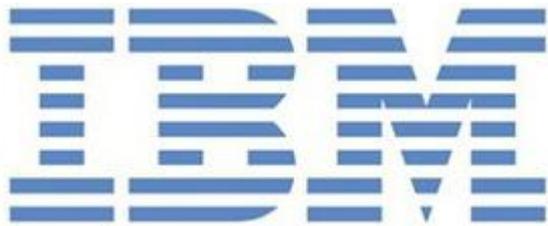




AFRICA CENTRE FOR WORK BASED LEARNING

MANAGING DATA AS AN ASSET CERTIFICATE



® IBM Talent & Ecosystem Affiliate



**After successful completion of this program, candidates
will also receive ICCP Certification!!!**



The world is experiencing profound business, technical, and social / political / economic / environmental changes; perhaps more momentous than at any other time. Many of the most significant changes are associated with business analytics and big data, especially when combined with other emerging information technologies like **cloud, social networking, mobile, cognitive computing,** and the internet. The integration of these technologies is the impetus for enterprise changes enabled and driven by IT beyond the traditional cost savings brought by business process and productivity improvement; it is the growing trend around the globe of leveraging IT for revenue generating initiatives that has made this so noteworthy. It is the overall return on information that is generating revenue! These initiatives are driving the most significant transformational changes for the next decade and beyond.

IBM CEO Virginia Rometty said that information will be to the 21st century what steam, electricity, and fossil fuel were to prior centuries. How we harness this potential and take advantage of these emerging, and disruptive, technologies may become the central question for management over the next several years.

McKinseys' research suggests that the use of big data is becoming a key way for leading companies to outperform their competitors. As an example they present a retail industry case that embraced big data to increase its operating margin by more than 60 percent.

Similarly, a Sloan Management Report found that "...organizations that strongly agreed that the use of business information and analytics differentiates them within their industry were twice as likely to be top performers..."

Our **annual IT management trends research** over the last 15 years has placed big data/business analytics as the number one emerging technology investment around the globe. This, in concert with the trends research also indicating a global increase in the use of IT for revenue generating initiatives, is demanding organizations to address how to leverage this important set of technologies. Having **IT and non-IT executives working in harmony** to reconcile questions like the following have become essential:

- What is our data and analytics strategy?
- Are we organized to harness the value of our data?
- How and what data should we capture?
- Where should we store the growing availability of data?
- What analysis is possible and worthwhile?

- Do we have the right IT, business, and industry skills?
- Who should be responsible?
- What are the long term business implications for cognitive computing and robotics process automation?
- What ethical questions and considerations might arise and how to deal with them?
- How could/should our business model change based on the above?

Recognizing that these initiatives demand more than just technical skills is imperative. Bad data leads to bad decisions. This has been most recently demonstrated in the dramatically missed projections for the 2016 U.S. Presidential election. Other examples include sports teams that have used “faulty data” in selecting new players or in deciding what plays to call or in the placement of players for a play. What erroneous decisions has your organization made; you might not even be aware until it is too late???

Successful use of these complex tools requires expertise in more than just technologies and data; they require the convergence of technology, data, statistics, business, industry, tools/products, and the ability to work in a team (IT and non-IT). The purpose of this certificate is to prepare candidates with the leadership/management skills necessary to meet the challenges and deliver valuable results.

To be successful in leveraging data and business analytics, organizations need to understand how to move from big data to smart data, and more importantly, how to obtain demonstrable value from these important initiatives. To be successful demands more than having the technical skills provided by our **Deploying Business Analytics Certificate**. An appropriate balance of the business, management, leadership, technical, industry, and interpersonal skills, provided in this Managing Data as an Asset Certificate, are essential. This Certificate will address the integration of the information technologies that are required to have a successful big data/business analytics/knowledge management strategy across the enterprise including **robotics process automation** (Cognitive Computing), IoT (**internet of things**), Bring-Your-Own-Infrastructure, and SMAC (**Social, Mobile, Business Analytics**, and **Cloud**).

