

The growing complexity of the application landscape in an organization means container orchestration and management platforms are becoming inevitable for organizations seeking to be agile and speed up their digital journeys. This paper examines the critical importance of accelerated app development and deployment in helping organizations to remain relevant amid widespread uncertainty. The paper also emphasizes the need for a structured approach to application transformation and briefly highlights the VMware Tanzu platform's role in this endeavor.

Application Agility

Building, Running, and Managing Applications Rapidly Is Imperative in the Digital-First World

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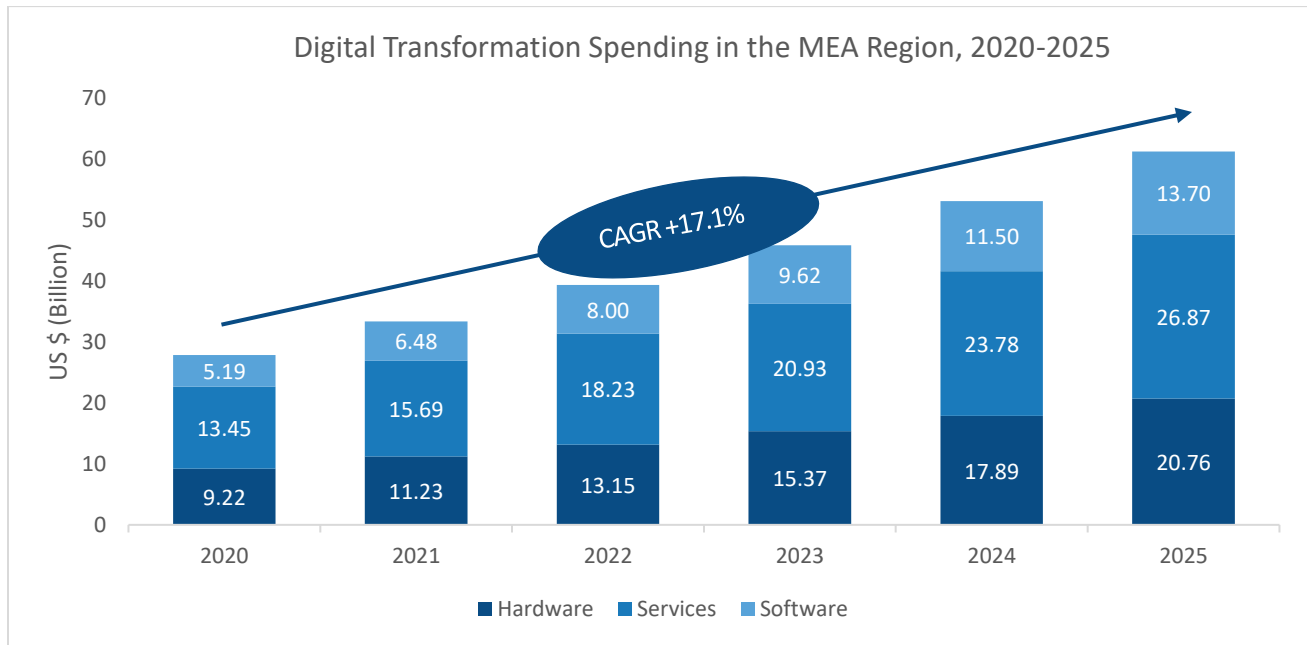
Executive Summary

State of Digital Transformation in the Middle East and Africa

In the modern age, digital transformation (DX) is the only way forward for improving business processes, retaining customers, and strengthening resiliency plans. The Middle East and Africa (MEA) region is no exception. According to IDC's latest *CIO Digital Transformation Survey*, conducted in the MEA region, 43% of organizations had already implemented a digital-first strategy before the pandemic. However, over half the respondents highlighted that the pandemic either accelerated their digital-first approach or accentuated the need for such an approach.

