



Integrating Cloud and Mainframe: Rocket Software's Vision for Data-Driven Futures

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Executive Summary

In today's fast-paced technological landscape, organizations face the daunting task of staying ahead in an environment characterized by unparalleled innovation. It necessitates a continual re-evaluation of technological infrastructures due to the relentless pace of innovation. To successfully navigate through this, organizations must meticulously assess their modernization acceleration.

The mainframe stands at the forefront of this technological change, playing a crucial role in facilitating digital transformation. As businesses start their modernization journey, understanding the key role of the mainframe becomes imperative. It lays the groundwork for transformation in an era marked by enhanced efficiency, tailor-made experiences, and innovation. Infrastructure decisions become paramount as organizations aim to align themselves with the changing marketplace.

Examining the fast-paced modernization scene is just as vital as acknowledging the central role the mainframe has in guiding the digital transformation path. Informed decisions about infrastructure have emerged as a strategic priority, empowering organizations to keep up with market shifts and even take an assertive role in shaping their technological futures in an era where innovation unlocks success.

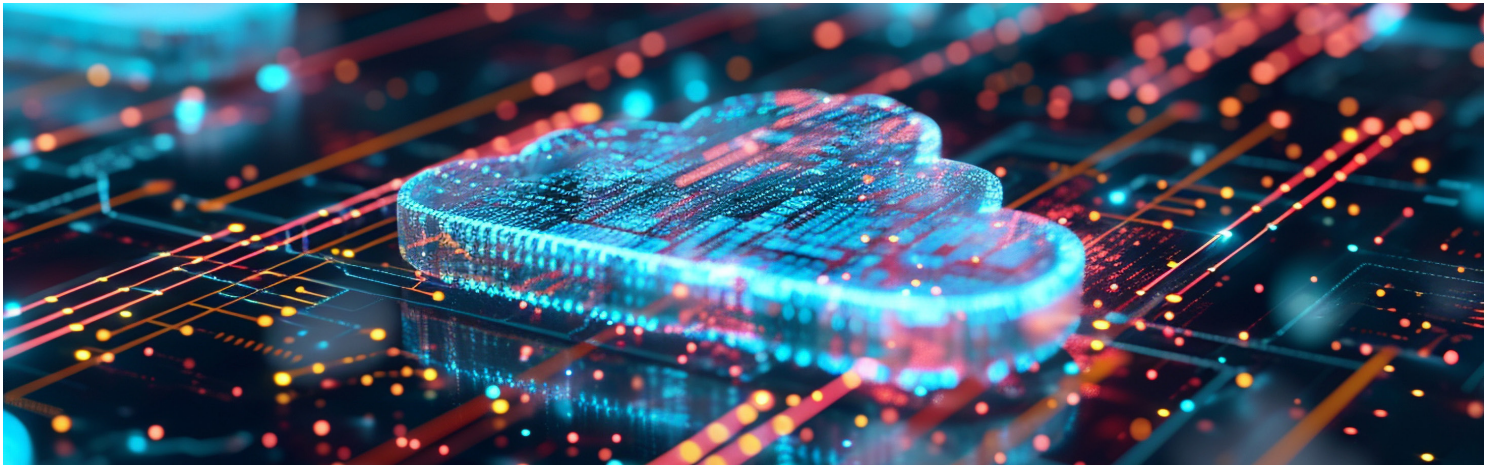
Rapid Infrastructure Innovation

As companies start their modernization journey, the pace of infrastructure innovation turns out to be an essential key to success. Modernization provides effective procedures, personalized customer experiences, and the invention of innovative products and services. The choice to sustain and upgrade the mainframe is a tactical one, impacting the whole company. Hybrid models are an attractive alternative, offering the required versatility for innovation while utilizing the mainframe's core capabilities. Infrastructure holds a pivotal role in propelling the customer journey, underscoring the importance of picking the right groundwork for maximum efficiency.

