DEPARTMENT OF ECONOMICS
AND BUSINESS ECONOMICS
AARHUS UNIVERSITY

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BSS

EXAM ASSIGNMENT

Study Programme and level	MSc Business Intelligence	
Term	V15-16o	
Course name and exam code(s)	Data Warehousing	460132E009
Exam form and duration	Written exam, WOAI	3 hours
Date and time	15 December 2015	9:00-12:00
Supplementary material allowed	PC necessary, open book, internet allowed	
Other relevant information		
Hand-in of hand-written material allowed	Yes No X Comments:	
Number of pages (incl. front page)	3	

Other instructions:

Remember to write your student ID number on your answer and make a PDF before upload.

Information Management Solution (IMSUK) is the United Kingdom subsidiary of International Management Solutions Inc. (IMSGB) who purchases health related data from an array of sources, curate the data, and sells it to customers primarily in the pharmaceutical industry.

IMSUK began operations in 1999, when Eric Johnson and Paul Jennings began to collect sales data from pharmacies in and around London as a part of their Master Thesis. They skipped the Master Thesis, as they saw a market for pharmaceutical sales data as nobody in the pharmaceutical industry was able to track their sales to the end-user of their products (and more importantly, to the doctor prescribing the products).

In 2002, IMSGB purchased Arrow Informations, who made a similar collection of data related to consumption of pharmaceutical products at hospitals operated by National Health Services and in 2005, they reached an exclusive deal with the General Pharmaceutical Council of UK, which effectively created a monopoly on pharmaceutical sales data in the United Kingdom.

The sales soared and the revenue exceeded MGBP 200 in 2010 and in 2014, the net income was MGBP 58.

In 2012, IMSUK was acquired by IMSGB for an undisclosed amount.

To process the data smoothly, IMSUK created a data platform in 2001 that could

-   read a predefined file-format,
-   perform some conforming operation, and
-   output a standardized dataset

that was burned to a compact disk and delivered by a messenger service to the customers. Due to the fact that the data platform was designed by Mr. Jennings, it has virtually remained unchanged.

Over the years, the variety of the data formats of the supplied data have increased significantly and as a response, a growing team of data engineers have been hired to manually process the data into the pre-defined file-format and to deal with various data quality issues. As a result of rising labour costs in the UK, the data engineering teams have gradually been offshored to subcontractors in India and the Philippines. Due to the manual processing of data, the turn-around-time (time from registration of a sale to delivering the data to the customers) of the data is between 3½-4 months and during 2013 and 2014, IMSUK was not able to deliver data according to the contracts due to illness of key personnel in the data management process.

Because of the limitations in manual data processing, IMSUK have abandoned offering social media data.

In the spring of 2015, IMSUK lost a number of contracts to Smart Array, a start-up company created by former sales representatives and managers from Johnson Pharmaceuticals, who utilized the expiration of the exclusive deal between IMSUK and the General Pharmaceutical Council, and they now see monetization as their a business opportunity.

Backed by an IT venture fund, Smart Array offers raw data, curated data containing sales, social media as competitor information, various standard visualizations, and dashboards that fits directly into the common pharmaceutical sales process supporting a well-defined set of roles updated weekly. Furthermore, Smart Array is offering self-service capabilities on the visualization a dashboard platform.

Over the summer, the loss of contracts added up to MGBP 25 yearly with almost the same impact on net income. As a response, the management of IMSUK reduced the salesforce; especially the senior sales managers who possessed deep insight into the pharmaceutical sales processes.

As a consequence, the management of IMSUK was replaced, and Magnus Ward was installed as Chief Technology Officer. Mr. Ward is requesting you to assist him in analysing how to improve the competitive position of IMSUK as soon as possible.

Please explain:
   a) the general concept of Business Intelligence,
   b) IMSUK's role in the Business Intelligence process,
   c) how Business Intelligence can help IMSUK improve the competitive position,

   d) the general role of a Data Warehouse in a Business Intelligence solution,
   e) the role of a Data Warehouse in the IMSUK-business,
   f) how you would design a Data Warehouse Architecture to support the business of IMSUK,

   g) the BI/DW Methodology in general,
   h) which specific development methodology you would recommend in the current situation,
   i) how you would document the requirement of IMSUK's customers (given your choice of development methodology), and

   j) how you would organize the BI/DW-effort in order to support the business of IMSUK.