Most organizations are encouraging and rapidly incorporating digital transformation into every aspect of their business. The digitalization of operations led to cost efficiencies for almost 60% of respondents, while nearly half experienced a value increase derived from data and improved customer satisfaction. This indicates how crucial digital transformation is for many businesses in terms of improved business agility and increased revenue. Approximately two of every three organizations in the MEA region will be prioritizing the digitalization of operations over the next 12–18 months. This will become even more imperative as the customer base expands.

The historical and forecast DX market size in the MEA region (shown in Figure 1) further indicates the extent to which digital transformation is accelerating. In 2020, the market size was approximately \$27.86 billion. This is expected to grow to \$61.33 billion in 2025, representing a five-year compound annual growth rate (CAGR) of 17.1%. Software is expected to have the highest growth rate (164%) from 2020 to 2025, followed by hardware and services, with growth rates of 125.16% and 99.7%, respectively.

Figure 1: Digital Transformation Market Size in the MEA Region, 2020–2025

Source: IDC, 2022

Software-Led Innovation Driving Digital Transformation

The adoption of technologies such as cloud and cloud-native app development platforms, and emerging technologies such as artificial intelligence and blockchain, are defining the digital journeys of organizations in the MEA region.

The fundamental shift in the way work was done prior to the COVID-19 pandemic has led to the accelerated adoption of technologies to enable hybrid work. Organizations worldwide have highlighted the positive impact on employee productivity due to the flexibility that the hybrid model avails.

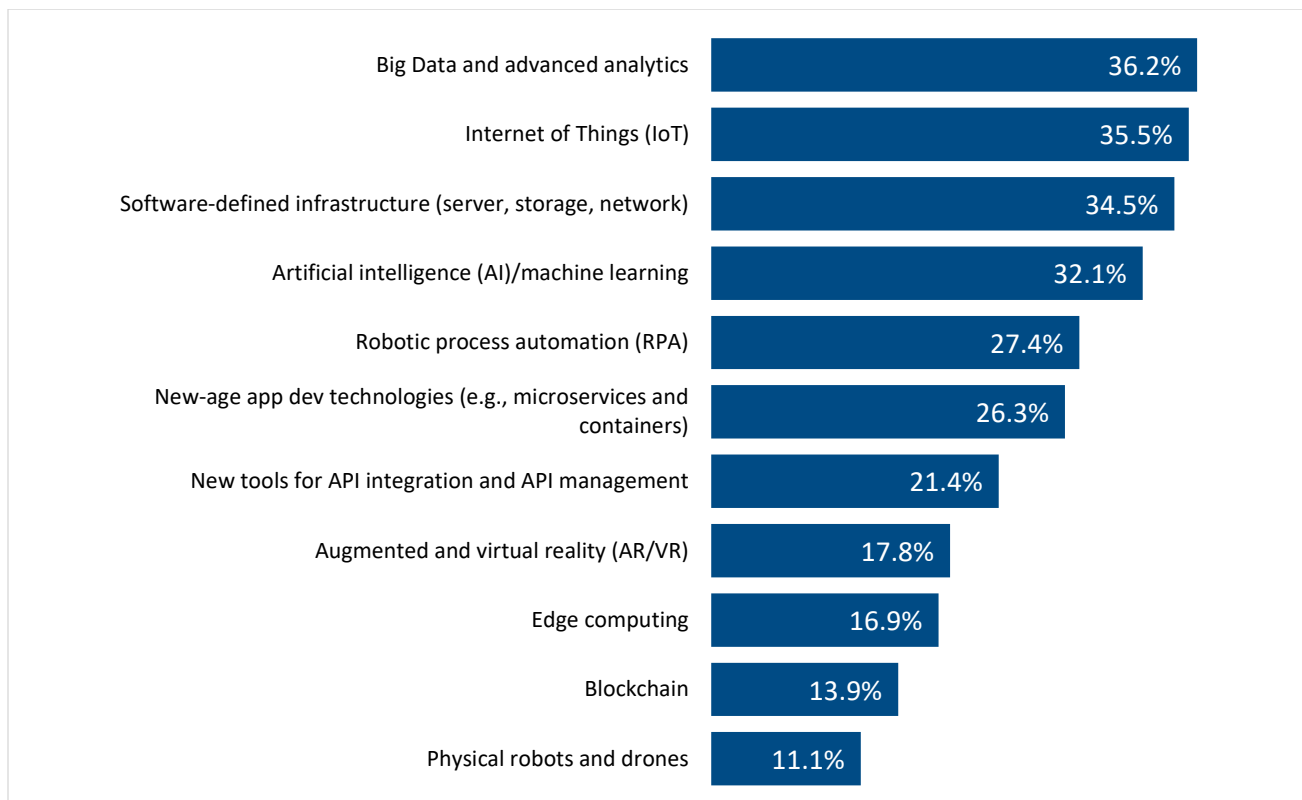
Rapidly enabling employees to work remotely was possible mainly due to the adoption of new-age app development methodologies such as DevOps, DevSecOps, and other agile practices and methodologies. Cloud-native app development technologies, especially microservices and containers, has greatly helped organizations in responding to COVID-19 and minimizing its potential for business disruption.

