SUMMER INTERN
AT

Submitted in the partial fulfillment of the requirements for the award of degree

BACHELOR OF TECHNOLOGY IN

INFORMATION AND TECHNOLOGY

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Batch: I9

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ACKNOWLEDGEMENT

It is great pleasure for me to present this report on my Summer Training at Sopra Steria, where I learned about the working of the company, the solutions that the company provides as well as the working of Cloud Computing and the company's involvement in the same.

I got to learn some of the latest technologies in the field of Computer Science Engineering such as Cloud Computing, that is intended to take over the computing market by the year 2020.

I would like to thank all my mentors at Sopra Steria who with their instill support made this training a real success.

I would also like to present my gratitude to Mr. Akshay Thanai (Senior Technical Lead at Sopra Steria) and all members of the department for their support and the time they provided to me, their cordial and helpful behavior helped me to learn more effectively, the different aspects of the training.

I would like to express my deep appreciation to my friends and family, who have been a constant source of inspiration. I'm grateful to them for always encouraging me whenever I needed them.

Siddhant Jain
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PREFACE

This is the report of the Summer training undertaken by Siddhant Jain, pre-final year student of Bachelor of Technology in Information and Technology Engineering at Maharaja Agrasen Institute of Technology, Delhi at Sopra Steria, Noida, Uttar Pradesh.

The aim of the training is to make the trainee aware about functioning and importance of the Cloud Computing along with the implementation of various Cloud, SaaS, Paas or Iaas services used in the industry. The trainee is also trained to deal with the various day to day issues associated with the technology.

SOPRA STERIA

LEADER IN DIGITAL TRANSFORMATION

Sopra Steria, a European leader in digital transformation, provides one of the most comprehensive portfolios of end-to-end service offerings on the market: consulting, systems integration, software development, infrastructure management and business process services.

Sopra Steria is trusted by leading private and public-sector organizations to deliver successful transformation programs that address their most complex and critical business challenges. Combining high quality and performance services, added value and innovation, Sopra Steria enables its clients to make the best use of digital technology. With nearly 42,000 employees in more than 20 countries, Sopra Steria generated revenue of €3.8 billion in 2017.

HISTORY

Sopra Steria was born from the merger in 2014 of two of France's oldest digital services companies, Sopra and Steria, founded respectively in 1968 and 1969 and both characterised by a strong entrepreneurial spirit as well as a firm collective commitment to serving their clients.

