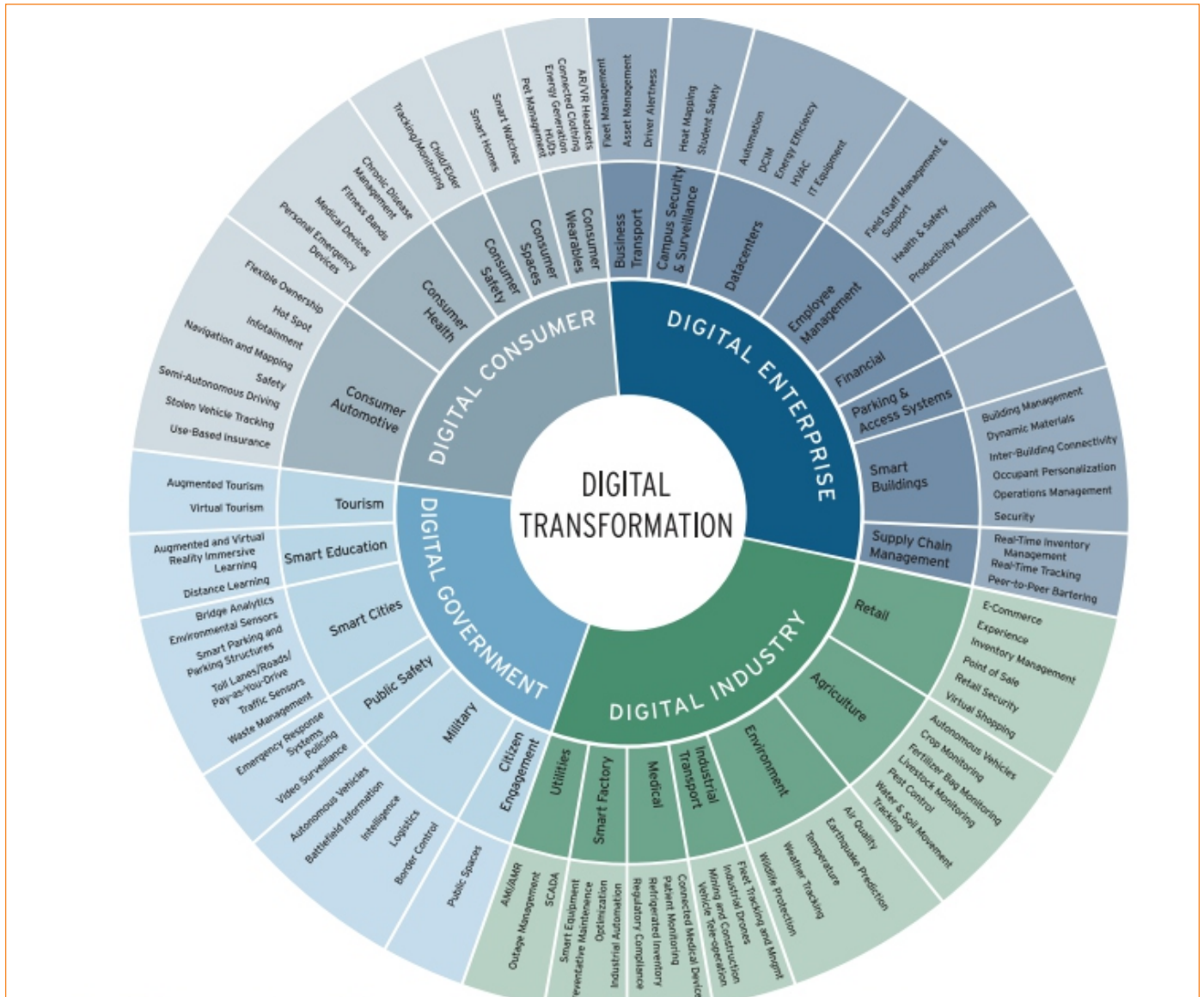


Data Center – opportunity evolves

Data is next possible currency and we are arriving in fourth industrial revolution age where data exchange is the one and other way to make assets. In this mobile age we can't even think our daily activities at home, on road or in office without “Data”. Our socio-economic life nowadays relies on different “smart” activities where data is involved.

