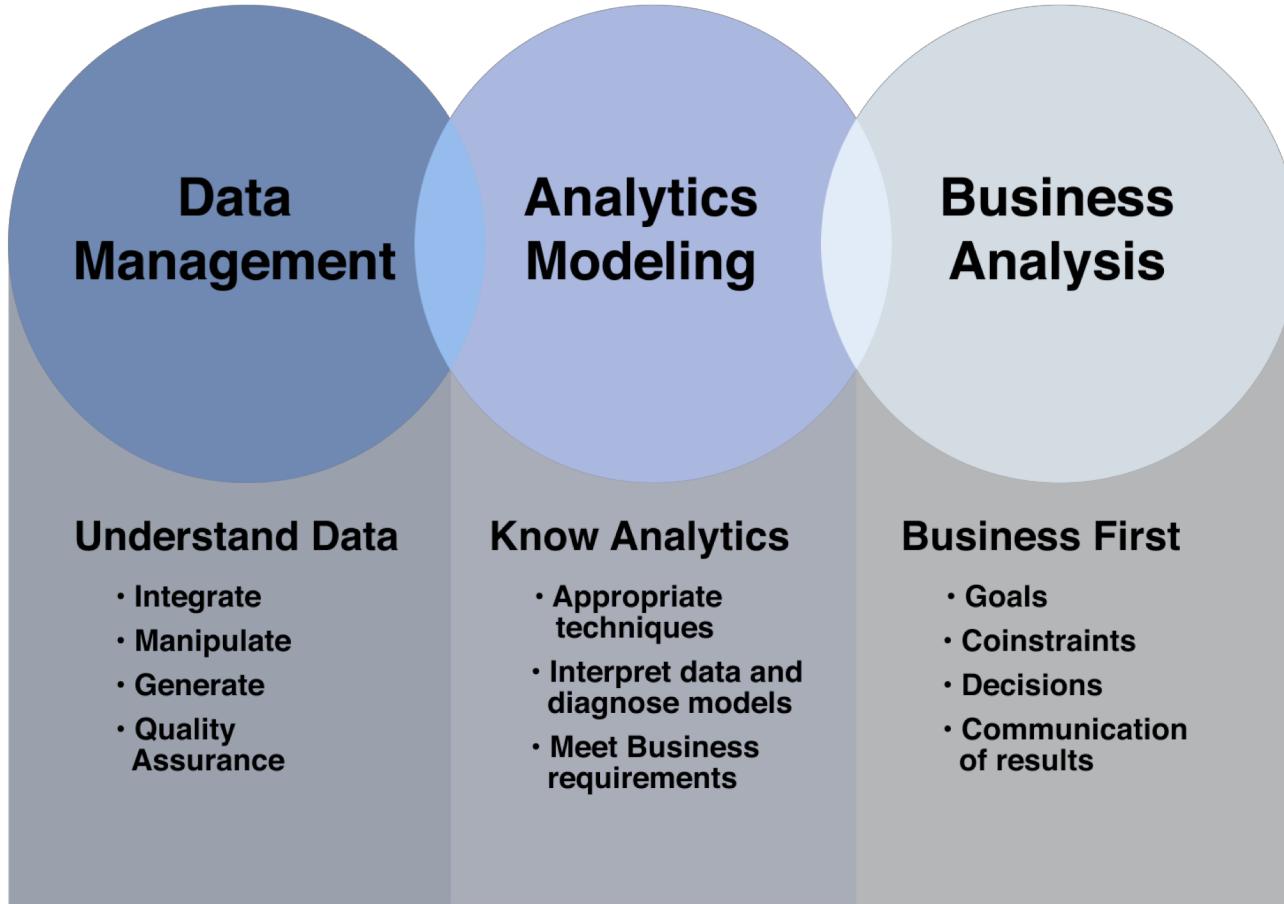


SQL, R, C, statistical analysis system
(SAS), Python, Java, Hadoop and Pig.

The Data Scientist Skills



The Data Scientist Skills





Lesson 3.6

Data Scientist Soft Skills



Communication



Key components of these communication skills are those of persuasion and expectation management.

Collaboration



Data scientists must enable broad consumerization of derivative result sets and analytics.

Leadership



Directing the efforts of teams of statisticians, data administration and integration professionals, and data visualization, reporting, and application integration developers.

Creativity



Finding opportunities to optimize, expand, or transform the business through the lens of information.

Creatively sourcing data and applying a range of analytic techniques.

Discipline



Follow established scientific methods,
employing legitimate techniques, using
valid data, and embracing causality.

Passion

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Have an obsession with information and problem solving.

Lesson 3.7

Other Analytics Related Roles



Key Factors in Emerging Analytics Roles

- Increased strategic importance of data and analytics.
- Increased business-domain-led analytics.
- New Data Management responsibilities.
- Faster business pace.
- New user profiles demanding more autonomy.
- New citizen roles.
- Smarter, more adaptive governance.
- Core architect roles becoming more embedded.