The impact of big data analytics touches every area of the enterprise – marketing, sales, research, finance, human resources, supply chain, customer relations, legal, etc. To be successful there is a strong requirement for an organizational leader/manager to provide a new form of information service to the entire enterprise. As a result, there is currently a debate regarding the role of, or need for, a Chief Data Officer (a CDO) or Chief Analytics Officer (CAO) – perhaps as another member of the C-suite. Or, perhaps such a role is better placed under the CIO, or elsewhere in the organization? There is no one best place in which the responsibilities for the data questions raised above should reside for every organization, however, management needs guidance regarding what to take into

account in determining the best alternative for their individual situation (e.g., strategy, culture, politics, IT-business relationship).

When considering the governance of data and business analytics, organizations need to define where the responsibility and expertise resides for:

- ultimate strategic authority on informational assets
- tactical and operational management of these assets
- investment and sourcing decisions for deploying data initiatives
- achieving organizational data success/value from these initiatives
- ensuring data security/privacy compliance
- creating innovative data-driven products and services

The key is for executives to consider data as an asset – to determine how best to manage it, to exploit its potential, as we would with any other asset. How should it be acquired, stored, maintained and put to work. Recognizing the importance of **IT and non-IT organizations working collaboratively** is essential.

Identifying the options that managers (in particular CEOs and CIOs) have available to address these important questions is fundamental? **Business Schools** around the country, indeed around the world, are manufacturing Masters Degrees in analytics as fast as possible. Senior managers will attend seminars and read reports such as those mentioned above to keep up with these important trends. Students undertaking MBAs will no doubt find a minor in this area. However, for the vast majority of IT and non-IT managers, something else is needed. In essence flexible programs addressing the technical, business, management, industry, and organizational considerations are key.

To this end the Global Institute for IT Management (GIIM) has developed two 4-course certificate programs to address these important considerations. One (**Deploying Analytics**) is similar to many university IT analytics programs that are being offered; albeit with a stronger focus on industry and practical considerations. This (the second) Managing Data as an Asset Certificate focuses on the leadership, management, and industry skills necessary to leverage this important new technology; how to derive value from data.

No doubt the Global Institute for IT Management will be just one of many bodies offering education in data and business analytics. However GIIM brings to the table a selection of **exemplary IS academics (from multiple leading universities, where Masters Degrees are also available) and practitioners** from around the world with a wealth of experience in executive education, information technology, design and business analytics, as well as a strong industry focus geared for IT and non-IT executives. In addition, GIIM provides a **certificate addressing the technical data/analytics responsibilities** and a second (the one described here) addressing the management data/analytics responsibilities.

Recognizing that some candidates will have a technical background while others a more business background, candidates should also consider courses from the **Deploying Business Analytics Certificate, IT in Industry Certificates, IT**

Security Management Certificate, and **IT in Marketing Certificate**. Candidates should have completed the course **Data Management & Warehouse Considerations** (The second course in the **Deploying Big Data/Business Intelligence/Knowledge Management Certificate**) and The **Essentials of Data Management** course or have the equivalent experience prior to taking this certificate.

1. Leveraging IT Resources: Information & Resource Management

This course takes a comprehensive information and resource perspective of business strategy by addressing the strategic, tactical, and operational roles and responsibilities across the business for managing data as a strategic business asset.

While the alignment of business and IT is the primary focus, emphasis is placed on the current/emerging issues/opportunities in creating and coordinating the significant initiatives necessary to ensure IT's contribution to the success of the organization; in essence as IT is shaping global markets and impacting the enterprise, how must IT reshape itself. This is done by examining important considerations such as governance, demonstrating value, IT processes, IT organizational structure, HR & sourcing, managing emerging technologies, the integrated roles of the CIO-CTO-CDO-CAO, and IT-business strategy. By concentrating on IT's strategic responsibilities, this course puts the candidate in the role of an IT leader as they build a business strategy that is enabled/driven by IT. It is the first course in the Certificate as it lays the groundwork for understanding how IT must evolve to remain relevant in a world where profound changes in business, economics, environment, and technology have become the norm.

