



EMBA Program
MB-511

Data Science for Managerial Decisions (MB 511)

Instructor
Anant Prakash Awasthi

Data Science for Managerial Decisions (MB 511)

Program Overview

- Introduction to Data Science
- Information Technology An Overview
- Applications of Data Science in various fields
- MIS and Control Systems
- Data Collection and Data Pre-Processing
- Building Information Systems
- Support Systems for Management Decisions



EMBA Program
MB-511

Information Technology An Overview

- Foundations of Information Technology
- Information Systems and Management
- Project Management in IT
- Cybersecurity and IT Governance
- Future Trends in Information Technology



EMBA Program
MB-511

Information Technology An Overview

Emerging Technologies - Artificial Intelligence and Machine Learning

Artificial Intelligence (AI) and Machine Learning (ML) are transformative technologies revolutionizing management practices. AI refers to the development of computer systems capable of **performing tasks** that typically require **human intelligence**, while ML enables systems to **learn and improve from experience** without explicit programming. In management, AI and ML streamline **decision-making processes**, **analyze vast datasets** to derive **insights**, and **predict future trends**. These technologies empower managers to make **data-driven decisions**, **enhance operational efficiency**, and **optimize resource allocation**. As businesses increasingly leverage AI and ML, understanding their applications becomes crucial for effective leadership in the rapidly evolving landscape of modern management.



EMBA Program
MB-511

Future Trends in AI & ML

- Explainable AI (XAI)
- Automated Machine Learning (AutoML)
- Quantum Machine Learning
- Federated Learning
- Neuromorphic Computing
- Edge AI
- Ethical AI
- Generative Models
- Transfer Learning
- Natural Language Processing (NLP) Advancements

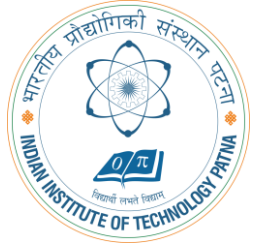
Information Technology An Overview

Emerging Technologies - Internet of Things (IoT)

The Internet of Things (IoT) plays a pivotal role in modern management by **interconnecting devices**, collecting **real-time data**, and facilitating informed decision-making. In management, IoT enhances efficiency by enabling **remote monitoring, predictive maintenance, and data-driven insights**. Through interconnected sensors and devices, organizations gain visibility into **operations, optimize resource utilization, and improve overall productivity**. IoT-driven data analytics empowers managers to make informed decisions, streamline workflows, and enhance customer experiences. Whether in manufacturing, logistics, or facility management, the integration of IoT fosters a more responsive and adaptive management approach, laying the foundation for a connected and intelligent business ecosystem.

Future Trends in IoT

- Next Generation Wireless Services (6G)
- Edge Computing
- AI and Machine Learning Integration
- Blockchain for Security
- Digital Twins
- IoT in Healthcare
- Smart Cities
- Energy Management
- IoT in Agriculture (AgTech)
- Human Augmentation



EMBA Program
MB-511

Information Technology An Overview

Emerging Technologies - Blockchain technology

Blockchain technology is of paramount importance in modern management, providing a decentralized and secure framework for data transactions. Its tamper-resistant nature ensures the integrity of information, enhancing trust and transparency in various management processes. Smart contracts enable automated and self-executing agreements, streamlining operations and reducing the risk of fraud. In supply chain management, blockchain enhances traceability and accountability. Additionally, it facilitates efficient and cost-effective cross-border transactions. As a transformative tool, blockchain empowers management with a robust foundation for data governance, offering unprecedented security and efficiency in a wide array of industries.

Future Trends in

Blockchain Technology

- Interoperability Protocols
- Scalability Solutions
- Smart Contracts Evolution
- Privacy and Confidentiality
- Sustainability Measures:
- Tokenization of Assets
- Decentralized Identity
- Oracles and Data Feeds
- Governance Models
- Cross-Industry Integration



EMBA Program
MB-511

Information Technology An Overview

Digital Transformation in Business

Digital transformation is the strategic use of technology to revamp business operations, enhance customer experiences, and maintain competitiveness. This shift integrates technology into all aspects of business, driving agility and innovation.

- **Technology Integration:** Digital tools like cloud computing, AI, and automation transform operations, making businesses more agile and efficient.
- **Optimized Processes:** Internal workflows become streamlined, resulting in cost savings and increased productivity.
- **Innovative Business Models:** New digital-driven approaches allow businesses to reach customers in more effective and engaging ways.
- **Enhanced Customer Experience:** Leveraging technology enables more personalized and responsive customer interactions.
- **Staying Competitive:** Businesses can respond quickly to market changes and stay relevant in a fast-evolving digital landscape.
- **Fostering Innovation:** Digital transformation encourages constant innovation, creating new opportunities for growth and differentiation.