Cloud Native App Development: Containers' Role in Accelerating the App Journey

When developing applications, various technologies (such as a web server, a database, a messaging system, and an orchestration tool) need to be set up and linked. Issues could arise when a new developer is introduced who may change the environment of the application; no certainty exists that the application will continue to run in different environments. However, introducing containers allows each technology or service to run with its own library and dependencies on the same operating system, independent of other technologies or services. This eliminates the need for constant compatibility tests whenever a new version of a library or dependencies is installed. The application only needs to be built once, and when an upgrade is required, the developer can work with one container at a time. This saves time, reduces complexity, and makes application development much easier, which, in turn, improves application availability and minimizes technical issues, with a further positive impact on application maintenance.

Figure 2: Spending on Emerging Technologies

Q Keeping digital innovation in mind, which of the following emerging technologies are you planning to significantly increase your spending on over the next 12-18 months?

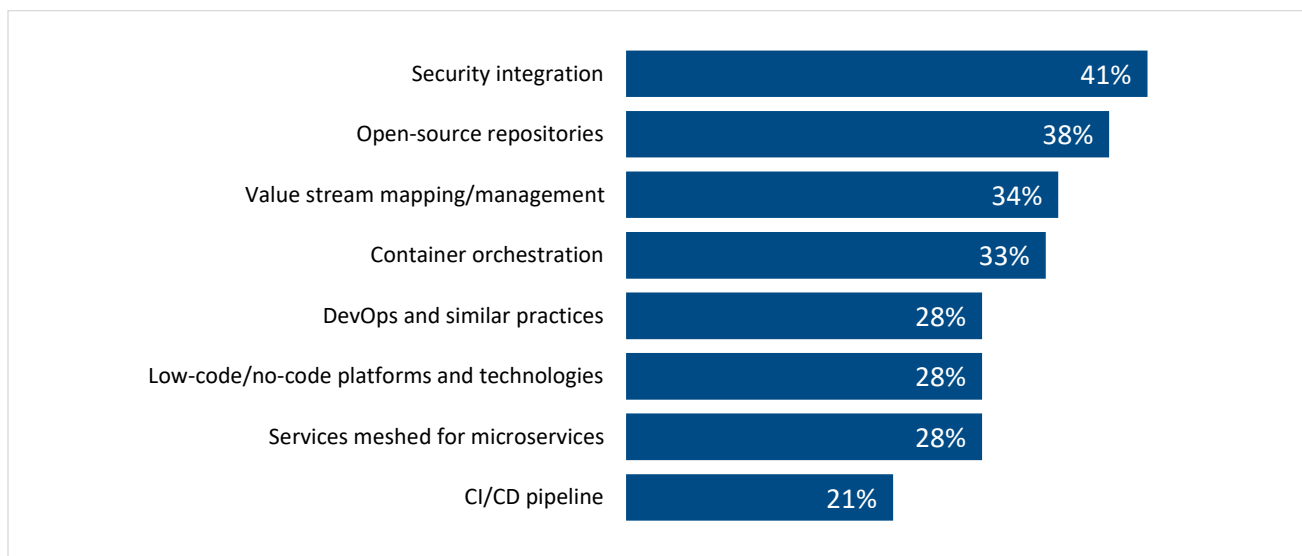


Source: IDC, 2022

As shown in Figure 2, 26% of organizations plan to invest in new-age application development technologies, and this number is expected to increase in the next few years as investments in digital initiatives accelerate further. While various industries are planning to adopt new-age application development methodologies, banking and financial services and insurance (BFSI) tops the chart, with 41% of organizations in this industry planning to increase their spending and adopt these technologies. This is followed by the professional/business services, media and communication, and education industry verticals.

