paradigm shift.

Management Information 2025 – New Content Added for 2025 Workbook

Please note that some chapters do not have any new content for 2025 so the omission of certain chapters in our review below is not an error.

This document is not intended to cover all points in the relevant sections: instead, we just want to give you an overview of the main points.

If you have also purchased access to our Certificate Level subscription package, don't forget to make use of the online quick-fire questions on these 2025 syllabus updates which are provided as part of our Management Information course: the quick-fire questions will get you working with the following content in an active way, which is always the best way to learn!

Chapter 6   Budgeting

3.10   Big data, data analytics and data mining

- Data: Distinct pieces of information that can exist in various forms, such as numbers, text, electronic memory, or facts stored in a person's mind

3.10.1 Big data – what is it?

- **Velocity:** Big data is generated rapidly and flows continuously, often highly time-sensitive, requiring quick processing, ideally in real time
- **Veracity:** The accuracy, reliability and quality of big data can be compromised by factors such as varying quality of data sources, challenges in verifying informal or unstructured data, need to filter out noise and identify bias, and lack of time for checks when processing data in real time

3.10.2 Big data benefits

- Big data has numerous business applications, including customer insights, predictive analytics, risk management, operational efficiency, fraud detection, product development and social media analysis

3.11   Artificial intelligence and machine learning

Definitions

Artificial intelligence (AI): The field of study and application involving the creation and utilisation of advanced computer systems to perform tasks that traditionally require human intelligence, such as learning from data, reasoning, problem-solving, sensory understanding, language processing and creative work. AI systems adapt to new information or environments and operate with autonomy to make informed decisions

Machine learning (ML): The ability of a computational device to learn from large volumes of training data and improve performance of a given task without being explicitly programmed

- AI in budgeting and forecasting focuses on its ability to assist Management Information (MI)
- Different subsets of AI include:
    - Computer vision which identifies information from images and videos
    - Generative AI creates text and images in response to human prompts (e.g., ChatGPT, Copilot), though its value for accountants is still uncertain
    - Natural language processing provides AI the ability to understand and manipulate human language (e.g., Apple's Siri, Amazon's Alexa)
    - Machine learning aids in forecasting, a subset of which is deep learning, inspired by the functioning of the human brain

- AI can be categorised into deterministic or probabilistic systems:
    - Deterministic AI operates under pre-defined rules and produces consistent outputs given the same inputs, such as in optical character recognition (OCR)
    - Probabilistic AI incorporates uncertainty in its models (e.g., forecasting models with probability distributions instead of exact values)
- Generative AI (such as ChatGPT) gives different results for the same input, based on training data from the internet and statistical models predicting word sequences (e.g., chatbots trained to predict the next word)
- Modern machine learning uses a combination of deterministic and probabilistic systems, mainly relevant to MI for forecasting
- Examples of forecasting tools using machine learning include:
    - Cash flow forecasts: algorithms analyse sales invoice data to predict timely or late invoice receipts, providing unbiased analysis of past data to anticipate outcomes, though human intervention may still be required for unusual events
    - Machine learning complements human decision-making rather than replacing it
- Other uses of AI in forecasting and budgeting:
    - Auto population of budget software through extracting and categorising data from financial documents
    - Expense tracking coupled with analytics to offer insights
    - Identifying seasonal variations (e.g., Meta's Prophet software)
    - Real-time alerts for timely intervention
    - Scenario planning utilising pricing, activity levels, and market condition variance

Problems with AI
  - **Over trusting outputs:** AI systems may lack transparency in their decision-making process, complicating accountability when errors occur
  - **Data protection:** Consent is needed from individuals if personal data is used in AI systems
  - **Ethics:** Algorithms must be designed to ensure fairness, transparency, and accountability
  - **Copyright:** Data used in AI must adhere to copyright laws
  - **Quality of data:** Generative AI may not access information behind paywalls, affecting availability of quality data
  - **Data bias:** AI systems may inherit biases from the data utilised in training, potentially introducing unfair outcomes
- High investment costs require spending on technological infrastructure, software, and personnel training
- Accuracy issues arise with generative AI, and people tend to apply a higher standard to errors occurring in AI systems compared to human mistakes (e.g., mistakes by self-driving cars). AI

errors presented as facts are known as 'hallucinations', caused by data bias, insufficient training data, or incorrect model assumptions

- Many issues can be minimised by understanding the data source and how results were achieved. AI models primarily use internal accounting data but are complemented by external sources like market trends, industry benchmarks, macroeconomic data, weather, supplier and customer data, and customer reviews

- Conclusion: Accountants must develop skills in professional scepticism and critical thinking, ensuring the use of AI remains aligned with sound judgments. They must decide the information to enter into AI tools, interpret and communicate AI outputs, and mitigate risks such as cyber-attacks impacting AI-generated information for end users

5.1 What is data bias?

Definition

- o Data bias occurs when data is not representative of the population being analysed. Bias can be inherent in the collected data or introduced by those analysing it

- o Data bias arises when datasets fail to accurately model the intended reality, often due to skewed, incomplete or prejudiced information. Reasons include biased data collection methods, unrepresentative sample populations, or assumptions made during collection or processing

- o Data bias affects machine learning models or AI algorithms, leading to inaccurate or unfair results. For example, facial recognition systems may perform poorly for women and individuals with darker skin, as they may be trained on unrepresentative datasets

- o Data bias holds significant consequences in AI applications such as recruitment, insurance, criminal justice, and healthcare, where biased models risk inaccurate or unfair decisions, potentially perpetuating or amplifying existing inequalities

Chapter 8   Performance management

2.9   Cloud accounting

Definitions

Cloud computing: On-demand access via the internet to computing resources, including applications, servers (both physical and virtual), data storage, development tools, networking capabilities, and more, hosted at a remote data centre managed by a cloud services provider (CSP)

Cloud accounting: Conducting basic accounting tasks, such as managing and balancing the books, using software that resides in the cloud and typically delivered in an as-a-service model

- Most cloud accounting applications are provided via Software-as-a-Service (SaaS), where the accounting platform is accessed through a web browser, and software and data are hosted by the provider
- Alternative models include:
  - Platform-as-a-Service (PaaS), which enables users to develop custom applications while accessing the platform online
  - Infrastructure-as-a-Service (IaaS), where infrastructure is provided online and users install the accounting software of their choice

2.9.3   Real-time monitoring

- Real-time monitoring refers to keeping track of activities as they occur, such as when a sale is made and updating sales, cost, inventory, and profit data almost instantly
- Instant access to financial data, available anytime and anywhere via a cloud accounting system, supports faster and more informed decision-making
- Up-to-date information from real-time monitoring aids:
  - Fast reaction to market fluctuations
  - Improved cash flow management
  - Higher accuracy, as time lags present in traditional accounting systems are eliminated
  - Adherence to regulatory compliance

Glossary

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