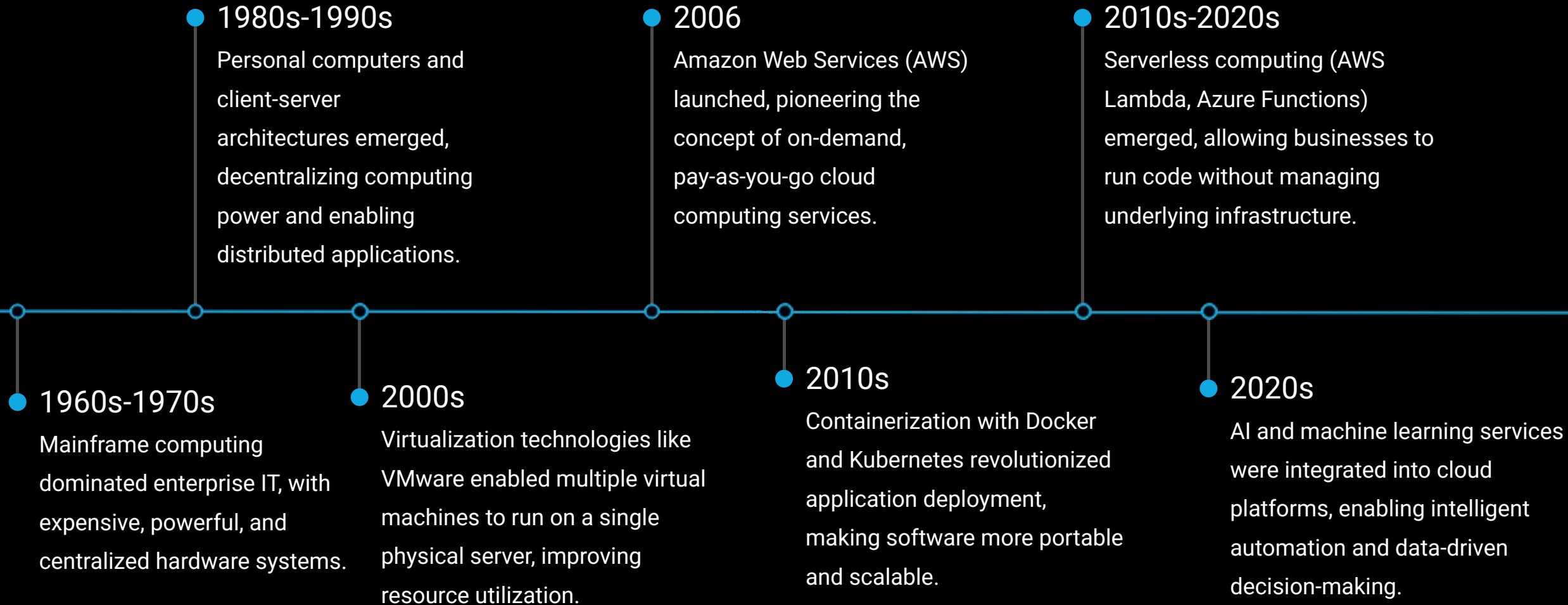




The Evolution of Cloud Computing: Redefining Business IT

Exploring how the shift towards scalable, on-demand computing has fundamentally reshaped business IT

From Mainframes to Serverless



New Technologies, New Options



From On-Premises to Virtualization

Traditional IT relied on dedicated physical hardware, leading to high infrastructure costs and rigid scalability. The rise of virtualization enabled multiple virtual machines (VMs) to run on a single physical server, improving resource utilization and efficiency.



The Emergence of Cloud Computing

Amazon Web Services (AWS) launched in 2006, popularizing the idea of pay-as-you-go computing. Cloud computing abstracted infrastructure management, allowing businesses to focus on applications rather than hardware.



Advancements in Automation & Orchestration

Containers (Docker, Kubernetes) revolutionized software deployment, making applications portable and scalable. Infrastructure as Code (IaC) tools like Terraform and AWS CloudFormation enabled automated, repeatable deployments.



