Big Data and Analytics for Supply Chain Decisions Training Course

Ref: #PSC5568

Course Introduction / Overview:

In today's volatile global market, the ability to harness data is the definitive competitive advantage in supply chain management. This course provides a comprehensive exploration of how big data and advanced analytics are revolutionizing logistics, procurement, and operations. We move beyond theoretical concepts to provide actionable strategies for data-driven decision-making. As highlighted by the renowned academic Thomas H. Davenport in his influential book "Competing on Analytics: The New Science of Winning," organizations that build their capabilities around data analytics outperform their peers. This program is designed to equip professionals with the skills to transform raw data into strategic insights, enabling them to optimize inventory, improve demand forecasting, mitigate risks, and enhance overall supply chain resilience. At BIG BEN Training Center, we have structured this immersive experience to cover the entire analytics spectrum, from descriptive and diagnostic to predictive and prescriptive applications, ensuring participants can build and lead a truly intelligent supply chain. This course will empower you to leverage technologies and methodologies that drive efficiency, reduce costs, and create a more agile and responsive supply chain network.

Target Audience / This training course is suitable for:

- Supply Chain Managers and Directors.
- Logistics and Distribution Planners.
- Procurement and Sourcing Specialists.
- Operations Managers.
- Data Analysts and Business Intelligence Professionals.
- Inventory Control Managers.
- IT Professionals supporting supply chain functions.
- Finance and Cost Analysts involved in supply chain operations.

Target Sectors and Industries:

- Manufacturing and Industrial Production.
- Retail and E-commerce.
- Third-Party Logistics (3PL) and Freight Forwarding.
- Pharmaceutical and Healthcare.
- Fast-Moving Consumer Goods (FMCG).
- Automotive and Aerospace.
- Governmental agencies and public sector logistics.
- Energy and Utilities.

Target Organizations Departments:

- Supply Chain Management.
- Logistics and Transportation.
- Procurement and Purchasing.
- Operations and Production.
- Inventory Management and Warehousing.
- Information Technology (IT) and Data Science.
- Strategic Planning and Business Development.
- Finance and Controlling.

Course Offerings:

By the end of this course, the participants will have able to:

- Develop a strategic framework for integrating big data analytics into supply chain operations.
- Master techniques for data collection, cleansing, and preparation for analysis.
- Apply descriptive analytics to create insightful supply chain performance dashboards.
- Utilize predictive analytics for more accurate demand forecasting and inventory planning.
- Implement prescriptive analytics models for network optimization and cost reduction.
- Evaluate and manage supply chain risks using data-driven simulation and modeling.
- Leverage data visualization to communicate complex insights to key stakeholders.
- Understand the impact of emerging technologies like AI, IoT, and blockchain on supply chain data.
- Foster a culture of data-driven decision-making within their organizations.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be highly interactive, practical, and engaging, ensuring that participants can immediately apply their learning in a real-world context. We employ a blended learning approach that combines expert-led instruction with hands-on exercises, collaborative workshops, and in-depth case study analysis. Participants will work in teams to solve complex supply chain problems using sample datasets, simulating the challenges they face in their professional roles. The sessions will feature interactive discussions, group brainstorming, and peer-to-peer feedback to foster a rich learning environment. Our facilitators are industry experts who bring a wealth of practical experience, providing valuable insights and personalized guidance. The course emphasizes the strategic application of analytical concepts over pure theory, focusing on how to translate data into actionable business intelligence. This participant-centered approach ensures a deep understanding of the material and builds the confidence needed to lead analytics initiatives within any organization.

Course Agenda (Course Units):

Unit One: Foundations of Supply Chain Analytics

- Introduction to data-driven supply chain management.
- The role of big data in modern logistics and operations.
- Understanding the analytics maturity model.
- Key performance indicators (KPIs) for supply chain excellence.
- Data sources, collection methods, and data quality management.
- Ethical considerations and data governance in the supply chain.
- Building a business case for supply chain analytics initiatives.

Unit Two: Descriptive and Diagnostic Analytics

- Fundamentals of data warehousing and data lakes.
- Techniques for data cleansing, transformation, and integration.
- Developing effective supply chain performance dashboards.
- Data visualization principles for impactful reporting.
- Root cause analysis using diagnostic techniques.
- Conducting cost-to-serve and customer profitability analysis.
- Mastering tools and methods for historical performance review.

Unit Three: Predictive Analytics for Forecasting and Planning

- Introduction to predictive modeling concepts.
- Time-series analysis and advanced demand forecasting techniques.
- Machine learning models for predicting supplier performance and lead times.
- Predictive inventory management and safety stock optimization.
- Forecasting transportation costs and transit times.
- Predictive maintenance for logistics assets and machinery.
- Assessing the accuracy and reliability of predictive models.

Unit Four: Prescriptive Analytics and Optimization

- Introduction to prescriptive analytics and decision science.
- Linear programming for network design and facility location.
- Vehicle routing and transportation optimization algorithms.
- Simulation modeling for supply chain risk analysis and what-if scenarios.
- Developing pricing and revenue management strategies.
- Prescriptive models for production scheduling and capacity planning.
- Implementing real-time decision support systems.

Unit Five: Advanced Topics and Strategic Implementation

- The impact of AI and machine learning on supply chain automation.
- Leveraging the Internet of Things (IoT) for real-time visibility.
- Exploring the role of blockchain for transparency and traceability.
- Developing a sustainable and green supply chain with analytics.
- Change management for fostering a data-driven culture.
- Creating a strategic roadmap for digital supply chain transformation.
- Capstone project: Designing an end-to-end analytics solution for a case study.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

As supply chains become increasingly transparent through big data, what are the ethical implications of using predictive analytics to influence consumer behavior and supplier relationships?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by adopting a holistic, strategy-first approach to supply chain analytics. While many programs focus narrowly on specific software or statistical techniques, we emphasize the integration of analytics into the core business strategy to drive sustainable competitive advantage. The curriculum is built around a clear progression from descriptive to prescriptive analytics, ensuring participants develop a comprehensive skill set that covers the full spectrum of data-driven decision-making. We move beyond theory by immersing participants in realistic case studies and simulation exercises that mirror the complexities of modern global supply chains. This practical application ensures that learning is not just academic but immediately transferable to the workplace. Furthermore, the course content is continuously updated to include the latest advancements, such as the application of AI, IoT, and blockchain, preparing participants for the future of the industry. The focus remains on building critical thinking and problem-solving skills, empowering leaders to ask the right questions of their data and to cultivate a pervasive data-driven culture within their teams and organizations.