Mainframe as a Catalyst for Change

The mainframe, previously seen as the backbone of traditional business operation, has become a catalyst for change in the digital era. Its capability to decipher transaction insights, offer mission-critical applications at scale, and bring a radical shift to conventional business models puts it at the forefront of infrastructure platforms. To fully exploit the mainframe's potential, organizations must focus on efficient, cost-effective, and secure data access. The modern mainframe aids in digital transformation and leverages its capabilities to drive organizational changes through:

- **Cost Efficiency in Operations:** It results in more streamlined operations while reducing ongoing operational expenses through enhanced resource usage, energy conservation, and refined processes.
- **Legacy System Maintenance Savings:** Legacy systems generally have significant maintenance costs. Modernization allows organizations to integrate or replace these systems, cutting down on maintenance costs.
- **Increased Processing Power:** With enhanced processing abilities, the mainframe enables quicker transaction processing and data analysis.
- **Scalability:** A scalable architecture ensures that the mainframe can handle increasing workloads and adapt to evolving business requirements.
- **Enhanced Security Features:** Implementing advanced security features helps to safeguard confidential data and meet compliance standards.
- **Adaptability to Changing Technologies:** Mainframes that employ new strategies are more adaptable to integrate with emerging technologies like cloud computing, AI, and machine learning. This provides more agility in responding to market fluctuations.
- **Improved Responsiveness:** Adopting a modern approach to mainframes ensures quicker response times for end-users, enhancing their overall experience.
- **Enhanced Resilience:** Modern mainframes often incorporate advanced features for business continuity and disaster recovery, ensuring minimal downtime in the event of disruptions.
- **Data Replication and Backup:** Assisting in the deployment of better data replication and backup strategies, mainframes protect critical business data.
- **Support for Digital Transformation:** Aligning mainframe systems with broader digital transformation initiatives, enabling businesses to stay competitive in the digital landscape.
- **Training and Skill Development:** Modernization initiatives often provide opportunities for existing staff to acquire new skills, enabling professional development and job satisfaction.
- **Protection of Past Investments:** Increasing the lifespan of existing mainframe investments, ensuring ongoing ROI and preserving valuable business logic and data.



Hybrid Data Models

The evolution of data storage models indicates an intersection where the efficiency of cloud object storage converges with the historical reliance on traditional mainframe tape models. As cloud object storage becomes more prevalent, mainly due to its efficacy in backup procedures, organizations find themselves weighing compatibility and performance stemming from the mainframe's tape-focused infrastructure. This juncture necessitates an exploration into the hybrid data models, reflecting the changing tides of data storage models.

Cloud object storage, known for its scalability, accessibility, and cost-effectiveness, presents itself as an alternative to the conventional tape models that have been standard in mainframe environments for decades. While the cloud provides efficiency in backup processes and caters to the need for data accessibility, the mainframe's historical dependence on tape brings unique integration and performance optimization challenges.

Hybrid data models are the next logical step for organizations aiming to transform their infrastructure and seamlessly integrate into the data-driven future. This involves a careful balancing act - reconciling the efficiency gains of cloud object storage with the legacy considerations of mainframe tape systems. Organizations must overcome questions of data migration, ensuring seamless interoperability between the old and the new, while tackling potential disparities in performance outcomes.

Replication and synchronization play a crucial role in hybrid data models. Replication ensures that data is copied across multiple locations, providing redundancy and fault tolerance. Synchronization ensures that data across different storage systems is kept consistent and up-to-date. This is essential for maintaining data integrity and availability in hybrid environments.

Despite challenges, the adoption of hybrid data models offers plenty of opportunities. It enables organizations to protect the valuable data stored on mainframe tapes while leveraging the benefits of cloud-based storage for operations. This blend of traditional and contemporary storage solutions sets the stage for enhanced agility, improved data accessibility, and streamlined backup processes, allowing organizations to handle the changing data storage environment proactively and resiliently.

As organizations undertake the transition to a data-driven future, the strategic adoption of hybrid data models proves to be a game changer. Not only does it recognize the importance of mainframe tape systems, but it also leverages the capabilities of cloud object storage. By adopting this approach, organizations can tackle the challenges related to evolving storage requirements, facilitating a smooth transition that aligns with the needs of modern business environments.



The Role of DORA in Europe and How This Framework Extends Globally

Operational resilience is a significant concern for executives, especially in highly regulated industries, as they face an increasingly complex environment with potential challenges. The Deployment and Operations Resilience Alliance (DORA) framework, which is gaining global acceptance, responds to these concerns by fostering collaboration among industry leaders, policymakers, and technology specialists. DORA functions as a platform for exchanging ideas, establishing best practices, and collectively tackling the difficulties of maintaining operational continuity.

Executives should prioritize operational resilience, and DORA offers a beneficial forum for staying updated about emerging threats, industry best practices, and the changing regulatory environment. The alliance assists in the exchange of knowledge, allowing executives to make informed decisions to shield their organizations from disruptions. The significance of mission-critical systems, notably the mainframe, is paramount within this context. The mainframe, as a pillar of operational continuity and regulatory compliance, necessitates continuous focus in any resilience plan.