Figure 3: Technologies that Organizations will Prioritize to Accelerate App Delivery

Q What are the top areas that your organization will prioritize to accelerate app delivery in the next 12–18 months?



Source: IDC, 2022

As shown in Figure 3, one of every three organizations in the MEA region highlighted container orchestration as a priority for accelerating app delivery, indicating that they understand its benefits for application development. Organizations in the media and communications, professional/business services, and government verticals top the chart.

Kubernetes Evolving as the De-Facto Container Orchestration Platform

Various types of orchestration technologies exist, such as Swarm, Kubernetes, and MESOS.

While some of these technologies might be relatively simple to set up, they do not allow detailed customization and do not support complex architectures. Equally, while some of these orchestration technologies might be more complex and difficult to set up, they offer more setting options and support relatively complex architectures. While Kubernetes requires advanced skills to set up, it provides the most customization options and supports complex architectures such as public cloud on GCP, Azure, and AWS platforms. This makes Kubernetes stand out as the de-facto orchestration platform.

The advantages of Kubernetes include:

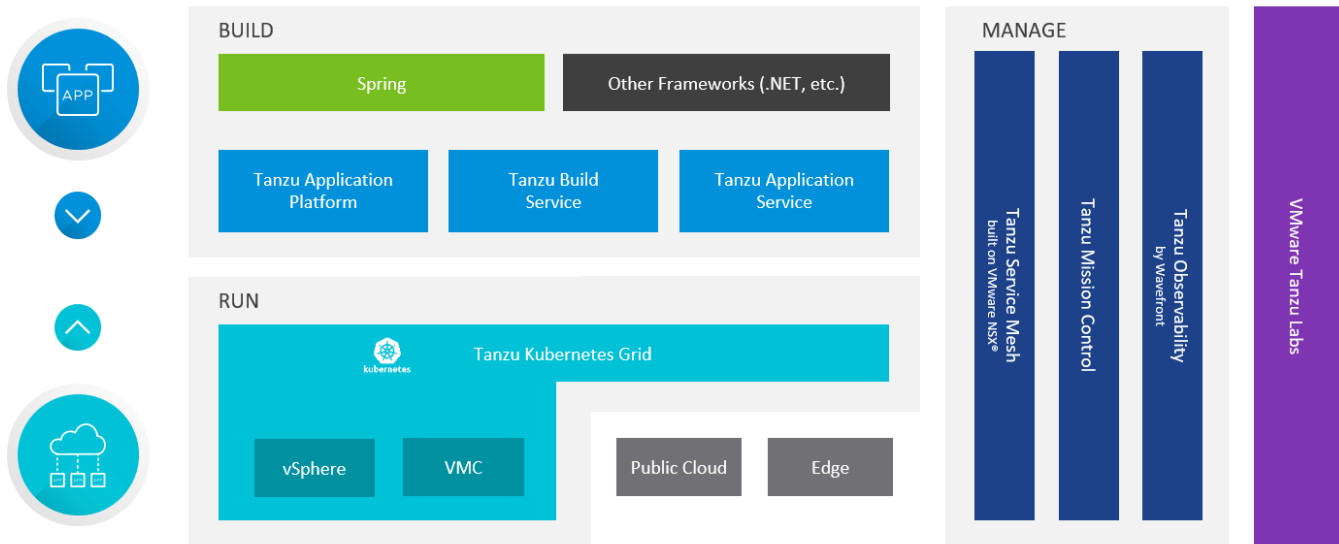
- The ability to introduce different nodes and multiple instances of applications enables each application to remain highly available in the event of a hardware failure.
- The amount of traffic to the application will not affect its operation, as the traffic can be load balanced across different containers. When traffic increases, more instances of the application will be deployed at a service level immediately; when traffic decreases, these instances can be reduced, all without affecting the running of the application.
- In the event of a lack of hardware resources, the nodes running can be increased or decreased without needing to take down the application. This ensures the application always remains available, with no downtime, thereby improving the application usage experience.
- The application can be managed and maintained by a set of object configuration files.

