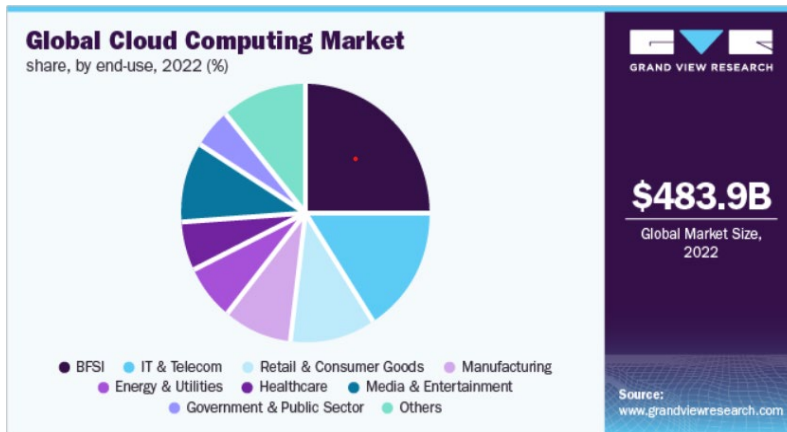


Industry Insights: Cloud Technology and Computing



The cloud will continue to play a greater, and even dominant role as they enable organizations to optimize costs, improve ROI, shift from CapEx to OpEx, and deliver value to customers in the API economy by adopting strategies such as efficient resource utilization, pay-per-use models, and automation enabled scalability, agility, and cost-effectiveness. iVedha, with over two decades of experience as a cloud service and managed services provider, has been empowering businesses to leverage the benefits of the cloud and established themselves as a thought

leader in the industry. Shared here are some key insights and observations on the evolution of cloud technology considering the contemporary digital ecosystem across various industries.

Source: [Grand View Research](http://www.grandviewresearch.com)

Leverage Cost Optimization from CapEx to OpEx

The shift from capital expenditures (CAPEX) to operating expenses (OPEX) is a significant aspect of cloud technology adoption. Traditional IT infrastructure requires significant upfront investments in hardware and software, resulting in high CAPEX. In contrast, cloud-based solutions operate on a pay-as-you-go model, allowing organizations to shift their expenses from CAPEX to OPEX.

The OPEX model provides businesses with greater financial flexibility, enabling them to allocate resources to other areas of the business. The reduced need for upfront investment also frees up capital for other purposes, such as product development or marketing. Finally, the OPEX model allows organizations to forecast and manage their expenses, as they only pay for what they use more accurately.

The Choice - Public, Private or Hybrid Cloud

Organizations should evaluate their workload requirements, data sensitivity, and regulatory compliance needs before deciding on a cloud strategy. The public cloud offers scalability and cost-effectiveness but may not meet certain security and compliance requirements. A private cloud provides greater control over data and applications but can be more expensive to set up and maintain. Hybrid cloud offers the benefits of both models, allowing organizations to balance workload requirements, cost considerations, and data sensitivity.

The choice between public, private, or hybrid cloud deployment models should be based on specific business requirements and priorities, such as **security, compliance, scalability, cost, and performance**. It is recommended to consult with cloud experts, assess the advantages and disadvantages of each model, and select a cloud deployment model that aligns with the organization's goals and objectives.

Choosing the right cloud strategy for your businesses

When choosing a cloud strategy, organizations need to consider various factors, including business needs, data privacy, regulatory requirements, and vendor lock-in risks. The multi-cloud strategy offers advantages such as flexibility, redundancy, and vendor diversity, but it also increases complexity and requires robust management and governance. Therefore, businesses should evaluate their specific requirements and carefully weigh the benefits and risks before selecting a cloud strategy, whether it's cloud-only, hybrid, or multi-cloud.

How can Cloud Service Providers enable businesses of the modern day?

The cost of cloud services is a critical issue for most organizations. Modern-day cloud service providers should be able to offer advanced AI and ML-based cloud cost optimization tools and services to help businesses visualize their multi-cloud spending, identify cost-saving opportunities, and forecast future capacity needs. They should provide real-time monitoring, cost analysis, and efficient optimization that can reduce cloud costs and maximize ROI.

Working with clients to develop customized solutions that fit their specific business needs becomes a necessity. They should also offer guidance and support throughout the security modernization process, as their application modernization journey involves a comprehensive transformation of the entire organization not just an individual system.