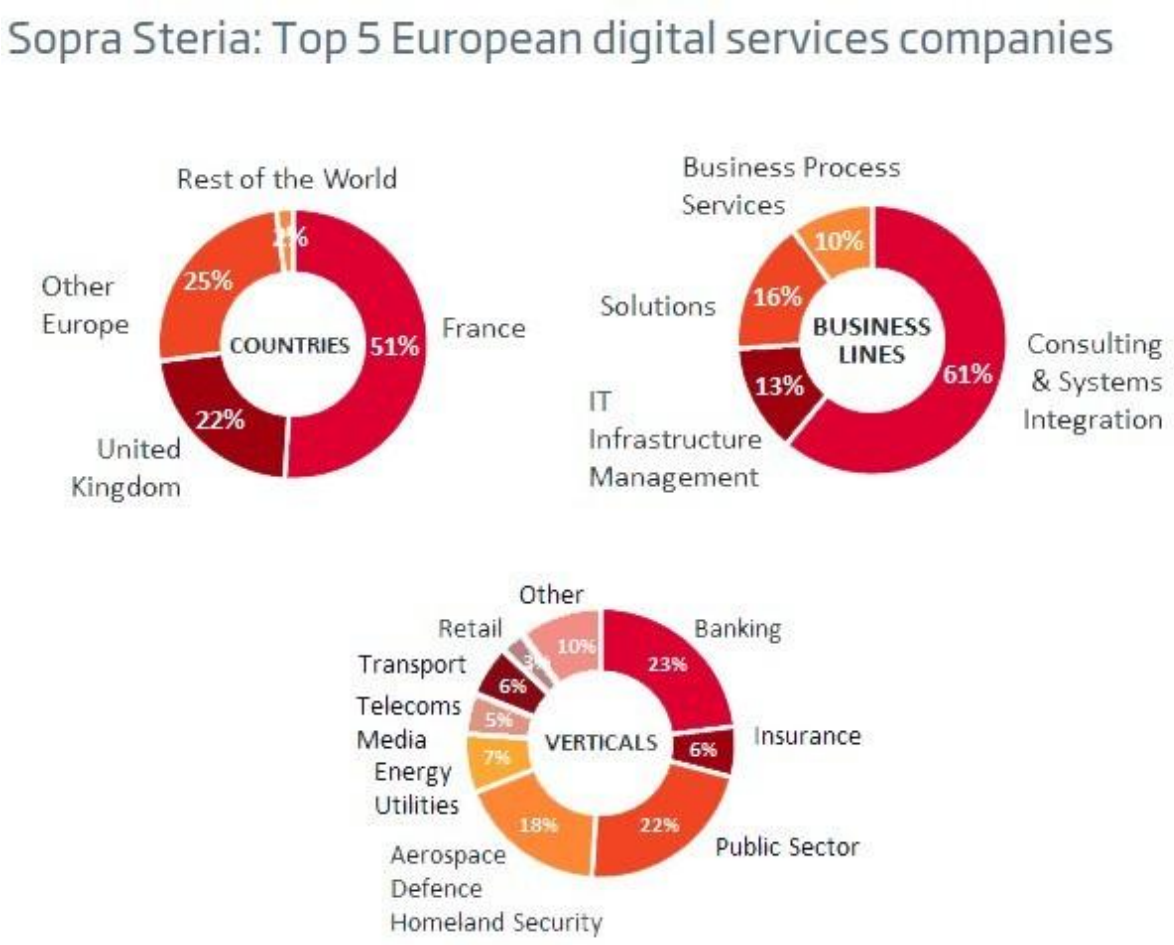
Sopra Steria has reinforced its position as a European leader in digital transformation.

OFFERINGS

Sopra Steria, provides users with solutions on various platforms as follows:

- Mobility
- Big Data
- Internet of Things
- Smart Cities
- Cloud
- Cyber Security
- Collaborative and Information Management
- Enterprise Resource Planning (ERP)
- Banking Solutions
- Human Resource Solutions
- Property Management Solutions

