DESIGN AND BUILD MODERN DATACENTRES

A to Z practical guide

ENGINEER SAID AL HOSNI

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About the Author

Engineer Said AL Hosni has vast experience in the field of information technology including information systems management, IT infrastructure planning, Datacentre design, IT audit, implementation management, as well as operation.

Academic degrees such as Bachelor of Engineering in Data Communication and Systems Administration, and Master of Science in Information Systems from the venerable University of Coventry, UK, along with professional certificates such as Certified Datacentre Management Professional (CDCMP), Certified Datacentre Audit Professional (CDCAP), and Certified Datacentre Design Professional (CDCDP).

He becomes a valued Consultant to various institutions due to passing through multiple stages, and the extensive experience gained in numerous areas, e.g., hardware, software and Datacentre infrastructure planning, implementation and management.

He was recently appointed as an information systems expert accredited to the Ministry of Justice and law affairs.

He has successfully led and delivered multiple Datacentre projects against deadlines and budgets, assessing and identifying risks and determining corrective action and solutions.

Acknowledgements

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I cannot forget my previous employers, who inspired me during the twenty-seven years of works, which gained me a valuable experience throughout those projects I completed during those years.

Also, special thanks to those who contributed to the completion of this book, even with a word of encouragement. It has had an impact on my motivation to accomplish this book.

Dedication

To the souls of my dear mom and dad, even though you did not witness this moment with me, I am sure that you are blessing this step wherever you are. To my beautiful family, who has always supported me to reach my aspirations, you have always been the best support in my long, arduous path. All my appreciation to everyone who supported me for getting this work done.

Preface

Congratulations on finding out about this book. I am writing this book to help Datacentre owners and designers learn how to design and build Datacentre correctly.

This book is one of the rare books designed to simplify the complexity and guide the learner to explore and discover the secrets of Datacentre designs. I hope the information in this book is intuitive enough for Datacentre designers to follow through with clear guidance. Having a good foundation of IT skills will help a lot in understanding this book.

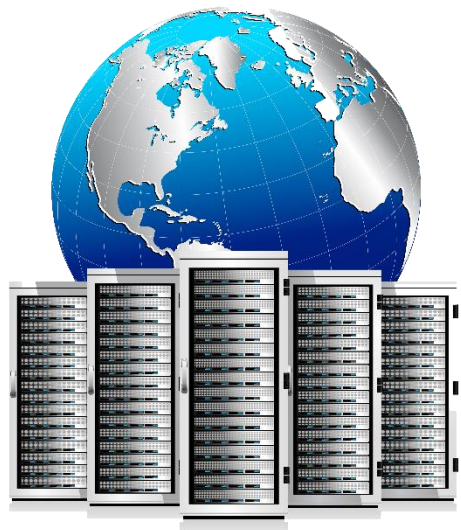
This book is an excellent opportunity to understand and practice Datacentre designing and building. It is an essence of my thoughts and experiences during 29 years of work in the field of information technology, particularly designing and building of Datacentres.

My goal in this book is to fill in the noticeable shortage in books that deal with the design of Datacentres systematically. This book covers designing and building of Datacentres, from the stage of site selection to the stage of completing the construction and operation.

I can guarantee that anyone who is familiar with information technology and project management by reading and understanding this book will be able to design and build a Datacentre according to the latest specifications, provided that a professional company is nominated to implement the project according to the work plan.

Contents

Chapter 1: What is a Datacentre?



Definition of Datacentre

A Datacentre is a building or dedicated space within a building or a group of buildings that is used to host computer systems and related associated components such as telecommunications and storage systems.

The environment of these buildings is highly controlled by temperature, humidity and electricity power, access authorisation, and monitoring.

A Datacentre is the heart of any institution. It is where the business of any kind depends heavily on for information systems processing, storage and retrieval of data. This means that institutions depend highly on IT for their business, bringing about a situation where they do not bear interruption of this service in any way. However, IT admins have to pay attention to this aspect.

Why Do We Need a Datacentre?

Institutions need Datacentres for several reasons. We can summarise these reasons as the following:

1. Data becomes the most valuable asset for any enterprise (Big Data).
2. Enterprise becomes a data-hungry species.
3. Demand for more processing power is increasing.
4. Data theft becomes more dangerous than ever.
5. The need to guarantee information security is essential for the enterprise.

Is It Recommended to Build A Datacentre or Rent A Space in An Existing One (Outsourcing)?

Typically, building a Datacentre is essential for large enterprises or enterprises that believe their data is of paramount importance, such as Defence and law enforcers. This option is the most costly, and it requires a considerable budget, perfect design, good management teams and perfect supportive contractors, and active suppliers and utility providers.

Advantages of Datacentre Outsourcing

- **Guaranteed Uptime**

Usually, the service provider has at least TIER 3 Datacentre along with one or more backup Datacentre that guarantees little chance for downtime and fast recovery in case of disaster. Also, the customers are usually protected

by a Service Level Agreement (SLA) that guarantees their rights.

- **Higher Scalability**

It is much smoother for the customer to acquire more space or processing as needed with reasonable cost and without excessive planning for upgrade compared with own Datacentre.

- **Better Flexibility and Speed**

It is much flexible and fast to get the service compared to building your Datacentre. With this option, you can choose the best service provider and a suitable plan, and then you are ready to go.

- **Cost Savings**

This option can save the customer a considerable amount of money, as he/she is not responsible for building, running cost, and utility bills (the hardware and the upgrade cost except the colocation service).

- **Improved Latency and Connectivity**

The service provider provides the best available network connectivity typically as they are providing the IT services to multiple customers. Therefore, it is very worthwhile for them to hire a high bandwidth from the communication companies, and this helps the customers to enjoy minimum latency communication.

- **Increased Business Focus**

Outsourcing allows the customers to focus on business rather than monitoring, testing, auditing, maintaining and upgrading the Datacentre.

Dear sir/Madam

If you find the book interesting and useful, please buy it now, and I assure you that you will not regret your decision to buy it.

I wish you a pleasant reading journey with the book.

Please do not forget to revisit us to review the book, helping others make a purchase decision.

With best regards,

Engineer Said AL Hosni