Understanding the connection between operational resilience, regulatory compliance, and the role of the mainframe is critical. Executives can actively contribute to resilience by investing in technologies, applying best practices, and aligning strategies with emerging industry standards. Involvement in initiatives such as DORA allows executives to strengthen their organizations against possible disruptions and navigate the complexities of operational resilience with confidence, underscoring a proactive and cooperative approach to ensure business continuity.

Even further, the hybrid data models become an important factor with their focus on data accessibility, disaster recovery, data preservation, audit trails, geographical redundancies, and replication/syncing, which ultimately support operational resiliency. The numerous features like mainframe tape systems and cloud object storage offer organizations enhanced data security, availability, and compliance with regulations. Moreover, the use of data virtualization offers the added advantage of safeguarding sensitive data within the mainframe resulting in reduced risks of data hacks, privacy infringements, and regulatory penalties.

Incorporating hybrid data models, along with active involvement in programs like DORA, allows executives the ability to effectively prioritize and manage operational resilience. By recognizing the significance of the mainframe, investing in relevant technologies, and aligning with industry standards, organizations can handle the complexities related to operational resiliency. This equips them with improved business continuity even in the face of unexpected disruptions.

Challenges of Current Approaches

In an era marked by technological advancements and evolving business landscapes, organizations are presented with multifaceted challenges that require strategic planning and innovation. Several essential factors shape the technology ecosystem and underscore the importance for organizational adaptation to rising technology costs, shrinking budgets, the complexities of managing technological infrastructures, the demand for business self-service capabilities, and the pressure to expedite project timelines. Each aspect underscores the vital need for strategic decision-making and proactive measures.

Shrinking Budgets and Increasing Costs

In an environment where the expenses of technology are increasing, organizations face the dual challenges of escalating costs and shrinking budgets. This scenario calls for strategic financial planning and decision-making to ensure that essential technology upgrades align with the priorities of the organization. As these organizations aim to optimize their technology investments, the issue is not just about staying within budget restrictions, but also about making strategic resource allocations to initiatives that improve operational efficiency and innovation. The dilemma they face is two-fold: organizations must deal with the financial limitations set by tightening budgets on the one hand and navigate the complex landscape of a technology ecosystem where prices continue to surge on the other.

To overcome the intricate nature of budget restrictions and escalating costs, a comprehensive approach is required. Organizations should carry out in-depth evaluations of their technology infrastructure, identifying potential areas for optimization and cost savings without sacrificing necessary functions. This involves giving precedence to technology investments that offer the highest returns and counterbalancing short-term budget concerns with long-term benefits.

Technological Complexity Management

Advancements in technology lead to a proportional rise in infrastructure complexity, presenting a challenge for senior IT professionals. The need for a sophisticated management strategy becomes essential to align technology infrastructure with evolving business requisites. Important points to consider involve the following:

Simplify and Rationalize the Technology Portfolio

To effectively manage technological complexity, organizations should begin with a comprehensive assessment and inventory of their existing technology portfolio. This process involves categorizing applications, systems, and infrastructure components based on their business impact and criticality. Reducing complexity includes the identification and elimination of redundant or outdated technologies, streamlining the portfolio by retiring systems that no longer align with business objectives. Standardization further plays a pivotal role, with the implementation of technology and infrastructure standards aimed at reducing diversity. By standardizing platforms, tools, and technologies, organizations can simplify management and support processes, cultivating a more streamlined and efficient technological landscape.

Implement Robust IT Governance

Establishing a clear governance structure within the IT organization is key. This development involves defining roles, responsibilities, and decision-making processes to ensure accountability and prevent siloed decision-making. Prioritizing technology initiatives based on alignment with business goals is crucial, requiring the implementation of a streamlined project and portfolio management process. This approach ensures that IT projects contribute to overall business objectives.



Furthermore, conducting regular reviews and audits of the technology landscape is essential to confirm alignment with the organization's strategy. Identifying and addressing discrepancies through reviews and audits helps maintain alignment and prevents the accumulation of unnecessary complexity within the technological ecosystem.

Invest in Modernization and Integration

Organizations should prioritize legacy modernization through a phased approach, which may include migration to cloud-based solutions, adopting microservices architecture, or implementing containerization. This strategic modernization not only promotes agility but also lessens the complexities associated with outdated technologies. Embracing agile development practices, such as DevOps, is essential for enhancing flexibility and responsiveness to changing business requirements. Iterative development, testing, and deployment utilizing agile practices can effectively reduce complexities associated with large-scale, monolithic projects, leading to a more efficient and adaptable tech environment.

