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VENDOR PROFILE

A Comprehensive Analysis of MokaFive Solutions and Strategies, 2011 and Beyond

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IDC OPINION

MokaFive has had success in building a market for distributed virtual desktop (DVD) in a sea of centralized virtual desktop infrastructure (VDI) solutions. Distributed virtual desktop, which offers virtual desktop user mobility while maintaining VDI level management capabilities, is gaining rapid traction in the client virtualization market. MokaFive has been developing distributed virtualization technologies and management solutions since 2005, and it has continued to innovate in this space. IDC considers MokaFive to be one of the key players in the still developing distributed virtual desktop market. Given its innovative solutions and strong venture capital backing, the company is poised to experience exponential growth and expansion of its customer base in the next 12–18 months. Further:

- With MokaFive products, organizations of all sizes can enjoy the management and cost-saving benefits of desktop virtualization while avoiding the costly datacenter upgrades.
- MokaFive's existing product portfolio offers flexibility in that it can be deployed as either a standalone, managed end-to-end solution or a mobile solution to existing VDI solutions.
- The company's future prospects are a combination of increased penetration into the existing customer install base and capitalization on the burgeoning VDI market as a complementary mobile virtualization solution.

IN THIS VENDOR PROFILE

This IDC Vendor Profile provides a detailed analysis of MokaFive, a solution vendor focused on delivering managed virtual desktops through any local hosted hypervisor technologies such as VMware player and Oracle Sun's VirtualBox. This Vendor Profile considers the company in the appropriate market context from the following perspectives:

- Product portfolio
- Marketing strategy
- Competitive positioning
- Financial positioning

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The goal of this analysis is to provide potential investors, customers, and partners with a broad understanding of the company so as to enable sound and informed business decisions.

SITUATION OVERVIEW

Desktop Virtualization Technology Overview

Centralized Virtual Desktop

The centralized virtual desktop infrastructure is unique in that it pioneered the idea of managing a group of unique desktops that are created and updated dynamically from a single set of consolidated images. In this type of architecture, IT managers can focus on patching and managing one operating system image and application, or a small group of operating system images and applications, executed on a server in a datacenter that users access remotely. There are, however, limitations with this architecture, particularly in terms of initial cost of deployment, user mobility, user customizability, and application management that can produce significant cost commitments, which will negate the savings.

Although there are other material benefits associated with the use of centralized virtual desktops in addition to simplified management, such as data security and the lower management and device costs, their applicability across the entire desktop environment is limited because of fundamental limitations of the architecture, including:

- **Limited scalability due to datacenter capacity.** Typical server configurations only support 25–50 users per server. This is a major limiting factor for the scalability of centralized virtual desktop architecture. For instance, hosting 5,000 desktops (a small percentage of desktops for a large enterprise) typically requires deployment of approximately 200 new servers into the datacenter.
- **Capital expenditure requirements.** In addition to the significant up-front investment in server hardware, centralized virtual desktops require a sizable investment in network-based storage, though this cost can vary significantly based on the way the environment is designed.
- **Performance.** Almost all server-based computing architectures suffer from the performance challenges associated with limited bandwidth and high latency. Although in some cases the performance that an end user experiences can increase (typically with computational workloads), multimedia- and other graphics-based workloads can suffer significant performance degradation.
- **Mobility.** As with all other server-based computing architectures, centralized virtual desktop environments require a highly available and constant network connection. Unlike terminal services–based environments, however, which are often used to deploy specific noncritical applications, the way in which CVD environments are typically used (as a replacement of a traditional PC) eliminates their applicability to any user who is even occasionally mobile and needs offline use.

- **Personalization.** Users expect to be able to customize their desktop environments with personal settings and, in some cases, applications and plug-ins. For CVD, this capability poses additional complications when users are mobile or geographically dispersed. Although CVD vendors are investing on personalization capabilities, they have not yet adequately addressed this issue.