This paper shed some light about “Data Center” – its importance and how we explore our career graph with the evolve of data center



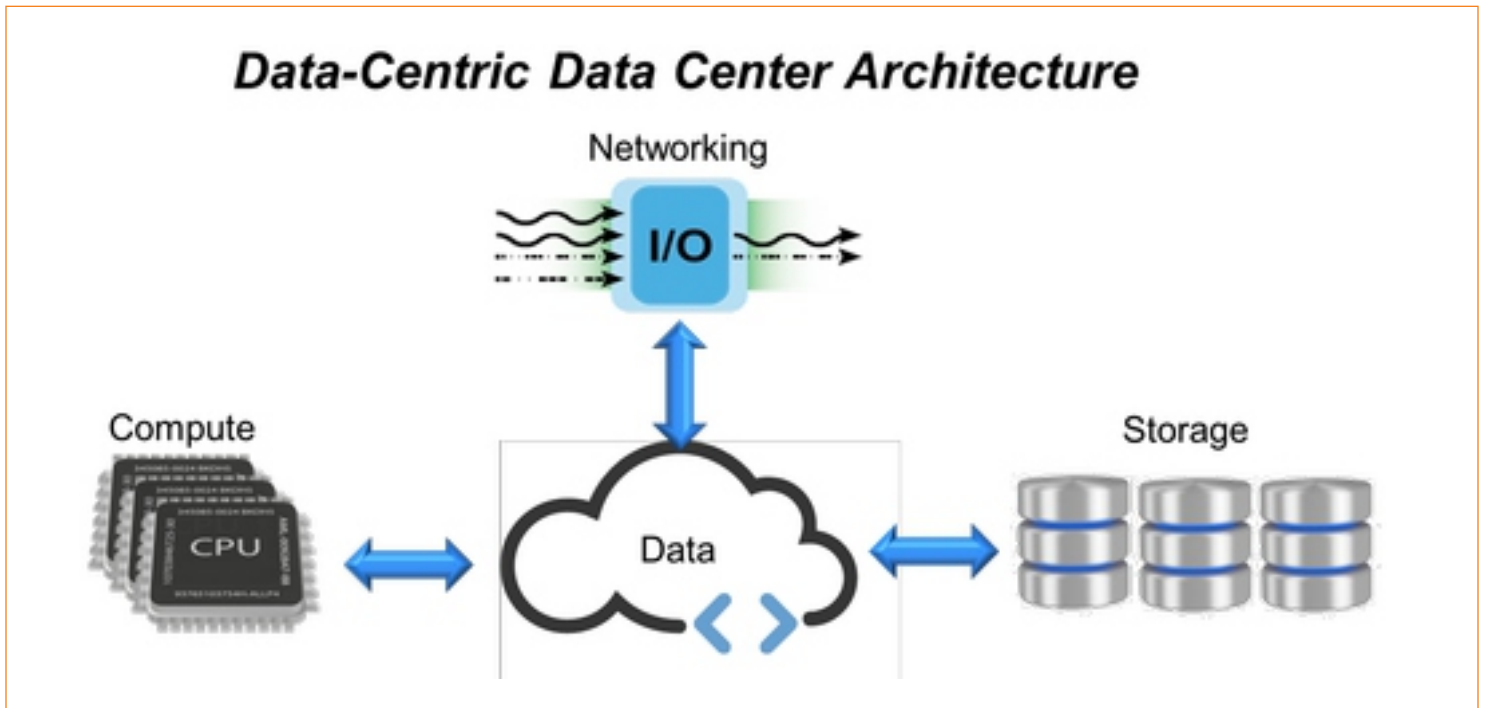
DATA CENTER:

Instance 1: We talk over phones, mobile phones, send sms, do online chat, streaming video, using apps thru smart phones – how & where data / signal processing; where we store data?