About VMware Tanzu Platform

IDC studied VMware's Tanzu platform, and the business benefits it offers. The research team interviewed VMware's Tanzu specialist in the region and spoke with senior regional leaders to better understand how VMware helps its clients.

IDC was informed that the VMware Tanzu platform enables users to build, run, and manage applications on the cloud, including multi-cloud. Hybrid cloud/Multicloud is a reality; VMware's Tanzu platform enables clients to build, run, and manage their applications across their preferred cloud deployment options. Agility is essential for organizations to achieve their business goals even in times of uncertainty. Organizations should be able to create products or services faster and address customers' queries before the competition entices them. Resilient organizations are built on a foundation of agility, and it is imperative that technology leaders understand they will be unable to create a resilient organization unless they transform the way they build or run their business applications.

Figure 4: VMware Tanzu Platform



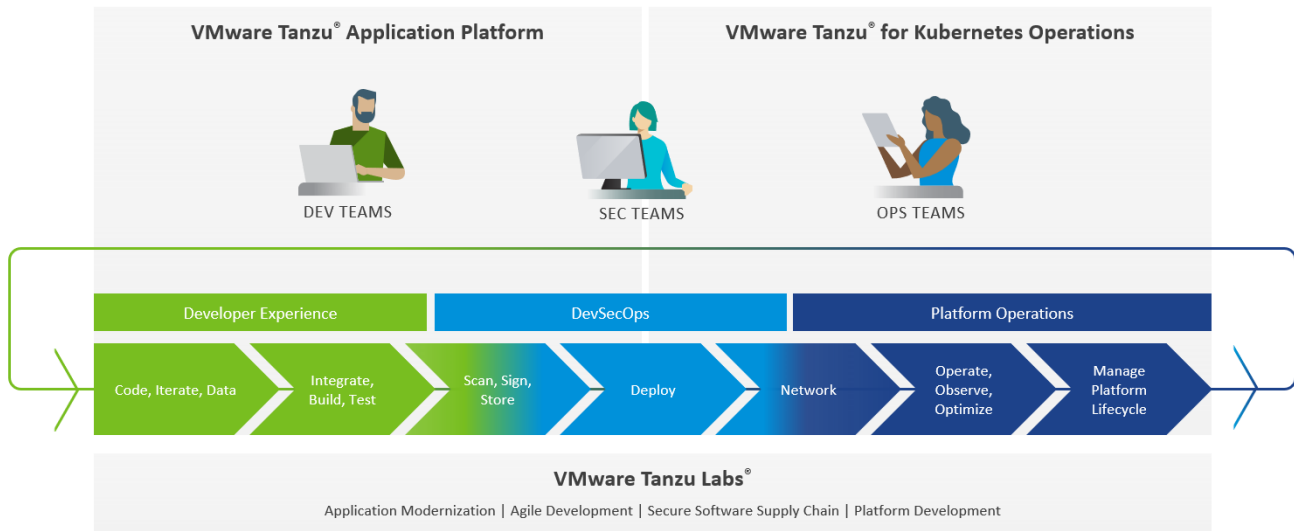
Source: VMware, 2022

A major imperative for organizations when building agility is the ability to develop and release applications faster. For that to happen, ensuring disruptive improvement in developer productivity is critical. Another critical aspect of building a resilient enterprise is to ensure security across the business application’s lifecycle. Ensuring cybersecurity and compliance is vital, from conceptualization to development, delivery, and support. IDC was informed that VMware ensures consistent security through its strategic investments in cybersecurity practices, regular updates and upgrades, and compliance with worldwide regulations to help deliver applications at speed in a multi-cloud environment.