2. Building the Data/Analytics Organization

This course addresses the organizational elements of the Data and Business Analytics (including cognitive computing and robotics process automation) functions by focusing on the management, structural/reporting, and human resource/skills considerations of data and business analytics. Topics such as determining where the group(s) should report, how they are assessed/measured, the necessary skills and how to source them, key data/analytics/cognitive computing processes, data governance, how to lead data-driven innovation in products and services, IT and non-IT roles, and customer and competitor alignment, all driven by the demand to improve the quality and speed of business decisions, minimize the risks/challenges for implementing them, and how to leverage data as a strategic asset. By concentrating on IT's data, analytics, and cognitive computing responsibilities, in essence this course puts the candidate in the role of the CAO/CDO (Chief Analytics Officer/Chief Data Officer) as they define the vision, strategies, missions, and build the management processes and organization/skills necessary to deploy these data driven initiatives. The course focuses on the important organizational structure in terms of separate or combined organizations, and placement within the overall enterprise and IT organizational structures. This course is geared for managers and consultants engaged in

building and growing this organization, including CIOs and non-IT executives to help prepare the enterprise to leverage their investment in Big Data/BA. It combines the optional Building & Managing the Analytics Organization and Building & Managing the Data Organization courses (A & B) below.

3. Managing Emerging Data & Analytics Technologies

This course focuses on the current and emerging data and business analytics tools, approaches, and related technologies (e.g., cloud, legacy services, data security/privacy, social media/networks, internet of things, mobile applications, cognitive computing, crowd-sourcing, standards), and how they can be integrated and leveraged. This is the most technical of the certificate courses, but it is still focused on data and business analytics management considerations.

It is designed to help candidates understand the difference between traditional systems of record built on ACID databases and emerging NoSQL databases, web-scale cloud data layers, master data management, data curation/taming at scale, data modeling, real time data warehousing, data warehouse modernization, fraud & anomaly detection, internet of things implications, crowd-sourcing data (LinkedIn, Yelp, etc.), and when & how to incorporate 3rd party data (e.g., Google maps, public open data, acquired data). Candidates will also learn how to help their organization assess, select, and adopt trends in emerging data business analytics products, tools, and techniques. Other considerations include how to cleanse, curate, and shape data coming from more sources than ever before and how to build data architectures / infrastructures and services that integrate and leverage these new data sources. By concentrating on current and emerging data and analytics technologies, in essence this course puts the candidate in the role of the CAO/CDO (Chief Analytics Officer/Chief Data Officer) as they ensure their organization is prepared to effectively and efficiently enable/drive these data driven initiatives.

4. Aligning Data & Analytics With the Business Areas

While data is growing exponentially, every organization is discussing strategies that consider data as a strategic business asset. This courses focus on how to get the entire business effectively engaged to take full advantage of data, business analytics, and cognitive computing initiatives. Business leaders, suppliers, and customers have greater expectations than ever before as they demand that data and analytics are always available from anywhere, while maintaining high levels of security and privacy in compliance with all applicable regulations.

Empowering every employee across the business with data & analytics as a service is often a complex challenge, particularly in the face of rapidly evolving landscape as ALL data must be considered whether from social media, web traffic logs, machine data from sensors, data from 3rd parties, in addition to the traditional data collected from systems of record applications. Understanding data policy and all of the issues of governance, ethics, security, and privacy is fundamental.

By concentrating on the current and emerging approaches for aligning IT and business data/analytics initiatives, in essence this course puts the candidate in the role of the CAO/CDO (Chief Analytics Officer/Chief Data Officer) as they ensure all areas of the business are prepared to effectively and efficiently leverage data as a strategic asset.

Additional/Optional Courses

(available synchronously only)

A. Building & Managing the Analytics Organization

In essence it takes a similar perspective as course B below, but instead of focusing on the role of the CDO (Chief Data Officer), it focuses on the role of the CAO (Chief Analytics Officer).