- PLMCIMPA



CAREER DEVELOPMENT AT SOPRA STERIA

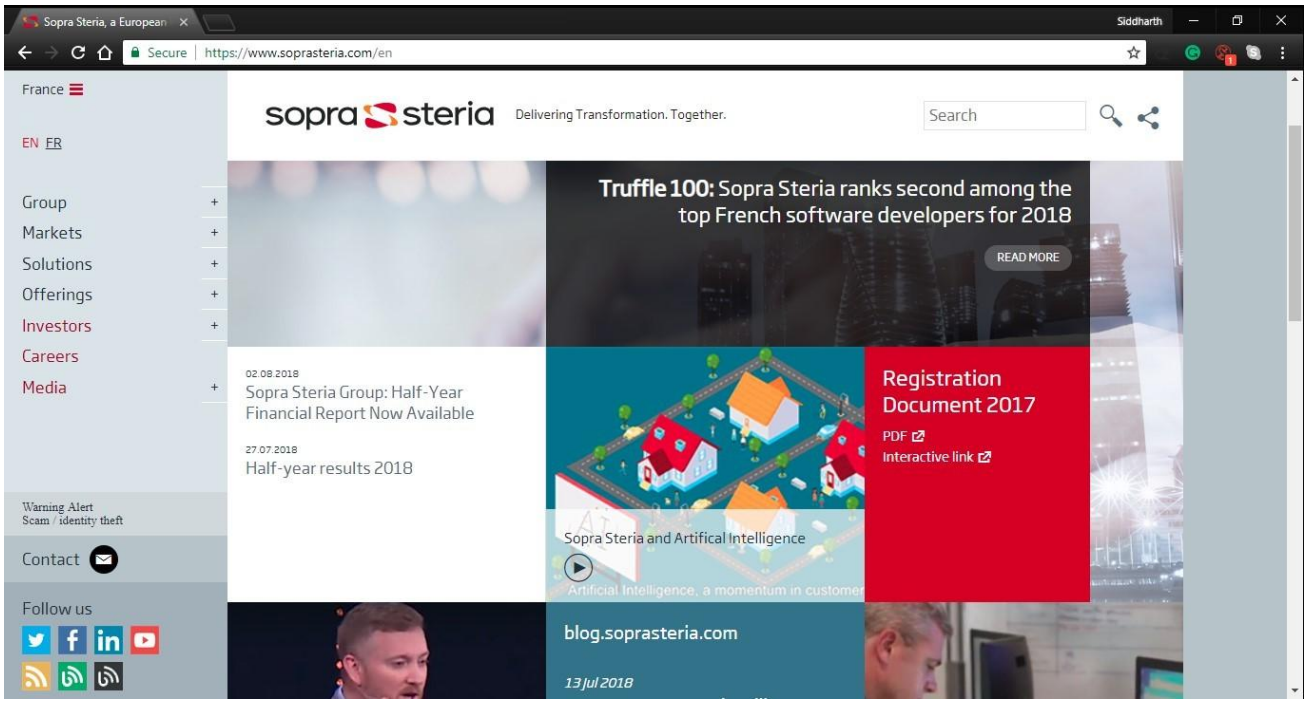
The development of skills is the key to the success of Sopra Steria Group. That is why they are committed to offering its people diverse career paths, according to their expectations and serving their needs, while maintaining a high level of motivation.

Sopra Steria recruits the right people, develop all staff to their full potential, expand both individual and team skills and encourage sharing of best practices. These objectives sit at the core of a strong Human Resources (HR) culture that's shared through all the business units and countries and is deeply rooted in their values.

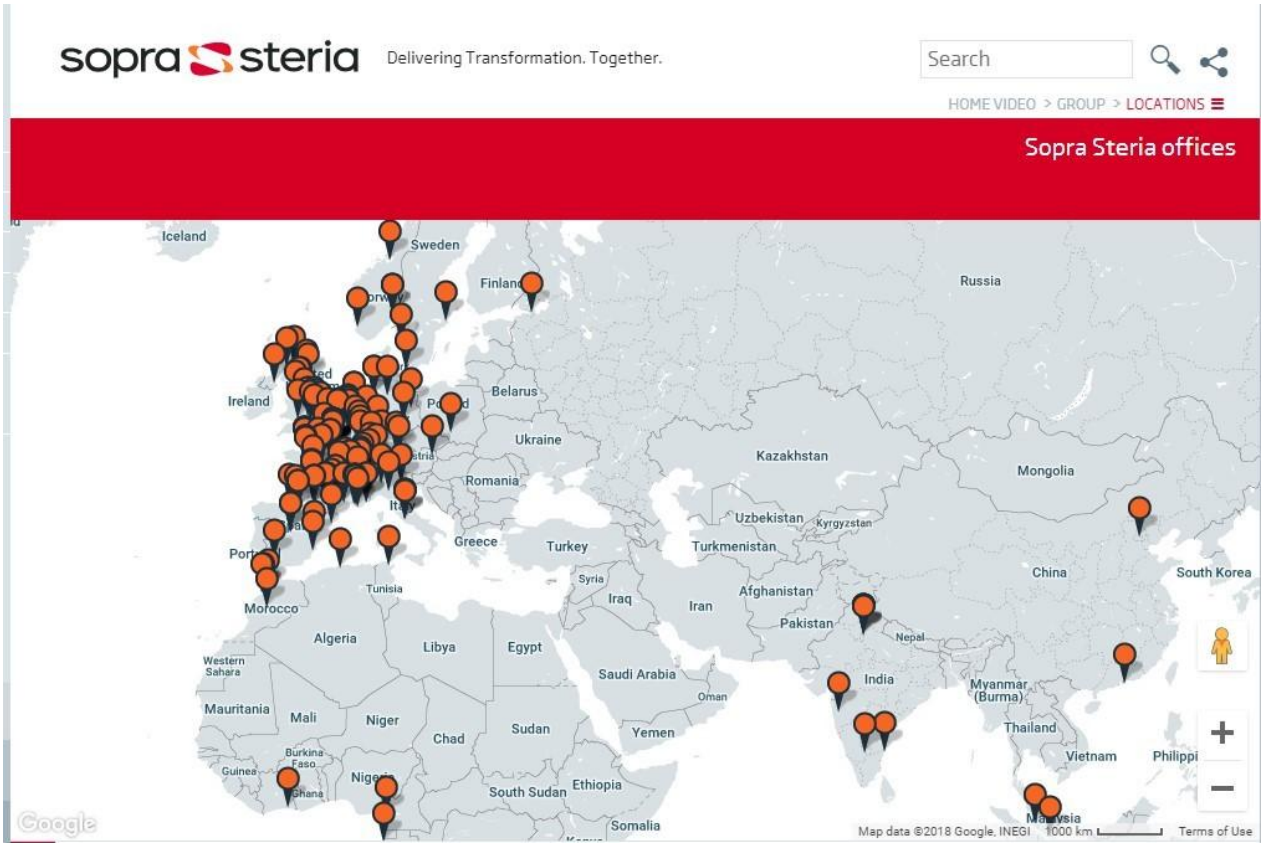
This HR dynamic is based on a close knowledge of each employee. It is guided by a comprehensive career management process. This includes key moments throughout the year allowing the evaluation of skills and performance, as well as one-to-one exchanges about career path and the decisions concerning orientation and progress.