Distributed Virtual Desktops

Distributed virtual desktop is different compared with CVDs in that it leverages hypervisor software on the local client and provides VDI type of benefits in terms of how effectively IT can manage the PCs strewn across organizations. Distributed virtual desktops can effectively address certain CVD limitations including, but not limited to:

- Scalability
- Capital expenditure/cost of deployment
- Performance
- Mobility

To date, MokaFive is one of the leading providers of distributed virtual desktop, with its virtual desktop management solutions. As mobile PCs begin to eclipse desktops, becoming the primary workhorse of enterprise, management of mobile users in a virtualized environment has become a hot topic. This Vendor Profile examines MokaFive's desktop management solution and how organizations can benefit from MokaFive's technology.

Company Overview

MokaFive is located in Redwood City, California. It was founded in 2005 by Ramesh Chandra, Constantine Sapuntzakis, and John Whaley, as well as Monica Lam, a professor of computer science at Stanford University. The company was backed by initial funding of $3.26 million from Khosla Ventures, followed by $15 million Series B round of financing led by Highland Capital Partners and an additional investment by Khosla Ventures. In March 2010, MokaFive secured another $21 million of funding from the Series C round, led by NGEN Partners, and additional investments from existing VC partners.

From 2005 to 2007, MokaFive focused on developing desktop virtualization solutions for the consumer market, with limited success. In 2007, the company drastically shifted its strategy to begin aiming at the corporate markets. The initial shift of this marketing strategy was aimed at the small and medium-sized business (SMB) and midmarket companies. From 2008 to 2009, MokaFive began working with systems integrators (SIs) to create managed desktop–as-a-service (DaaS) offerings.

MokaFive's desktop virtualization solution provides a layered management approach to enterprise computing. The solution began its life as a four-year research project at Stanford University funded by the National Science Foundation and was called "The Collective: A Virtual Appliance Computing Infrastructure." Since then, the development has resulted in more than 20 patents pending, as well as a feature-rich, managed distributed virtual desktop solution.

While still in start-up mode, and with fewer than 50 employees, MokaFive has an experienced management team. With industry heavyweight Dale Fuller at the helm as president and CEO, and an all-star cast on the board of directors, MokaFive is poised to take full advantage of the mounting interests in client virtualization and grow rapidly over the next few years.

Company Strategy

Product Strategy

Product Portfolio

MokaFive's main product line is called MokaFive Suite, which is an end-to-end desktop management solution. This section analyzes each of the MokaFive Suite components:

- **LivePC:** MokaFive's virtualized end-user computing environment is called the LivePC. The virtualized desktop, LivePC, is executed directly on top of the local operating system, thus eliminating the need to have virtual desktops permanently connected to the corporate datacenter like traditional VDI technology. Locally executed virtual desktops can also utilize local client hardware to improve performance and user experience.

  The LivePC virtual machine image is portable and can be downloaded or provisioned on physical media such as USB key, portable hard disk, and even mobile phones. This portability enables the ability to work on any computer that has a USB port, further improving MokaFive's mobility story. If a USB key or laptop containing the LivePC is lost or stolen, the image on the device can be remotely disabled or destroyed.

  The anatomy of MokaFive LivePC is separated into virtual layers consisting of system, application, and user personality, which can be controlled and managed independently. With layering technology, organizations can offer full user personalization functions while securing core system resources such as locking down the OS.

- **MokaFive Player:** The MokaFive Player is a software program that runs LivePC images. It is also the management layer that enforces built-in and remote LivePC policies. At the heart of MokaFive player is a Type-2 hypervisor, usually licensed from one of MokaFive's technology partners such as VMware and Oracle Sun. Because the MokaFive Player is hypervisor agnostic, it can run on most of the popular operating platforms such as Windows, Mac OS X, and Linux.

  Security is also built into the MokaFive player; the initial log-on information can be automatically integrated with the organization's active directory and intranet resources made available within the LivePC image. Additionally, the MokaFive Player and LivePC image are completely encrypted and isolated from the host operating system, and virus, spyware, malware, and key logging software will not affect the virtual machine. Even if the host OS is completely destroyed by viruses, an user can simply make a copy of his/her LivePC image and download MokaFive Player to another host PC and start working in no time.