The New Hybrid and Distributed Organization

Data and analytics leaders must optimize their domain-specific analytics competencies for success in the digital business, and to sufficiently support multiple use case.

Data and Analytics Leaders' Action Items

- Plan to establish or build out an office of the CDO .
- Study the trade-offs of different organizational models .
- Create a two-tiered organizational model.
- Create a list of the decentralized functions.
- Govern, steward, integrate, analyze and report data.
- Govern, steward, model, develop and innovate with analytics and decision models.
- Strike a balance of power between centralized (collaborative) and decentralized (aligned) teams.

Key Data and Analytics Roles

- Analyst(s)
- Business process analyst
- Data engineer
- Information architect
- Data ethicist

A Spectrum of Analysts



- Analytics consumers
- Business analysts
- Citizen data scientists
- Statisticians
- Data Scientists

The Business Process Analyst (BPA)

- Identify the most critical data needed by each application.
- Identify which business processes warrant centralized/global governance.
- Determine the information governance policies.
- Process redesign, optimization, and change management.

The Data Engineer

- Collaborate with business users and data scientists.
- Become data gurus who know how and where to start with data.
- Educate the organization on data engineering.
- Help data scientists to prepare data.

The Data Engineer



- Take responsibility for streamlining data pipelines.
- Assist with initial data exploration steps.
- Assist with programming.

The Data Engineer



- Catalog existing data sources and enable access to resident and external data sources.
- Support data stewards to establish and enforce guidelines for data collection.

The Information or Data Architect

- Partnering with business leadership to provide strategic recommendations.
- Assessing the benefits and risks of information.
- Conducting information modeling.
- Enabling enterprise information management.
- Moving beyond the scope of individual projects toward common semantics.

The Data/Digital Ethicist

- Determine the risks and opportunities associated with the use of data.
- Ensure the new uses of data align with the organization's values.
- Monitor for unforeseen consequences.
- Make all stakeholders ethically aware.

Emerging Analytics Roles for Digital Business

- Continuous intelligence roles.
- Algorithmic business domain experts.
- Algorithmic business trailblazers.



Lesson 3.8

The Analytics Center of Excellence



Key Analytics Challenges

- Defining, establishing, and communicating the range of analytics capabilities.
- Getting out of the report writing business.
- Tactical business intelligence competency centers (BICCs) are too limited in scope.
- Employing analytics enterprise wide.

Key Analytics Recommendations

- Become more consultative in fostering analytics throughout the organization.
- Evolve competency centers (BICCs) into analytics centers of excellence (ACEs).
- Establish an ACE that provides for self-service enablement, enterprise analytics, advanced analytics, prototyping, collaboration, knowledge transfer, and algorithm availability.

General Center of Excellence Benefits



- Increased speed.
- Economies of scale and experience.
- Capability consistency across the organization.

Analytics Center of Excellence (ACE) Capabilities

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- **Organization capabilities** — Defining and enabling required roles and responsibilities and influencing culture.
- **Project capabilities** — Performing management and administrative activities and gauging project performance.
- **Data capabilities** — Identifying information sources and delivering some central analytics.
- **Education capabilities** — Fostering innovation and self-service enablement along with related knowledge management activities.
- **Technology capabilities** — Establishing tool and architecture standards.

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Lesson 3.9

Analytics Consulting and Crowdsourcing

Critical Capabilities

- Business Process Consulting
- Business Change Management
- Design-Led Approach
- Managed D&A/D&A as a Service
- Asset+ Consulting
- Technology Enablement

Business Process Consulting



- Investments in assets
- How business knowledge is captured and maintained
- How business capabilities are contracted with clients
- Ability to bring new ideas, suggestions, or innovation
- Number of industry and business process experts
- Partnerships and alliances in targeted industries

Business Change Management



- Their investments in business organizational change management methodologies.
- Solutions.
- Multi-sourcing service integration.
- Ability to understand operational processes, metrics, and organizational dynamics, manage the project that meets business objectives, as well as enforce program governance.
- Facilitate different stakeholders to agree on the business objectives and standard processes.

Design-Led Approach

The provider's ability to design and implement data and analytics solutions that can effectively drive data and analytics consumption throughout the client's organization.

Managed D&A/D&A as a Service



The provider's ability to embed intelligent automation in platform-based D&A solutions in a public or managed cloud environment.

The provider's effectiveness in using IP assets to augment existing insight and expertise for particular vertical industries or to provide analytics insight to address complex problems.

Technology Enablement



The provider's ability to educate, ideate, evaluate, and implement new and existing D&A solutions and technologies (including AI) in the most optimal manner

Use Cases



- Strategy and Consulting
- Analytics and BI Implementation
- Data Management Implementation
- Data Science and Machine Learning Implementation