Sopra Steria strives to develop and preserve a flexible talent pool, while ensuring the development of key competencies. These talents are in line both with the market and with our corporate ambitions.

WEBSITE



LOCATIONS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Iraq
Iran
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TRAINING DESCRIPTION

AIM

The aim of the training is to make the trainee familiar with the Cloud Computing and the various Cloud services used in the industry.

Figure 1.

CLOUD COMPUTING


Figure 2.

Simply put, cloud computing is the delivery of computing services—servers, storage, databases, networking, software, analytics and more—over the Internet ("the cloud"). Companies offering these computing services are called cloud providers and typically charge for cloud computing services based on usage, similar to how you are billed for water or electricity at home.

Whether you are running applications that share photos to millions of mobile users or you're supporting the critical operations of your business, a cloud services platform provides rapid access to flexible and low cost IT resources. With cloud computing, you don't need to make large upfront investments in hardware and spend a lot of time on the heavy lifting of managing that hardware. Instead, you can provision exactly the right type and size of computing resources you need to power your newest bright idea or operate your IT department. You can access as many resources as you need, almost instantly, and only pay for what you use.

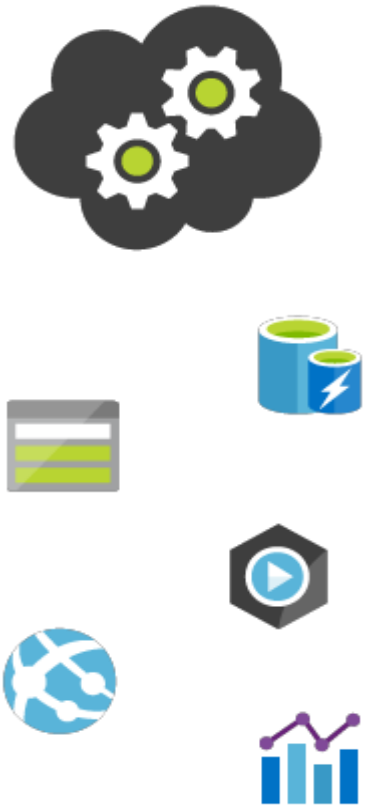


Figure 3.