The Shift to Serverless & AI-Powered Cloud

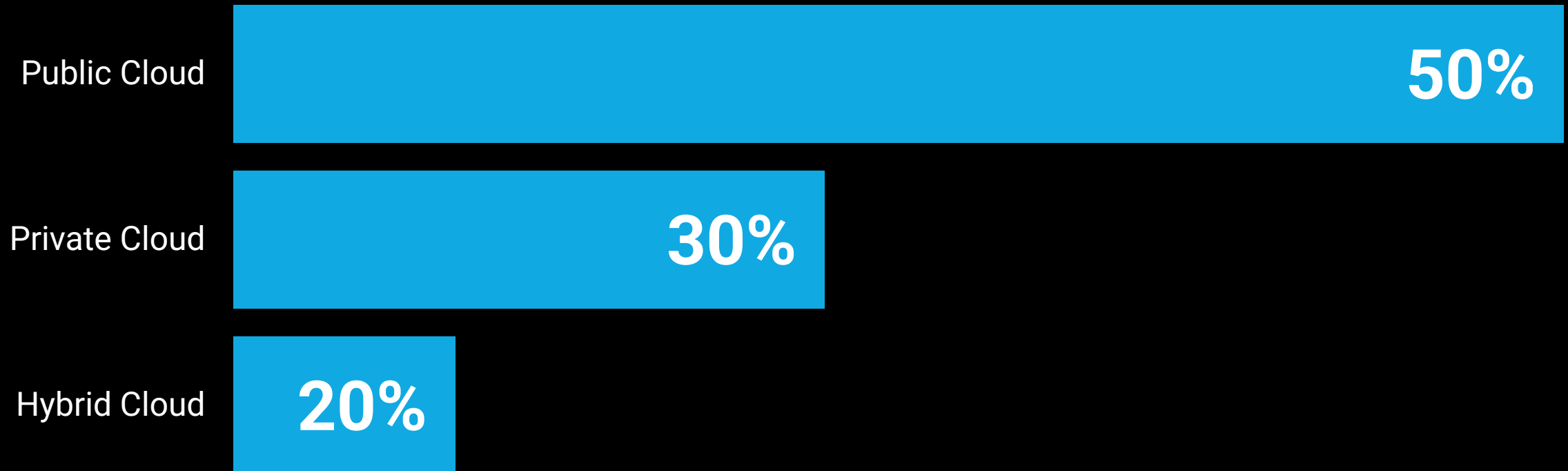
Serverless computing (AWS Lambda, Azure Functions, Google Cloud Functions) eliminates the need for server management. AI and machine learning services allow businesses to integrate intelligent automation directly into their applications.

Cloud Service Models

Service Model	Description
Infrastructure as a Service (IaaS)	Provides virtualized computing resources such as servers, storage, and networking over the internet. Consumers have control over the operating system, applications, and configurations but rely on the provider for hardware maintenance.
Platform as a Service (PaaS)	Provides a fully managed environment for developing, testing, and deploying applications. Abstracts the infrastructure layer, allowing developers to focus on coding rather than managing servers.