Challenges of moving to the cloud

Transitioning to the cloud can offer various advantages such as flexibility, cost-efficiency, and enhanced security. However, organizations must be aware of the potential obstacles they may encounter. These can include ensuring proper security measures, managing costs effectively, adhering to compliance requirements, integrating with legacy systems, and avoiding vendor lock-in. By understanding these challenges and taking proactive steps to address them, businesses can maximize the benefits of the cloud while minimizing potential risks.

Modernize Your Organization, Not Just Your Applications

Application modernization has become imperative for organizations that want to stay competitive in today's rapidly changing business landscape. By modernizing legacy applications, organizations can effectively reduce technical debt, improve scalability, enhance security, and accelerate innovation. However, modernization is a complex and challenging process that requires a careful and holistic approach.

Instead of focusing solely on application modernization in silos, organizations should consider a more comprehensive approach that encompasses the entire organization. This approach should include the establishment of a shared service delivery model and the development of a suitable cloud strategy to facilitate the delivery of these services.

By adopting a more holistic approach to modernization, organizations can realize significant benefits in terms of increased efficiency, reduced costs, and improved outcomes. Moreover, it will enable them to maintain a competitive edge by staying ahead of the curve in the face of rapidly evolving business demands.

Shared Service Model

Many organizations fail to recognize the crucial importance of evaluating shared services before embarking on their application modernization journey. Shared services, such as API Management, Site Reliability Engineering (SRE), Artificial Intelligence for IT Operations (AIOps), data monetization strategy, DevOps, and QA, are all essential for the success of modernizing applications. To fully leverage these shared services, it is crucial to establish an enterprise-wide shared service model that includes the necessary technical stack, personnel, and processes to serve application owners. It's important to note that not all shared services may be needed at once, but it's critical to roadmap the shared service model as a first-class citizen.

By adopting DevOps principles, organizations can streamline the development and deployment of modernized applications while enhancing collaboration between development and operations teams. Quality assurance practices should also be integrated into the modernization process to ensure that modernized applications meet the required quality standards and functional requirements.

In summary, recognizing the importance of shared services is critical for organizations embarking on their application modernization journey. By implementing a shared service model, organizations can improve efficiency, reduce costs, and achieve better outcomes in their modernization efforts.

Cloud Strategy

Establishing a shared service model is critical, but it's also important to consider what your cloud environment would look like. When assessing your cloud environment, there are several essential cloud assessment criteria to consider, such as cost, compliance, data retention, security, and performance, just to name a few. For instance, you may need to evaluate the level of security offered by cloud providers to ensure it meets your organization's security requirements. You may also need to consider whether the cloud provider has any certifications or compliance frameworks that align with your organization's regulatory requirements.

Additionally, evaluating the services that cloud providers offer, such as hosted container management services and API gateways, can help determine if they align with your organization's overall cloud strategy. After evaluating these criteria, you will know whether Google Cloud Platform, AWS, Azure, or some other cloud provider meets your criteria.

It's also important to note that cloud assessment is an ongoing process. As your organization's needs evolve, your cloud environment will need to adapt accordingly. Regularly reviewing and evaluating your cloud environment can help ensure it remains aligned with your organization's goals and objectives. By taking a strategic approach to cloud assessment and regularly reviewing your cloud environment, you can ensure that you are maximizing the benefits of cloud computing while minimizing costs and reducing risk.

Application Assessment

Now that the shared service model is established and the cloud strategy is in play, the application modernization process can begin. The first step in this process is the assessment stage, where organizations must identify which applications need to be modernized, why they need to be modernized, and how the modernization effort will be carried out.

During this assessment, it's crucial to identify the common business services that multiple applications can benefit from, such as customer management. By prioritizing these services based on their impact on the business and modernization efforts, organizations can avoid duplicating efforts, reduce costs, and ensure data consistency.

However, to ensure these common services work efficiently, a well-defined API strategy is necessary. This strategy should address factors such as security, accessibility, and performance. By implementing an API strategy, developers can efficiently use these common services, improving the overall efficiency of the modernization process.

In summary, identifying and prioritizing common business services that can benefit multiple applications is critical in the application modernization assessment process. Following this, developing a well-defined API strategy will ensure the efficient use of these services. By taking these steps, organizations can successfully modernize their applications and achieve their business objectives.

Application Modernization Planning

After identifying the applications to modernize and the common services to leverage, the next stage in the application modernization process is planning. During the planning stage, organizations must create a roadmap that outlines the steps and timeline for modernizing each application.

This roadmap should consider factors such as the complexity of each application, the available resources, and the impact on the business. By creating a comprehensive roadmap, organizations can avoid delays and ensure that the modernization process is carried out efficiently.