Uses of cloud computing

You are probably using cloud computing right now, even if you don't realise it. If you use an online service to send email, edit documents, watch movies or TV, listen to music, play games or store pictures and other files, it is likely that cloud computing is making it all possible behind the scenes. The first cloud computing services are barely a decade old, but already a variety of organisations—from tiny start-ups to global corporations, government agencies to non-profits—are embracing the technology for all sorts of reasons. Here are a few of the things you can do with the cloud:

- Create new apps and services
- Store, back up and recover data
- Host websites and blogs
- Stream audio and video
- Deliver software on demand
- Analyse data for patterns and make predictions

Top benefits of cloud computing

Cloud computing is a big shift from the traditional way businesses think about IT resources. What is it about cloud computing? Why is cloud computing so popular? Here are 6 common reasons organizations are turning to cloud computing services:

Figure 4.

1. Cost

Cloud computing eliminates the capital expense of buying hardware and software and setting up and running on-site datacenters—the racks of servers, the round-the-clock electricity for power and cooling, the IT experts for managing the infrastructure. It adds up fast.

2. Speed

Most cloud computing services are provided self service and on demand, so even vast amounts of computing resources can be provisioned in minutes, typically with just a few mouse clicks, giving businesses a lot of flexibility and taking the pressure off capacity planning.

Figure 5.

Figure 6.

3. Global scale

The benefits of cloud computing services include the ability to scale elastically. In cloud speak, that means delivering the right amount of IT resources—for example, more or less computing power, storage, bandwidth— right when its needed and from the right geographic location.

4. Productivity

On-site datacenters typically require a lot of "racking and stacking"—hardware set up, software patching and other time-consuming IT management chores. Cloud computing removes the need for many of these tasks, so IT teams can spend time on achieving more important business goals.

Figure 7.

5. Performance

Figure 8.

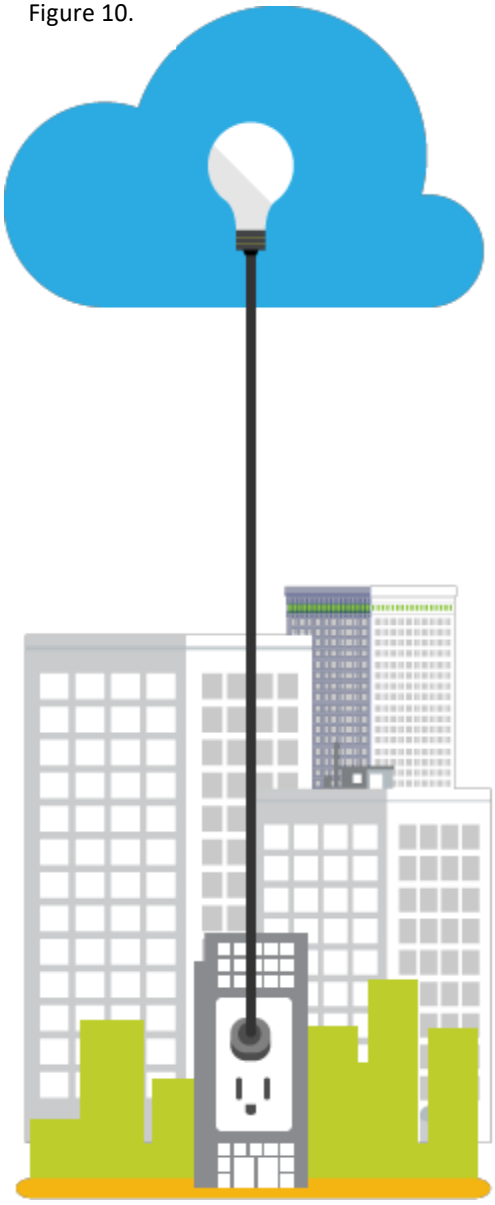
The biggest cloud computing services run on a worldwide network of secure datacenters, which are regularly upgraded to the latest generation of fast and efficient computing hardware. This offers several benefits over a single corporate datacenter, including reduced network latency for applications and greater economies of scale.