- **MokaFive Creator:** The Creator is MokaFive's LivePC authoring tool for the organizations' IT professionals. The MokaFive Creator is used to create LivePC images. It has the ability to update existing images with additional applications as well as integrate patches and policies. IT professionals can quickly publish updated images to deploy in the field.

  As a function, when a LivePC image is updated, the image is not downloaded to client PCs in its entirety; MokaFive Player will conduct block-level comparison between the new and the old images and only download the difference (delta), thus drastically improving update efficiency.

- **MokaFive Console:** The MokaFive Console is where IT professionals manage the LivePC images. With the console, IT professionals can remotely push patches and updates to the end users, enforce user policies, restore user image to previous states (data and state restore), and even remotely revoke or kill unauthorized LivePC images.

  Management is the most important part of any client virtualization solution. MokaFive Console is an easy-to-learn, easy-to-use solution that is easily scaled depending on the need.

- **MokaFive Management Server:** MokaFive Enterprise Server is where all the MokaFive server-side components live; it can also be integrated with existing IT infrastructures such as network storage and Active Directory for seamless operation.

MokaFive released a major update to MokaFive Suite in December 2010. The 3.0 update included:

- **Windows 7 support:** Windows 7–based virtual machines are now fully supported within LivePC. Customers can now enjoy the enhanced usability of Windows 7 while guaranteeing backward compatibility through Windows XP hosts.

- **Integrated security:** MokaFive has partnered with AVG to create an additional layer of security for MokaFive Suite. AVG antivirus and antimalware solutions have been integrated into LivePC, which provide constant, real-time monitoring against threat while minimizing resource allocation.

- **Service Provider Edition:** MokaFive has delivered its promise to include multitenancy support, golden image management, and cross-tenant reporting in the newly released MokaFive Suite Service Provider Edition. The audiences for the Service Provider Edition are the managed service and cloud service providers that can enlarge MokaFive's desktop-as-a-service footprint.

Marketing Strategy

Market Context

The client virtualization market is on a path of strong growth, with many Fortune 500 organizations utilizing the platform in some context. With notebooks outpacing

desktops in corporate deployments, MokaFive's managed distributed virtual desktop platform offers additional benefits over the existing VDI solutions:

- **Lower overall ownership costs.** Unlike traditional VDI solutions, the distributed virtual desktops utilize existing local hardware capacity. Therefore, minimal datacenter upgrade is required. Without the high initial cost of deployment, the cost-saving story of client virtualization becomes much more enticing. Additionally, the DVD model also enjoys all the operating cost savings VDI creates.

- **True managed mobile solution.** While VDI requires constant connection to the server, DVD, with localized hypervisor, can be taken offline to create a true mobile solution. At the same time, the local virtual machines can be set to "phone home" to synchronize and back up with the management server. The DVD solution is a perfect solution for organizations with mobile workers.

- **Simplified desktop provisioning.** Because desktop software is not installed (in the traditional sense) on PC hardware, the process associated with the initial deployment of a new PC is simplified. Desktop environments are simply deployed as virtual machines via network means or physical media, which are managed by MokaFive Console.

- **Simplified change management.** By using virtual machines as the primary desktop environment, operating system migrations, application updates, and most other software changes can be deployed seamlessly. Not only does deployment of this new software become simpler, but in the event of an issue with a new desktop environment (with a new OS for instance), managers can simply revert back to the last-known good state of the desktop without any user downtime. This can significantly lower the risk associated with changes to existing desktop software configurations.

- **Personalized, choice computing.** By being able to isolate multiple desktops on a single PC, IT management can allow users greater flexibility. Furthermore, being OS platform independent allows organizations to implement the bring your own computer (BYOC) model, which can provide users platform choice (Mac or PC), create enhanced interdepartmental synergy, and reduce hardware maintenance costs.

Go-to-Market Strategy

MokaFive's original go-to-market strategy is to utilize its own sales forces to develop customer relationships in North America, and partner with distributors in Japan, where MokaFive is gaining rapid traction.