The VMware Tanzu team highlighted to IDC’s researchers how its 360-degree approach helps customers to meet their business needs.

Figure 5 illustrates VMware’s approach to providing its clients with end-to-end Kubernetes adoption and transformation services.

Figure 5: VMware Tanzu Labs



Source: VMware, 2022

IDC was briefed that VMware's presence in the organizational technology landscape through its virtualization technologies greatly assists clients in adopting the Kubernetes platform. The developer-friendly features and functionalities help development teams to adopt Tanzu rapidly. IDC's study further revealed that many customers in the region find adopting VMware Tanzu relatively easy. AI-enabled operations in multi-cloud environments help VMware customers to adopt Tanzu for Kubernetes for Operations.

Organizations quite often inform IDC that setting up a Kubernetes environment requires advanced skills. We have observed that customers are resorting to production-ready managed Kubernetes offerings such as Tanzu, OpenShift, Rancher, and AKS. The complexity of running a vanilla open-source Kubernetes and the required ecosystem for open-source software (e.g., networking, security, storage, backup, and availability) in an enterprise environment requiring organizations to handle lifecycle management, interoperability, and support for many standalone open-source products independently is overwhelming. Therefore, managed Kubernetes services such as Tanzu offer a verified, validated, packaged, integrated, and tested enterprise-ready Kubernetes environment including lifecycle management, support, deployment, and integration at its core (using Tanzu Kubernetes Grid) and added operations and security (with services such as Tanzu Mission Control and Tanzu Service Mesh).

The VMware team further shared with IDC that it does not limit itself to supplying the Kubernetes platform; through its advisory and consulting services, it also helps clients to plan their Kubernetes adoption. VMware Tanzu Labs assists clients in setting out on the cloud-native journey.

Conclusion

Delivering applications faster means delivering superior user experience, achieving business goals, and eventually creating a resilient organization. It also means building a culture of agility while addressing customer needs consistently and creating steep barriers to entry for the competition. During the COVID-19 pandemic, organizations have realized — rather painfully — that agility is no longer optional.

In the digital age, customers do not hesitate to push organizations to innovate and deliver superior products faster and cheaper. They are also pushing companies to evolve better engagement models. Customers are willing to help their service providers to create new business models that have not been tried before. In most industries, customers are challenging the status quo and demanding a great deal more from their vendors much faster.

Organizations in the Middle East and Africa need to embrace these realities of the new normal proactively and prioritize agility in their list of digital initiatives before customers lose patience and shift to the competition.

IDC's study reveals that customer experience and operational excellence are collective responsibilities, and organizations need to make a conscious effort to deliver on these two key pillars. Knowing customers well, reaching out to the right set of customers with attractive offers, and driving sharp campaigns is critical. It also means leaders need to create a well-oiled operational engine to support the cost-effective delivery of superior customer experience. Sales and marketing teams can rely on their operations team for predictability in delivering products and services. Building a resilient enterprise is a never-ending journey that starts with making conscious efforts to create a culture that fosters agility. IDC recommends choosing speed over perfection and achieving perfection in multiple iterations.

About the Analysts



Harish Dunakhe, Senior Research Director (Software and Cloud), META

Harish leads IDC's software and cloud research for the META region.

He and his team of analysts track technology trends, track leading vendors' market share, and create spending forecasts. The team formulates IDC's point of view on emerging technologies such as AI, robotic process automation, analytics, and blockchain.

Apart from driving research in the region, Harish advises leading technology vendors, telcos, and technology implementation partners on their market entry strategy, product portfolio strategy, and alliance strategy.



Yotasha Thaver, Research Analyst (Software and Cloud), META

Yotasha is a research analyst based at IDC's Johannesburg office. She is part of the team that conducts extensive research and analysis on software and cloud in the META region. Additionally, she is responsible for the regional research for IDC's cybersecurity practice.

Yotasha helps the team of analysts to track technology trends and leading vendors' market share and to create spending forecasts.



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