White Paper

Building Hybrid Cloud from Scratch in the Banking and Insurance Sectors with Atos, NetApp, and Cisco

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In partnership with

Atos

cisco

Abstract

When it comes to cloud computing, the adoption rate of businesses is growing steadily. Many have even made the leap to a multicloud strategy. This fact means there is now a clear need for an infrastructure that's capable of guaranteeing the agility and security required by such heterogeneous IT infrastructures. This capability is the objective of a unique partnership between Engage ESM, a subsidiary of Atos, Cisco, NetApp, and Commvault: to provide a fully integrated multicloud service management solution.

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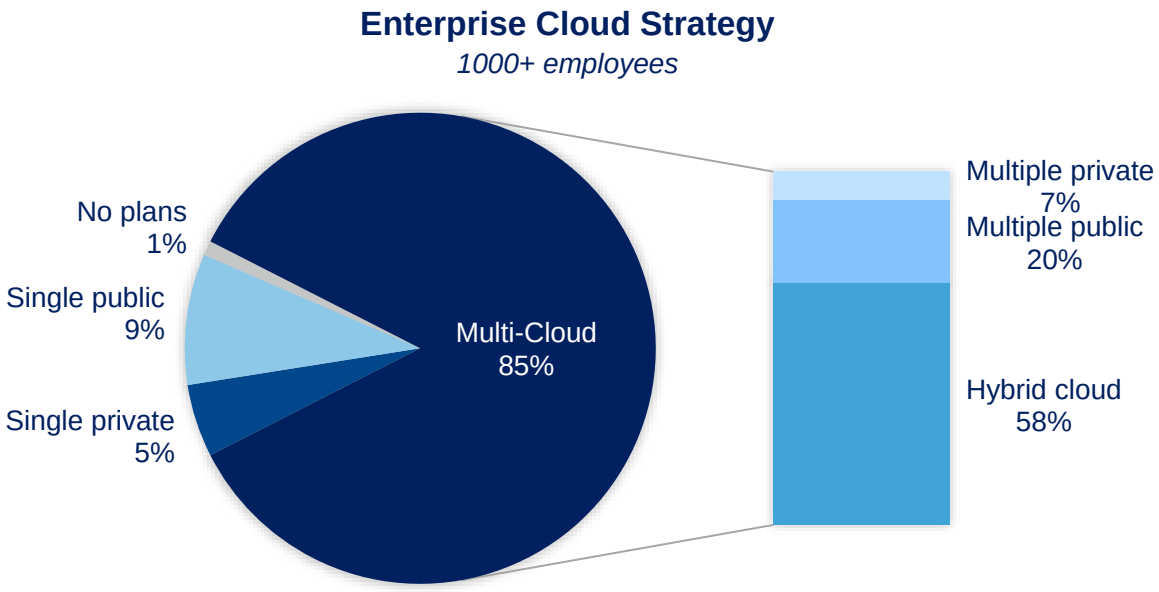
1 Executive Summary

Given the cutting-edge nature of software-as-a-service (SaaS) applications (for example, gains in agility and better cost control), businesses are starting to embrace cloud computing. These businesses are not just attracted by the benefits of the cloud; they have also opted to host their applications with a number of different cloud service operators as part of a multicloud strategy.

A recent study by Markets and Markets[1] valued this multicloud market at $1.16 billion in 2017, a figure that is set to rise to $4.4 billion by 2022, an annual growth rate in excess of 30%. As businesses actively use a number of different cloud service operators, the United States, Europe, and the Asia/Pacific region are leading the charge. An IDC study carried out in 11 European countries revealed that 40% of European businesses have deployed applications with several different cloud service operators. In 31% of these cases, it was a means of extending an on-premises platform with new functionality in the public cloud; in 8% of cases, it was seen as a way to temporarily increase performance, a technique known as *bursting*.

Figure 1) Enterprise cloud strategy.[2]



The study showed that only 20% of the businesses surveyed are using on-premises applications exclusively.