In addition, organizations should also consider the infrastructure that will be required to support modernized applications. This may involve upgrading hardware or implementing new cloud-based solutions. By planning for the necessary infrastructure, organizations can ensure that modernized applications are supported by a reliable and efficient infrastructure.

In summary, the planning stage of the application modernization process involves creating a roadmap for modernizing each application and identifying the necessary infrastructure to support the modernized applications. By carrying out this stage effectively, organizations can ensure a smooth and efficient modernization process.

Application Execution Stage

The next stage in the application modernization journey after the planning stage is the execution stage. This is where the actual modernization of the applications takes place according to the roadmap created during the planning stage.

During the execution stage, organizations will need to deploy the necessary infrastructure and carry out the steps identified in the roadmap. This may involve re-architecting applications, migrating to cloud-based solutions, implementing new technologies, and integrating with other systems.

It's important to note that the execution stage may be complex and may involve multiple teams and stakeholders. Effective communication and collaboration among these teams is crucial to ensure a successful modernization effort.

In summary, the execution stage of the application modernization process involves the actual modernization of the applications according to the roadmap created during the planning stage. This stage may be complex and involve multiple teams and stakeholders, requiring effective communication and collaboration.

In conclusion, the application modernization journey is not just about upgrading individual applications - it's a holistic transformation of the entire organization. By taking a comprehensive view, organizations can leverage the shared service model, prioritize common business services, and implement an effective cloud strategy to streamline the modernization process. While reducing costs, developing a data monetization strategy, establishing an API strategy, and implementing a shared model strategy are important goals for some organizations, it's important to note that the specific goals for modernization efforts may vary depending on the unique business needs, objectives, and priorities of each organization. Ultimately, successful application modernization requires a tailored approach that aligns with the organization's overall strategy and goals.

Importance of Cloud Security Modernization

The cloud has revolutionized the way businesses operate, providing agility, scalability, Mobility, and cost savings. However, with this new technology comes new security challenges. As businesses increasingly move their operations to the cloud, they must also modernize their security strategies to protect their data and applications in this new environment.

The hybrid security model, tools, technologies, processes, and responsibility models are different. It is important to understand the Cloud computing framework for understanding the division of security responsibilities between cloud service providers and their customers. By understanding these responsibilities, both providers and customers can work together to ensure that the cloud environment is secure and compliant with relevant regulations and industry standards.

The Changing Landscape of Cyber Threats

The threat landscape has evolved significantly over the past few years, and traditional security solutions are no longer sufficient to protect against modern cyber threats. With the rise of sophisticated attacks such as ransomware, phishing, and advanced persistent threats (APTs), organizations must modernize their security strategies to keep up with the evolving threat landscape.

Cloud Security Risks

Moving to the cloud introduces new security risks, including data breaches, unauthorized access, and configuration errors. Cloud service providers typically have robust security measures in place, but organizations must also take responsibility for securing their own data, access, and applications in the cloud.

The Shared Responsibility Model

Cloud security is a shared responsibility between the cloud service provider and the organization. The cloud service provider is responsible for securing the cloud infrastructure, while the organization is responsible for securing their own data and applications in the cloud. This means that organizations must implement their own security controls, such as access control, data encryption, and security monitoring, to protect their data and applications in the cloud.

The Benefits of Security Modernization

Security modernization involves adopting new security technologies and strategies to protect against modern cyber threats. By modernizing their security strategies, organizations can benefit from improved threat detection and response, better visibility into their security posture, and greater protection for their data and applications in the cloud.

Security Modernization Strategies in the cloud era:

- **Adopt a Zero Trust Security Model:** A Zero Trust security model assumes that every user and device is a potential threat and requires authentication and authorization before granting access to resources.
- **Implement Multi-Factor Authentication (MFA):** MFA adds an extra layer of security by requiring users to provide additional authentication factors, such as a fingerprint or a code sent to a mobile device, before accessing resources.
- **Encrypt Data:** Encryption ensures that data is protected both in transit and at rest, preventing unauthorized access to sensitive data.
- **Implement Security Monitoring:** Security monitoring solutions, such as security information and event management (SIEM) and intrusion detection and prevention systems (IDPS), can help detect and respond to security incidents in real-time.
- **Implement Compliance Automation:** Compliance automation tools can help organizations ensure that their security strategies are compliant with industry and regulatory standards.