6. Reliability

Cloud computing makes data backup, disaster recovery and business continuity easier and less expensive, because data can be mirrored at multiple redundant sites on the cloud provider's network.

Figure 9.

Figure 10.



Types of cloud services: IaaS, PaaS, SaaS

Most cloud computing services fall into three broad categories: infrastructure as a service (IaaS), platform as a service (PaaS) and software as a service (SaaS). These are sometimes called the cloud computing stack, because they build on top of one another. Knowing what they are and how they are different makes it easier to accomplish your business goals.

Infrastructure-as-a-service (IaaS)

The most basic category of cloud computing services. With IaaS, you rent IT infrastructure—servers and virtual machines (VMs), storage, networks, operating systems—from a cloud provider on a pay-as-you-go basis.

Platform as a service (PaaS)

Platform-as-a-service (PaaS) refers to cloud computing services that supply an on-demand environment for developing, testing, delivering and managing software applications. PaaS is designed to make it easier for developers to quickly create web or mobile apps, without worrying about setting up or managing the underlying infrastructure of servers, storage, network and databases needed for development.

Software as a service (SaaS)

Software-as-a-service (SaaS) is a method for delivering software applications over the Internet, on demand and typically on a subscription basis. With SaaS, cloud providers host and manage the software application and underlying infrastructure and handle any maintenance, like software upgrades and security patching. Users connect to the application over the Internet, usually with a web browser on their phone, tablet or PC.

Types of cloud deployments: public, private, hybrid

Not all clouds are the same. There are three different ways to deploy cloud computing resources: public cloud, private cloud and hybrid cloud.

Public cloud

Public clouds are owned and operated by a third-party cloud service provider, which deliver their computing resources like servers and storage over the Internet. Microsoft Azure is an example of a public cloud. With a public cloud, all hardware, software and other supporting infrastructure is owned and managed by the cloud provider. You access these services and manage your account using a web browser.

Figure 11.

Private cloud

A private cloud refers to cloud computing resources used exclusively by a single business or organization. A private cloud can be physically located on the company's on-site datacenter. Some companies also pay third-party service providers to host their private cloud. A private cloud is one in which the services and infrastructure are maintained on a private network.

Figure 12.

Hybrid cloud

Hybrid clouds combine public and private clouds, bound together by technology that allows data and applications to be shared between them. By allowing data and applications to move between private and public clouds, hybrid cloud gives businesses greater flexibility and more deployment options.

Figure 13.

How cloud computing works

Cloud computing services all work a little differently, depending on the provider. But many provide a friendly, browser-based dashboard that makes it easier for IT professionals and developers to order resources and manage their accounts. Some cloud computing services are also designed to work with REST APIs and a command-line interface (CLI), giving developers multiple options.

Cloud Computing Deployment Models

CLOUD

A cloud-based application is fully deployed in the cloud and all parts of the application run in the cloud. Applications in the cloud have either been created in the cloud or have been migrated from an existing infrastructure to take advantage of the benefits of cloud computing. Cloud-based applications can be built on low-level infrastructure pieces or can use higher level services that provide abstraction from the management, architecting, and scaling requirements of core infrastructure.

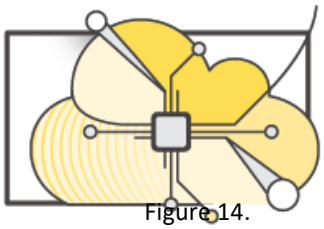


Figure 14.

HYBRID

A hybrid deployment is a way to connect infrastructure and applications between cloud-based resources and existing resources that are not located in the cloud. The most common method of hybrid deployment is between the cloud and existing on-premises infrastructure to extend, and grow, an organization's infrastructure into the cloud while connecting cloud resources to internal system.

Figure 15.

ON-PREMISES

Deploying resources on-premises, using virtualization and resource management tools, is sometimes called “private cloud”. On-premises deployment does not provide many of the benefits of cloud computing but is sometimes sought for its ability to provide dedicated resources. In most cases this deployment model is the same as legacy IT infrastructure while using application management and virtualization technologies to try and increase resource utilization.

