

**ANL201**

**Data Visualisation for Business**

**Tutor-Marked Assignment**

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**Question 1**

(a)

A Mission statement sets out the very reason for an organisation to exist (Tay, 2021). In this case, Microsoft’s Mission statement is “to empower every person and every organisation on the planet to achieve more” (Microsoft, 2021).

(b)

A vision statement sets out what an organisation aims to achieve in the future. While Microsoft did not explicitly state their vision, it is established that Microsoft will focus on cloud computing for 2020.

Microsoft has been working closely with its customers and developers to ensure that the applications and infrastructure provided are ever ready to assist them to adapt to the ever-changing digital economy. For example, Microsoft’s most recent acquisition of GitHub which is used by over 40 million developers across different technological companies shows its commitment to the importance of developers and its willingness to provide tools for them to innovate (Microsoft, 2021).

Additionally, the organisation has also been expanding its Azure cloud services, such as acquiring more cloud datacentres across the Middle East and South Africa, as well as meeting most regulatory and compliance certifications than most companies. This enables its Azure service to be the only cloud that brings a full suite of services, such as Data Box Edge to Azure Stack HCI (Microsoft, 2021).

Microsoft also enhanced its Azure cloud service, to be ready to serve with a capacity to handle up to 50 billion connected devices by 2030. It had invested and developed capabilities such as bringing data analytics function to its relational database service, for example, Azure Data Factory to Azure SQL Data Warehouse (Microsoft, 2021).

(c)

The three strategic themes relate to:

* Reinvent productivity and business processes
* Build an intelligent cloud and intelligent edge platform
* Create more personal computing

*Reinvent productivity and business process*

Microsoft is embracing that computing will not be limited to just one, but multiple devices, which enables people to work and play from anywhere. As a result, Microsoft has been extensively developing its full suite of Microsoft 365 software applications to meet this era of computing. For example, building Office 365, Windows 10, Enterprise Mobility, Security as well as Microsoft Teams into its suite of 365 applications, with AI-backed tools that allow employees to build and innovate anywhere, promote better collaboration, all while ensuring compliance requirements are met, and personal data is protected (Microsoft, 2021).

*Build an intelligent cloud and intelligent edge platform*

The organisation has also been expanding its Azure cloud services, such as acquiring more cloud datacentres across the world to support these services. Microsoft also ensures that there is comprehensive coverage for its cloud services, as well as a built-in AI security. By working as a global-scale cloud, it allows the company to offer a hybrid suite of services, for both developers as well as having the capability to support real-world needs. One great example would be Microsoft acquisition of GitHub, where this acquisition is expected to empower developers and provide them with the tools that they need to innovate (Microsoft, 2021).

*Create more personal computing*

Additionally, Microsoft designs its suite of products and services by putting its users as the main focus, to make technology more intuitive, user-friendly and dynamic to its end users. A great example would be the cohesiveness of Office and Windows devices working together hand in hand. The creation of Windows 10 with its focus on security and productivity allows Microsoft to push forward into the enterprise sector, as well as offering its full suite of features from its Azure cloud services. As such, it aims to provide productivity and full support to enable organisations to have the resources to innovate and develop from just the Windows ecosystem itself (Microsoft, 2021).

(d)

The four stages of data visualisation process involves:

* Collection and storage of data
* Data pre-processing
* Graphics engine
* Human perceptual and cognitive system

*Collection and storage of data*

The first stage of data visualisation process relates to the collection and storage of data. Challenges that usually occur at this stage are as such, inconsistencies in data collection, the accuracy of data collected, data could be complex, staff are not trained in data collection (Vic, 2018). For example, to collect the data regarding the adoption rate of the usage of Microsoft Azure cloud services by its business partners and customers, and information collected could vary with the amount of information gathered depends on the context. Additionally, the staff might not be aware of the requirements of the data being gathered.

*Data pre-processing*

The second stage relates to the pre-processing of data to process them into understandable facts and figures. Challenges at this stage usually relate to missing data or inconsistent data collected, or incomplete data types, which will affect the pre-processing time of the data collected (Lima, 2018). In this event, feedback received from Microsoft Azure cloud services customers could be inconsistent or incomplete fields, which can make data processing less efficient and more time is needed to clarify the data collected, before it is processed.

*Graphics engine*

The third stage relates to the graphics and hardware capability to display the visualisation of data. Challenges usually relate to the computing power of the graphics and hardware to load and display the data as useful diagrams and charts for users to visualise the data. Generally, modern computing processors can display and process complex data that is being displayed on the screen. However, data with intensive volume could demand higher requirements for data visualisation to work effectively. Such as the data collected and processed regarding end-users feedback for Microsoft Azure cloud services is dependent on requirements of data collected and required.

*Human perceptual and cognitive system*

The last stage relates to how users of the data perceive, interpret and visualise the data. Through the first three stages, data is collected, processed and visualised. The challenge is that it ultimately relies on the user’s perception of how the data is being read and used to make decisions. Users with limited literacy skills could struggle with complex datasets being displayed. Reading the overall data collected for users feedback for Microsoft Azure cloud services is highly dependent on management interpretation and how well its team of data analyst could analyse the data, to assist in supporting management decisions.

(e)

*Nominal*

Nominal measurements measure data based on labels, categories, or other qualitative classification the data belongs to, with no particular order (Tay, 2021).

According to Microsoft’s Annual Report 2019, an interesting data would be the classification of its products for its business segment into 3 categories, in terms of Productivity and Business Processes, Intelligent Cloud, and More Personal Computing. Each category is further broken down as such:

* Productivity and Business Processes (Office Commercial, Office Consumer, LinkedIn, Dynamics)
* Intelligent Cloud (Server Products and Cloud Services, Enterprise Services)
* More Personal Computing (Windows, Devices, Gaming, Search)

Through this data, it is interesting as it provides an overall picture of all the products and services offered by Microsoft at one glance. It is good as every end-user could be interested in a particular product or service, depending on their interest, and they do not have to scroll through the entire annual report to identify the products and services offered by Microsoft.

However, the data could be further presented in a more detailed and classified according to their market share, perhaps through an ordinal measurement. By breaking down each category, the company could further rank each product and service by the percentage of the market share held by each, which could give the end-users further details as to whether the product or service offering is well accepted and used by users in the market.

*Ratio*

Ratio measurements measure data quantitatively, with an equal and definitive ratio between each data and absolute “zero” being treated as a point of origin (QuestionPro, 2020).

If we refer to Microsoft’s Annual Report 2019, another interesting point would be its comparison of operating revenue from the fiscal year 2018 to its current fiscal year 2019. It is stated that revenue had increased by $15.5 billion or 14%, with growth broken down into each segment respectively. They further reported the changes in operating expenses, such as cost of revenue which increased by $4.6 billion or 12%, from 2018 to 2019.

In my opinion, the usage of ratio measurement data is good as it allows users of the annual reports looking at financials to analyse and study the trend in order to draw conclusions about Microsoft financial data over a period of time, in order to make decisions. A recommendation would be to provide the changes in revenue through a visual chart and show data over a certain time period, which provides a much clearer picture, that assists users to make much more accurate comparisons respectively.

References

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