Conclusion

In the cloud era, security modernization is essential to protect against modern cyber threats and ensure the safety of data and applications in the cloud. Organizations must adopt new security strategies and technologies to keep up with the evolving threat landscape and the shared responsibility model of cloud security. By implementing a comprehensive security strategy that includes Zero Trust, MFA, data encryption, security monitoring, and compliance automation, organizations can improve their security posture and protect their data and applications in the cloud.

FinOps Consulting

In today's rapidly evolving digital landscape, organizations are increasingly adopting cloud-native application development to leverage the full potential of cloud computing. This approach enables the creation of scalable, resilient, and cost-effective applications. However, managing cloud costs and optimizing resource usage is critical to maximizing the return on investment (ROI) in this new environment. This is where FinOps, or Financial Operations, comes into play, providing a framework and set of practices for managing cloud expenses, fostering financial accountability, and driving operational efficiency throughout the development process.

Implementing FinOps in the development lifecycle offers benefits such as **cost optimization, improved collaboration between finance and development teams, enhanced agility, and increased transparency in cloud costs and resource usage.**

This allows developers to make data-driven decisions on resource allocation, fosters better communication, and enables organizations to respond to changing market conditions more swiftly. Ultimately, implementing FinOps can help reduce wastage, ensure cost-effective solutions, and deliver innovative products and services.

Cloud Cost Optimization, AI/MLOps

Cloud cost optimization is an essential practice for organizations to optimize their cloud usage and minimize costs while still maintaining high performance and availability. Some of the most common cloud pain points which enterprises usually face may be as below:

- Not getting the most out of your cloud
- Rising cloud costs due to inefficient utilization
- Uncertainty over multi-cloud spending.
- Lack of visibility into the costs of specific cloud in a multi-cloud environment
- Inability to optimize cloud costs to fit business needs.

By providing you with the tools and services to monitor and optimize cloud usage, a service provider such as iVedha can help you get the most out of your cloud. This can include real-time monitoring, cost analysis, and optimization tools that provide insights into usage patterns and identify areas of potential savings.

Organizations can also optimize their cloud costs by monitoring and optimizing resource usage, such as storage, network, and compute resources. By identifying unused resources and rightsizing instances, organizations can reduce their overall cloud usage and minimize costs.

Our unique AI and ML-based cloud cost optimization tool can save your cloud bill substantially. It can help you visualize your multi-cloud spending. The state-of-the-art recommender system and forecasting engine can help you plan capacity for the future. Additionally, we can provide you with access to experts who can provide advice and best practices on how to get the most out of your cloud.

How the public sector can leverage Large Language Models

Large language models are deep learning techniques used to analyze natural language data. They use a variety of techniques, such as neural networks and deep learning algorithms, to analyze large amounts of text data and identify patterns that can be used to make predictions or gain insights.

Public Sector organizations can use large language models to improve their services in a variety of ways, including:

- **Improved detection of fraud and compliance violations:** Large language models can be used to improve the detection of fraud and compliance violations by government agencies. By analyzing large amounts of text data, language models can identify patterns that may indicate fraudulent activity.
- **Improved customer service:** Language models can be used to improve the customer service experience by providing more accurate and natural language interactions. For example, language models can be used to develop automated customer service bots that can respond to inquiries more quickly and accurately than a human customer service representative.
- **Improved decision-making:** Large language models can provide insights into the text data that can be used to make better decisions. For example, they can be used to analyze large volumes of comments and feedback to develop more informed policies.
- **Improved public safety:** Language models can be used to better detect potential threats by analyzing text data in real time. This can help governments to detect and respond to potential threats more quickly and effectively.
- **Improved natural language understanding:** Large language models can be used to develop automated systems that understand natural language input more accurately. This can help to improve the user experience by making interactions with government systems easier and more natural.

Conclusion

In conclusion, having clarity of objective and a distinct roadmap is of paramount importance while initiating or accelerating your digital transformation journey. In this case, a single frame doesn't fit multiple scenarios, so we need unique strategies tailor-made for each business. What this calls for is a cloud service provider who has enough experience and expertise that businesses can rely on to enjoy the benefits of the cloud while simultaneously innovating and staying ahead of the competition in the digital age.

Backed by two decades of experience, iVedha is focused on being a Cloud First, API First, AI/ML Ops First, and Security First provider that is vendor and technology-agnostic. As the third wave of digital transformation takes shape, iVedha is dedicated to being Futuristic, Cloud Forward-Thinking, and client obsessed by helping businesses to Connect, Manage, Secure, and Monetize their data. The company also embraces Opensource technologies, providing total freedom and control to its clients.

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