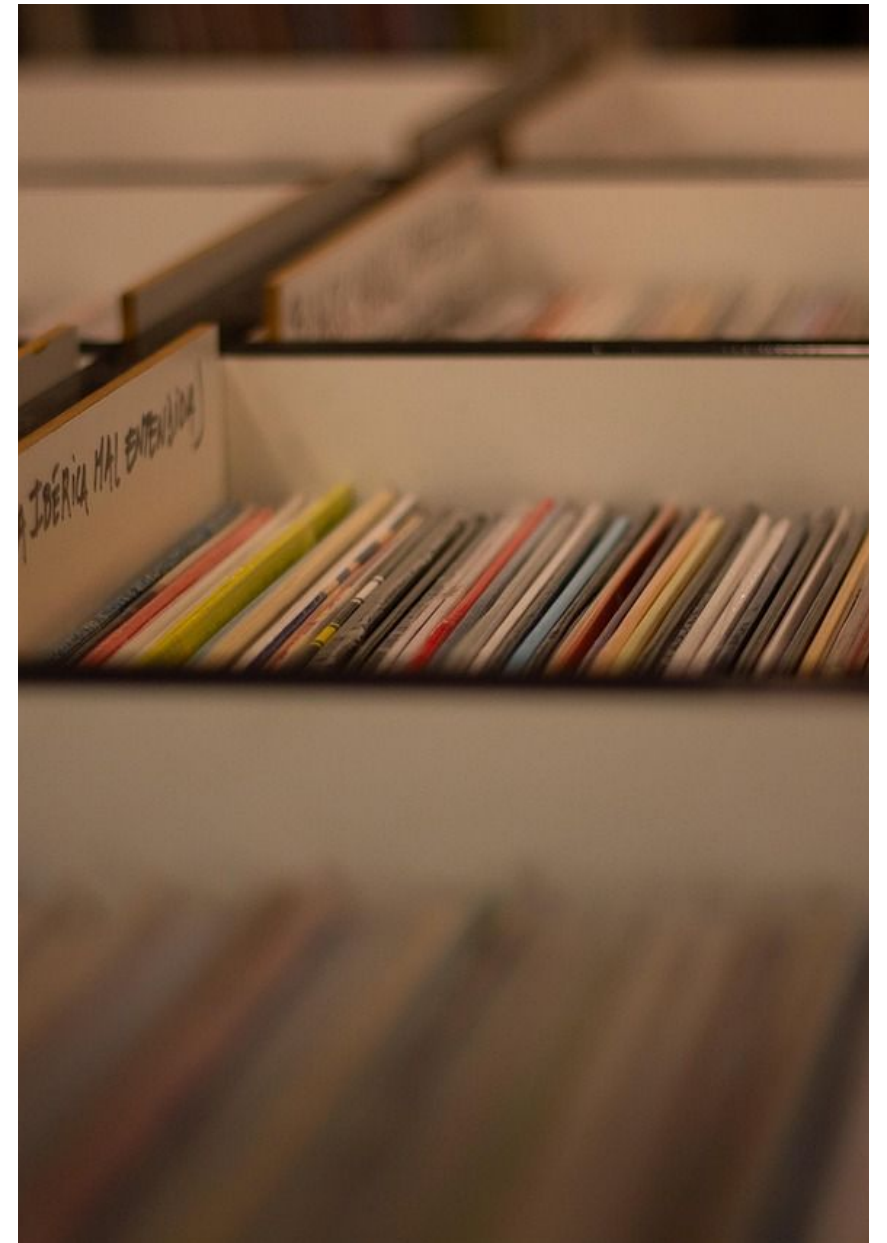
Cloud Deployment Models

Percentage of workloads deployed across different cloud models



Hybrid Cloud in Healthcare

A large healthcare provider faced strict HIPAA compliance requirements while needing to scale IT infrastructure for electronic health records (EHR). The organization leveraged a hybrid cloud approach to enhance security, compliance, and AI-driven diagnostics.



Key Cloud Service Providers



Navigating the Cloud Landscape



Assess Business Requirements

Evaluate Cloud Service Models

Determine Deployment Model

Ensure Regulatory
Compliance

The Future of Cloud Computing

Edge Computing

The rise of edge computing, which brings computing power and data processing closer to the source of data generation (e.g., IoT devices, remote locations), enabling real-time insights, reduced latency, and improved data security and privacy.

Multi-Cloud Strategies

The adoption of multi-cloud approaches, where organizations leverage multiple cloud providers (e.g., AWS, Azure, Google Cloud) to mitigate vendor lock-in, improve resilience, and optimize cost and performance for different workloads.

AI and IoT Integration

The seamless integration of artificial intelligence (AI) and the Internet of Things (IoT) in cloud environments, enabling intelligent automation, predictive analytics, and enhanced decision-making for a wide range of industries and applications.