Instance 2: Today we used to use different search engines, social media, online shopping, reading books over internet, online booking – where these data gone? Where are they kept? How are they come in lightning fast process?

Instance 3: In modern manufacturing & service world automatic machines are working – where they store instructions/how are they connected for batch production activities, where different application data are stored?

If we investigate, we may get few big names like cloud, edge, enterprise, CRM etc. but we come across two very common term “DATA” & “DATA CENTER”. Here we explain very basic of data center.



The data center is home to the computational power, storage, and applications necessary to support an enterprise business. The data center infrastructure is central to the IT architecture, from which all content is sourced or passes through.

Broadly, a data center can be classified two major part in terms of component present in data center – 1. Active i.e. servers, switches, nodes etc. and 2. Passive – for infrastructure of data center like racks, power solution, cooling solution, fire suppression system, networking; even civil infrastructure also.

Data Center is one of the most critical space in today's time but how critical it is; let's have a look:

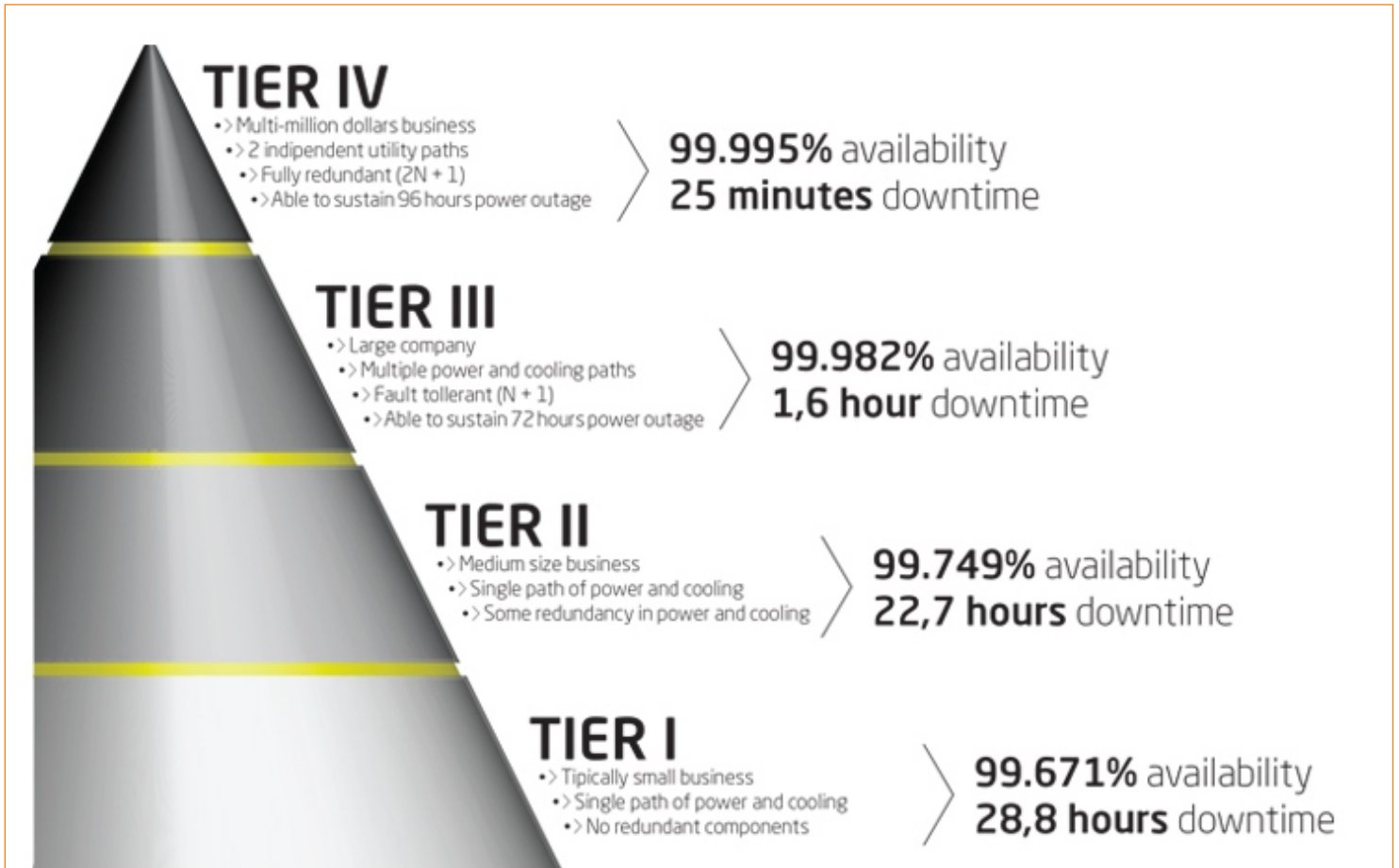
Scenario I: Modern living system, medical system, and even education system largely relies on IT infrastructure; let it be daily need of human beings or research work in institute; in failure of data center all will be drastically disturbed.

