

Unit 57: Business Intelligence

Unit code	M/615/1641
Unit level	5
Credit value	15

Introduction

Data and information are core to any organisation and business process. The necessity of having meaningful information is the key driver for effective decision making and problem solving. Business intelligence has evolved from technologies such as decision support systems (DSS) to include tools and methods associated with data mining, data integration, data quality and data warehousing, in conjunction with other information management systems and applications.

In this unit, students will examine the concept of business processing in terms of data capture, conversion and information output and they will define the tools and technologies associated with business intelligence functionality. Students will use business intelligence tools and techniques to demonstrate an understanding of a given problem. Finally, students will evaluate the impact of business intelligence on effective decision making.

On successful completion of this unit, students will appreciate the importance of business intelligence in terms of optimising decision making and performance. By exploring the tools, techniques and systems that support business intelligence, students will be aware of their role and contribution, and their importance to organisations. As a result, students will develop skills such as communication literacy, critical thinking, analysis, reasoning and interpretation, which are crucial for gaining employment and developing academic competence.

Learning Outcomes

By the end of this unit students will be able to:

- LO1 Discuss business processes and the mechanisms used to support business decision making
- LO2 Compare the tools and technologies associated with business intelligence functionality
- LO3 Demonstrate the use of business intelligence tools and technologies
- LO4 Discuss the impact of business intelligence tools and technologies for effective decision-making purposes and the legal/regulatory context in which they are used.

Essential Content

LO1 Discuss business processes and the mechanisms used to support business decision making

Business process model:

Data input and capture, data processing/conversion and information output, security considerations; unstructured and semi-structured data.

Tactical and operational decisions, the business process model, business intelligence functionality.

Comparison of systems and technologies associated with business intelligence.

Mechanisms:

Application software and databases used to collect and store intelligence.

Systems used to manage, analyse and display business intelligence to support the decision-making process; the importance of reliable data; impacts of reliable data in businesses.

Business processes:

Different types of business processes:

- management, e.g. supporting decision making, problem solving; operational, e.g. sales, purchasing and marketing
- support, e.g. accounting, technical supporting processes.

Methods for improving the efficiency of a business process, e.g. forecasting, decision making

- predictive reasoning
- automating processes, e.g. print runs, salary slips.

LO2 Compare the tools and technologies associated with business intelligence functionality

Support for business decisions:

Operational tactical and strategic.

Operational examples, including product positioning or pricing.

Tactical decisions, including financial outlay to gain competitive advantage.

Strategic business decisions, e.g. priorities, goal setting, forecasting for the future, global diversification.

Business intelligence functionality:

Analysing data, decision making, problem solving, designing more intuitive/innovative systems.

Systems and technologies:

Information systems at an operational, tactical and strategic level. Transaction processing, management information systems, decision support systems, expert systems.

LO3 Demonstrate the use of business intelligence tools and technologies

Tools and techniques:

Descriptive and predictive analysis, predictive modelling, e.g. forecasting, use of statistical models to predict and identify trends.

Data mining techniques to find anomalies, cluster patterns and/or relationships between data sets.

Converting data into visual information using charts, graphs, histograms and other visual mediums.

Solutions:

Supporting a business process, e.g. end-user requirements, systems requirement, application to automate procedures.

Designing a tool, program or package that can perform a specific task to support problem solving or decision making at an advanced level.

Uses:

The design of an application to solve a specific user need or system requirement.

E-commerce functions for a website to support a specific business process.

How to design a program for a specific end user that will support another application or process.

Design considerations:

Addressing a user or system requirement.

Designing a user-friendly and functional interface, considering user engagement and interaction with the designed solution.

The value of customisation of the solution to satisfy the user and system requirements.

LO4 Discuss the impact of business intelligence tools and technologies for effective decision-making purposes and the legal/regulatory context in which they are used.

Recognise the legal, social, ethical and professional issues involved in the exploitation of computer technology.

Cybersecurity management:

The personal, organisational and legal/regulatory context in which tools could be used.

The risks of such use and the constraints (such as time, finance and people) that may affect how cybersecurity is implemented.

Evaluation criteria:

Enhanced or improved operations, e.g. more efficient, faster results, more user friendly, higher productivity, extended target audience, more competitive, more profitable, improved customer service.

Learning Outcomes and Assessment Criteria

Pass	Merit	Distinction
LO1 Discuss business processes and the mechanisms used to support business decision making		D1 Evaluate the benefits and drawbacks of using application software as a mechanism for business processing.
P1 Examine, using examples, the terms 'Business Process' and 'Supporting Processes'.	M1 Differentiate between unstructured and semi-structured data in an organisation.	
LO2 Compare the tools and technologies associated with business intelligence functionality		D2 Justify, with specific examples, the key features of business intelligence functionality.
P2 Compare the types of support available for business decision making at varying levels in an organisation.	M2 Compare and contrast a range of information systems and technologies that can be used to support organisations at operational, tactical and strategic levels.	
LO3 Demonstrate the use of business intelligence tools and technologies		D3 Provide a critical review of the design in terms of how it meets a specific user or business requirement and identify what customisation has been integrated into the design.
P3 Determine, with examples, what business intelligence is and the tools and techniques associated with it. P4 Design a business intelligence tool, application or interface that can perform a specific task to support problem solving or decision making at an advanced level.	M3 Customise the design to ensure that it is user friendly and has a functional interface.	

Pass	Merit	Distinction
<p>LO4 Discuss the impact of business intelligence tools and technologies for effective decision-making purposes and the legal/regulatory context in which they are used.</p>		
<p>P5 Discuss how business intelligence tools can contribute to effective decision making.</p> <p>P6 Explore the legal issues involved in the secure exploitation of business intelligence tools.</p>	<p>M4 Conduct research to identify specific examples of organisations that have used business intelligence tools to enhance or improve operations.</p>	<p>D4 Evaluate how organisations could use business intelligence to extend their target audience and make them more competitive in the market, taking security legislation into consideration.</p>

Recommended Resources

Textbooks

GESIER, E. (2021) *Beyond Business Analytics* Palgrave Macmillan UK.

JESTON, J. and NELIS, J. (2017) *Business Process Management*. 4th Ed. Routledge.

MARR, B. (2017) *Data Strategy: How to Profit from a World of Big Data, Analytics and the Internet of Things*. Kogan Page Ltd.

MARR, B. (2015) *Big Data: Using SMART Big Data, Analytics and Metrics to Make Better Decisions and Improve Performance*. 1st Ed. John Wiley & Sons Ltd.

MARZ, N. & WARREN, J. (2015) *Big Data: Principles and practices of scalable real time data systems*. Manning Publications Co.

Websites

www.businessintelligencetechnologies.com	Business Intelligence Technologies Blog (General reference)
www.ibm.com	IBM Learn (General reference)
www.ukdataservice.ac.uk	UK Data Service Use data Student resources (General reference)

Links

This unit links to the following related units:

Unit 6: Managing a Successful Business Project (Pearson Set)

Unit 45: Business Data Analytics and Insights