EMBA Program
MB-511

Information Technology An Overview

Digital Transformation – Case studies

Notable digital transformation case studies across various industries

Amazon: E-Commerce Disruption

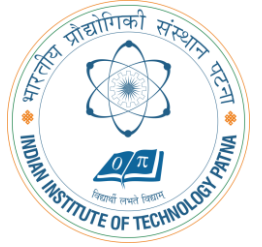
Transformation Focus: E-commerce and Cloud Computing

Details: Amazon's evolution from an online bookstore to a global e-commerce giant is a prime example. Its use of data analytics, machine learning, and cloud services has transformed the retail industry, setting new standards in customer experience, supply chain management, and logistics.

Netflix: Streaming Revolution

Transformation Focus: Media and Entertainment

Details: Netflix's transition from a DVD rental service to a global streaming platform is a digital transformation success story. Leveraging big data analytics, recommendation algorithms, and a cloud-based infrastructure, Netflix disrupted traditional television and changed how people consume content worldwide.



EMBA Program
MB-511

Information Technology An Overview

Digital Transformation – Case studies



EMBA Program
MB-511

Maersk: Blockchain in Supply Chain

Transformation Focus: Logistics and Shipping

Details: Maersk, a global shipping company, implemented blockchain to enhance transparency and efficiency in its supply chain. The solution, developed in collaboration with IBM, streamlined documentation processes, reducing delays, and preventing fraud.

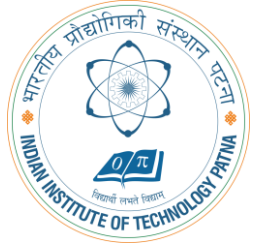
Starbucks: Mobile Payment and Customer Engagement

Transformation Focus: Retail and Customer Experience

Details: Starbucks embraced digital transformation by integrating mobile payment solutions into its app. This not only simplified transactions but also allowed for personalized marketing and loyalty programs, significantly enhancing the overall customer experience.

Information Technology An Overview

Digital Transformation – Case studies



EMBA Program
MB-511

General Electric (GE): Industrial IoT

Transformation Focus: Industrial Manufacturing

Details: GE's digital transformation involved adopting Industrial Internet of Things (IIoT) technologies. By embedding sensors and connectivity in its industrial equipment, GE could monitor performance in real-time, optimize maintenance schedules, and enhance overall efficiency.

Walmart: Omnichannel Retail

Transformation Focus: Retail and E-commerce

Details: Walmart's digital transformation strategy involved integrating online and offline retail channels. Investments in e-commerce platforms, supply chain optimization, and in-store technology innovations have allowed Walmart to offer a seamless omnichannel experience to customers.

Information Technology An Overview

Digital Transformation – Case studies



EMBA Program
MB-511

DBS Bank: Digital Banking Transformation

Transformation Focus: Banking and Finance

Details: DBS Bank in Singapore embarked on a digital transformation journey to become a "digital bank." They introduced a cloud-first strategy, revamped their online and mobile banking platforms, and embraced data analytics to provide personalized and efficient financial services.

Airbnb: Peer-to-Peer Hospitality

Transformation Focus: Hospitality and Travel

Details: Airbnb disrupted the traditional hospitality industry by creating a platform that connects hosts with travelers.

Leveraging digital technologies, Airbnb transformed the way people find accommodations, fostering a peer-to-peer sharing economy.

Information Technology An Overview

Digital Transformation – Case studies



EMBA Program
MB-511

Delta Airlines: Predictive Maintenance

Transformation Focus: Aviation and Transportation

Details: Delta Airlines employed predictive maintenance powered by data analytics and IoT sensors. This approach allowed the airline to predict potential equipment failures, optimize maintenance schedules, and improve overall fleet reliability.

AstraZeneca: Data-Driven Drug Discovery

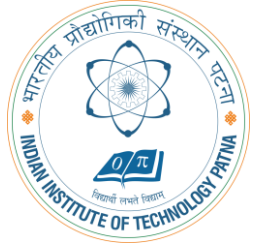
Transformation Focus: Healthcare and Pharmaceuticals

Details: AstraZeneca implemented digital technologies, including artificial intelligence and machine learning, to enhance drug discovery and development processes. This data-driven approach accelerates research, identifies potential drug candidates more efficiently, and reduces time to market.

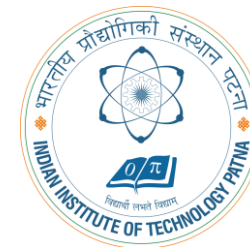
Information Technology An Overview

Digital Transformation – Frameworks

- McKinsey 7S Framework
- Prosci ADKAR Model
- Kotter's 8-Step Change Model
- TOGAF (The Open Group Architecture Framework)
- Digital Capability Framework (DCF)
- ITIL (Information Technology Infrastructure Library)
- NIST Cybersecurity Framework
- Six Ds of Exponentials (by Peter Diamandis)
- Gartner's Pace-Layered Application Strategy
- IDC's 3rd Platform Model
- Agile Transformation Framework



EMBA Program
MB-511



EMBA Program
MB-511

Have a question?

Feel Free to Reach out at

- **+91-88846-92929** (WhatsApp)
- **anant.awasthi@outlook.com** (E-Mail)