MokaFive has been experiencing sales successes in the past few years, winning paid pilot deals with some Fortune 500 corporations, as well as corporatewide deployment deals in the midmarket, and blue chip companies.

As MokaFive's business continues to expand, creating additional channel partnerships will become a necessity. MokaFive is currently in talks with several large systems integrators about creating channel partnerships. Partnering with large SIs

can enlarge MokaFive's footprint in the client virtualization marketplace and help MokaFive create a sustainable desktop-as-a-service solution.

Competitive Positioning

MokaFive's positioning is fairly unique. On the technology side, MokaFive is competing with components of larger vendors' offerings, such as VMware View Offline mode, and Microsoft MED-V (XP Mode). On the management side, MokaFive pretty much competes with every single client virtualization vendor on the market. However, the MokaFive competitive advantage becomes apparent when the technology and management come together.

MokaFive is one of the few vendors today that offer a truly managed distributed virtual desktop solution. The ability to have a managed mobile virtual desktop in a world of connected VDI is indeed disruptive. Additionally, unlike larger vendors, MokaFive's solution is flexible and scalable and requires little to no additional investment in datacenter hardware. When all the pieces are put together, MokaFive is positioned very competitively in the client virtualization market.

Financial Position

MokaFive is a private company currently in operation with existing rounds of venture capital funding. Invested capital is estimated at around $40 million. Although the company has been in operation since 2005, the shift of focus from consumer to corporate in 2007 has delayed MokaFive's becoming cash-flow positive.

MokaFive, however, is well funded and managed at its current state. In the past six months, MokaFive has begun to experience additional sales and an increased size of deals being made. With client virtualization interests at an all-time high, MokaFive is expecting to continue its current growth trajectory and swing into profitability within the next 6–12 months.

FUTURE OUTLOOK

IDC believes client virtualization will continue its strong upward growth in the next 3–5 years. Organizations of all sizes will be evaluating this technology and deploy individualized solutions. MokaFive's unique position in client virtualization market, in that it is hypervisor and hardware agnostic, will create opportunities for the company to exploit.

MokaFive's growth in this market will come from both its sales teams and its channel partner relationships, with the sales teams continuing to focus on the midmarket accounts and the channel partners focusing on offering MokaFive as the preferred DaaS solution provider.

IDC believes that MokaFive has done a good job of positioning its product as a capable desktop virtualization solution and that the company will see strong growth in 2011 and beyond.

ESSENTIAL GUIDANCE

Advice for MokaFive

MokaFive should consider interoperability with existing market leaders (such as Citrix, VMware, and Microsoft). Such a move will give MokaFive the ability to have a seat at any organization with existing VDI deployments and provide a solution that can complement existing VDI deployments with distributed virtual desktops for mobile users.

Additionally, continued investment in technology is necessary for continued growth. Technologies like bare-metal client hypervisors are here and offer several advantages in manageability, cost, and performance over the OS hosted solution. MokaFive will need to create management tools and software to address this emerging technology.

Advice for Buyers

Mobile- and branch-centric organizations can be well served by the MokaFive Suite, even if an existing VDI deployment is already in place. MokaFive can essentially manage all remote users with VDI style control while giving users flexibility to customize and personalize. Additionally, IT can implement choice computing or the BYOC model to further reduce ownership costs.

Midmarket traditionally has been locked out of the client virtualization space because of the high cost of entry. With MokaFive's solutions, organizations can gain VDI type of management while not incurring the costly datacenter upgrade, thus reducing the cost of deployment, driving down the total cost of ownership, and improving return on investment.

MokaFive Suite is a versatile client virtualization solution and is a good alternative or complement to the costly end-to-end solutions offered by big vendors. At the end of the day, no two organization's virtualization needs are the same. Companies will need to understand what they need instead of what they want. In today's enterprise, where mobile computers are outnumbering desktops, MokaFive Suite can provide a low-cost, effective, and realizable solution to virtualize and manage the ever-growing fleet of mobile computers.

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Related Research

- *IDC's Software Taxonomy, 2010* (IDC #222023, February 2010)

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