This course addresses what the Analytics and Cognitive Computing functions should look like by focusing on the management, organizational, and human resource considerations for leveraging analytics. It addresses the emerging job roles of data governance, data stewards, data curators, data scientist, master data architects, data security & privacy, data engineers & architects, and data scientists, as well as centers of excellence/competency. Managing data as an asset requires significant transformation at many companies. There are cultural issues that must be dealt with, and learning how to manage transformation is a critical skill. Topics such as where the group should report, how they are assessed, the necessary skills and how to source them, key data/analytics processes, integration strategies, data governance, data-driven innovation in products and services, data security/privacy and standards, IT and non-IT roles, customer and competitor drivers, and understanding how the preceding can be used to improve the quality and speed of business decisions and processes, and the risks/challenges for implementing them to leverage data as a strategic asset are fundamental. By concentrating on ITs data and analytics responsibilities, in essence this course puts the candidate in the role of the CAO (Chief Analytics Officer) as they build the management processes and organization/skills necessary to deploy these data driven strategies.

B. Building & Managing the Data Organization

In essence it takes a similar perspective as course A above, but instead of focusing on the role of the CAO, it focuses on the role of the CDO (Chief Data Officer).

This course addresses the organizational elements of the Data and Business Analytics functions by focusing on the management, structural/reporting, and human resource/skills considerations of data and business analytics. Topics such as determining where the group(s) should report, how they are assessed/measured, the necessary skills and how to source them, key data/analytics processes, data governance, how to lead data-driven innovation in products and services, IT and non-IT roles, and customer and competitor alignment, all driven by the demand to improve the quality and speed of business decisions, minimize the risks/challenges for implementing them, and how to leverage data as a strategic asset. By concentrating on IT's data and analytics responsibilities, in essence this course puts the candidate in the role of the CAO/CDO (Chief Analytics Officer/Chief Data Officer) as they define the vision, strategies, missions, and build the management processes and organization/skills necessary to deploy these data driven initiatives. The course focuses on the important organizational structure in terms of separate or combined organizations, and placement within the overall enterprise and IT organizational structures. This course is geared for managers and consultants engaged in building and growing this organization, including CIOs and non-IT executives to help prepare the enterprise to leverage their investment in Big Data/BA.

C. Building the Requisite Organization Structure for Data & Analytics

This course introduces specific methods of organization structure analysis and design, and integrates previous learning in IT strategy, IT organization maturity, the CAO/CDO [Chief Analytics Officer/Chief Data Officer] role, governance, and HR considerations. The course emphasizes methods and considerations for organizing a new IT analytics unit and/or for strengthening an existing analytics unit.

Managing data as an asset requires significant transformation at many companies. Issues such as where the IT organization should report, how the CAO/CDO role should be positioned and their relationship to the CIO and non-IT organizations, what roles and levels of capability are required to deliver and leverage high-value analytics capabilities, and how to put in place effective IT governance processes for data analytics initiatives have become critical concerns. In addition to these issues, IT executives also must examine their existing IT organization structure and staffing; then plan and put in place organization changes to bring the IT organization into alignment with corporate business strategy.

IT strategy – typically framed in terms of broad goals and objectives – is the starting point for organization design. Once decided, strategic vision must be operationalized into operating units, specific roles, role relationships, accountabilities, authorities, etc. The Strategic Alignment Model and the IT Maturity Model introduced in the previous course - Leveraging IT Resources – are

used in this course as a framework for discussing topics such as markers of effective organization structure, identifying and diagnosing causes of IT organization structure problems, templates for optimum IT organization structure , and managing organization change.

By concentrating on the challenges of designing and implementing an effective IT organization design, this course puts the candidate in the role of CAO/CDO[Chief Analytics Officer/Chief Data Officer] as they build a new analytics capability and/or improve their existing capabilities.

There is an optional 2-day course that provides participants with a hands-on experience for applying these organizational concepts to their organization using an effective modelling tool.