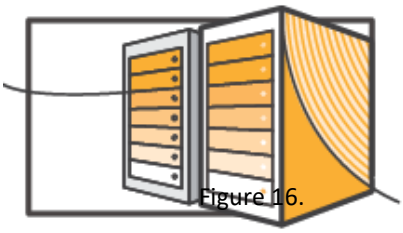


Figure 16.

MAJOR CLOUD SERVICE PROVIDERS

1. MICROSOFT AZURE

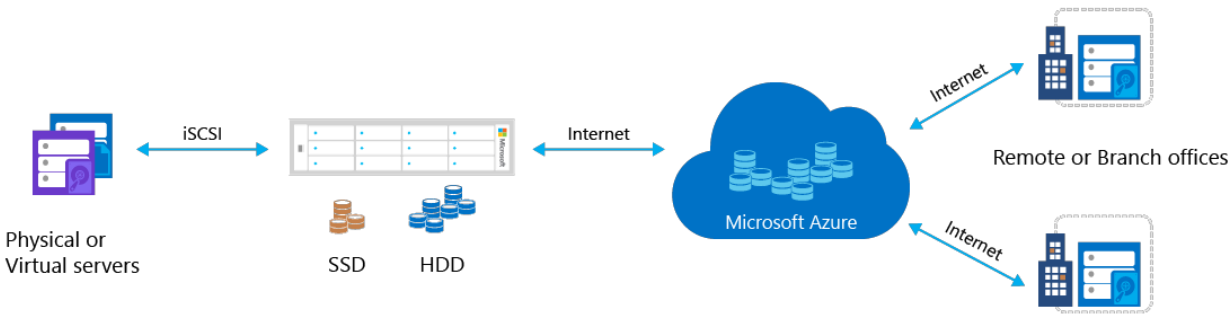


Figure 17.

Microsoft Azure is an ever-expanding set of cloud services to help your organization meet your business challenges. It is the freedom to build, manage and deploy applications on a massive, global network using your favorite tools and frameworks.

Microsoft Azure provides the following benefits due to which users might opt it:

- Productive

  It reduces time to market, by delivering features faster with over 100 end-to-end services. It has the tendency to answer to the business challenges faced with an Azure solution that brings together everything needed – related products, services and third- party related products. From DevOps to business analytics to the Internet of Things, the user can be up and running quickly with a scalable, cost-effective solution that works with their existing investments.

- Hybrid

  Develop and deploy where you want, with the only consistent hybrid cloud on the market. Extend Azure on-premises with Azure stack.

- Intelligent

  Intelligent applications can be created using powerful data and artificial intelligence services provided by Azure.

2. AMAZON WEB SERVICES (AWS)

Figure 18.

Figure 19.

Amazon Web Services (AWS) is a secure cloud services platform, offering compute power, database storage, content delivery and other functionality to help businesses scale and grow. Explore how millions of customers are currently leveraging AWS cloud products and solutions to build sophisticated applications with increased flexibility, scalability and reliability.

The AWS Cloud provides a broad set of infrastructure services, such as computing power, storage options, networking and databases, delivered as a utility: on-demand, available in seconds, with pay-as-you-go pricing.

Choosing between your existing investment in infrastructure and moving to the cloud is not a binary decision. Deep features, dedicated connectivity, identity federation and integrated tools allow you to run 'hybrid' applications across on-premises and cloud services.

From data warehousing to deployment tools, directories to content delivery, over 50 services are available in just a few mouse clicks with AWS. New services are quick to provision, without upfront capital expense, allowing enterprises, start-ups, SMBs and customers in the public sector to access the building blocks they need to respond quickly to changing business requirements.

Security in the cloud is recognized as better than on-premises. Broad security certification and accreditation, data encryption at rest and in-transit, hardware security modules and strong physical security all contribute to a more secure way to manage your business' IT infrastructure.