By combining these strategies, organizations can proactively manage and mitigate technological complexity. Simplification of the technology portfolio, implementing solid governance structures, and investing in modernization and integration are fundamental components for achieving a streamlined and functional technological landscape.

Providing Business Self-Service Without Giving Up Control and Security

The landscape of business self-service capabilities places organizations in a position where they must strike a balance between user empowerment and the preservation of control and security. The challenge lies in empowering users to access and utilize resources autonomously while adhering to a framework of organizational control and security measures. This necessitates a strategic method that promotes user autonomy and efficiency, while also emphasizing the vital need to protect sensitive information and preserve the IT infrastructure's overarching integrity. The focus should be on establishing a setting where self-service features are in harmony with company objectives, ensuring capabilities to enhance productivity within the confines of a well-defined and secure operational framework.

Pressure to Move Faster to Get Projects Done

Organizations are pressured by the competitive environment to accelerate project timelines, promoting an atmosphere of productivity without undermining the quality. CIOs struggle with balancing the desire to meet market expectations and the necessity to execute projects quickly and accurately. Meeting this challenge calls for organizations to understand their ongoing strategic operations while retaining the capacity to adjust during times of evolution and expansion.

Ability to Scale

In the face of rising data volumes and expanding user bases, ensuring systems can scale effectively becomes a vital necessity. CIOs must formulate strategies for scalable infrastructure that can adapt to evolving organizational requirements:

- **Flexible Architecture and Modular Design:** Constructing a tech infrastructure that is adaptable and modular is crucial for scalability. Traditional monolithic architectures may find it difficult to efficiently cater to heightened demands.
- **Proactive Capacity Planning and Monitoring:** Determining future requirements and planning for infrastructure capacity is fundamental for scalability. Failing to prepare for increased loads can result in performance bottlenecks and system failures

By embracing a flexible architecture with a modular design and implementing proactive capacity planning and monitoring, organizations can build scalable technology infrastructures that adapt to increased demands and support sustained growth.

CIOs Tend to Be Averse to Change Due to How Easy It Is to Miss Requirements and the Increased Risks

Executive teams may be averse to change due to the inherent risks and challenges involved in implementation. The fear of potential risks that come with overlooking crucial requirements and increased security vulnerabilities ends up resulting in the very situation that organizations aim to avoid. Refusing to embrace change and keep up with the evolving modernized mainframe leaves organizations at risk of outdated technology and inefficiency, heightened security vulnerabilities, limited scalability and flexibility, lack of skilled personnel and hiring challenges, higher maintenance costs, limited integration capabilities, and compliance and regulatory risks. Clinging to the status quo to escape risk makes an organization prone to becoming obsolete.



Conclusion and Looking Ahead

In addressing the data-driven future and comparing options to modernize, the overarching theme is clear: the need for strategic decision-making, adaptability, and proactive measures to navigate the complexities of the evolving technology landscape. Organizations that embrace innovation and make informed choices stand ready to not only overcome challenges but also thrive in the dynamic and competitive business environment.

Rocket Software plays a pivotal role in championing the integration of foundational systems with contemporary cloud ecosystems, thereby illuminating the obscured segments of data that are critical for propelling analytics, artificial intelligence/machine learning (AI/ML) modeling, the Internet of Things (IoT), and an array of other innovative initiatives.

Rocket Software's contribution is not confined to mere integration; it extends to providing a comprehensive suite in data technology reach and unparalleled depth in data management support. Rocket Software equips its customers with a robust arsenal of reliable data, positioning them for success in the digital era. Most crucially, Rocket Software's approach is characterized by a skillful harmonization of the triple constraints of costs, risk, and performance. This delicate balancing act ensures that organizations can pursue data-driven excellence with efficiency. By navigating these complexities, Rocket Software emerges not just as a technology provider but as a strategic partner, guiding organizations toward a future where data is not just a resource but a catalyst for transformative success. As businesses navigate the evolving landscape of data, Rocket Software stands as a beacon, illuminating the path toward a harmonious and efficient pursuit of excellence in the data-driven era.

Important Information About this Report

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Rocket Software help customers in all industries solve their most complex IT challenges, across infrastructure, data, and applications with solutions that simplify, not disrupt. Regardless of industry or location, help to modernize in place with a hybrid cloud strategy to accelerate and optimize your modernization journey while meeting evolving market needs.



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The Futurum Group is an independent research, analysis, and advisory firm, focused on digital innovation and market-disrupting technologies and trends. Every day our analysts, researchers, and advisors help business leaders from around the world anticipate tectonic shifts in their industries and leverage disruptive innovation to either gain or maintain a competitive advantage in their markets.



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