Scenario II: Finance sector data center down leads economic shut down in world as transaction system collapse, stock exchanges crash, ATM/online payment standstill.

Scenario III: IT system of any institute is back bone at today's business world can be utterly collapsed during downtime of data center.

Scenario IV: Transportation system like aviation, road, water – all kind transportation signaling system collapse which lead to even accidental occurrence can take place.

if we dive little depth, Data Center is also classified in TIER rating considering criticality and allowable downtime.



To maintain this kind of uptime in critical space like data center, telecom switch center various special components are being used and few majors are listed below:

- a) UPS & Battery management
- b) Electrical architecture with back up (Grid to Chips)
- c) Precision Air-conditioning System
- d) KVM switches
- e) Networking system
- f) Racks
- g) Civil infrastructure & false floor arrangement
- h) Building Management System
- i) Surveillance system
- j) Fire Management System

Now we are going towards second part of this article; how/where we diploma engineers will grab the opportunities and what is the reality...

Opportunities A:

We used to hear big IT company name like Wipro, IBM, Infosys, TCS, CTS and name a few, we usually think those companies do software programme, so we don't have opportunities, else we need to shift from core engineering. It's myth; these all institutes are having data center and sometimes they make for others. All trade engineers will be useful in respective field. We shall have to find out the wing of these companies that handles data center (internal or external).



Opportunities B:

Now coming to components level, start with UPS & battery – Almost 15~20 medium or large organizations operate in India and do have manufacturing set up in India, we can explore. Same for Precision AC – a specialized solution made for data center only. There are many companies who deal with electrical work for data center specially. Similar with racks, surveillance, fire management etc

Eaton, Schneider, Vertiv, Socomech, Consul, Stulz, Rittal, AVON, Amar Raja, Exide and many more.....

Opportunities C:

This is consultant segment, there are engineering institute, who can help in design, validation, implementation guide. Mechanical, Electrical, Electronics all core engineering group can work here.

Opportunities D:

There are organizations who take the entire data center job as turnkey project where they build from scratch, from green field. Civil & Architecture discipline candidate also explore along with other trade.

We need to explore right window of those organizations and explore possibilities; but before that we need to do homework i.e. increase our basic knowledge base in data center. There is technology upgradation in data center field also, like micro data center, enterprise, co-location/cloud data center, containerized & movable data center but if we are familiar about basic element of data center, it may be easier for us grab the opportunities and move forward.

About Author: Rahul Dey, Mechanical-2003; currently working in Vertiv, formerly known as Emerson Network Power, 15 years' experience in thermal management solution; working in product management team in Asia Pacific.