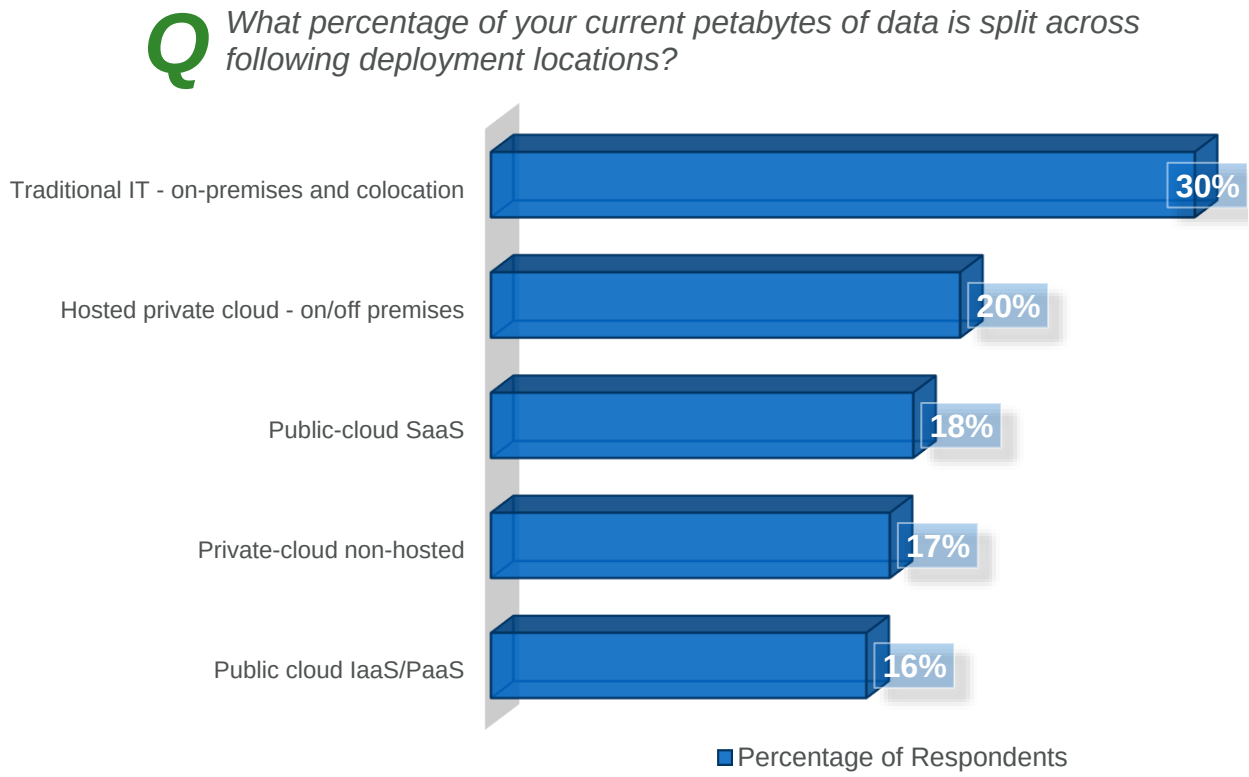
[1] "Multi-Cloud Management Market by Platform, Application (Metering & Billing, Infrastructure & Resource Management), Service Type (Cloud Automation, Migration & Integration), Deployment Model, Vertical, and Region—Global Forecast to 2022," Markets and Markets, October 2017.

In 2017, multicloud had already established itself as the standard for IT systems. Having progressively upgraded their data centers, IT departments have gone on to adopt virtualization, followed by automation of their platforms, and they are now embracing the private cloud.

At the same time there is a rapid increase in the different ways of using the public cloud. Based on a recent RightScale survey, entitled "State of the Cloud,"[2] 85% of businesses have already switched their IT to multicloud mode. Of these businesses, 58% use a hybrid (public/private) model, 20% deploy solutions from separate public cloud operators, and 7% use a number of different private clouds.

Set in the context of digital transformation, the "Become a Data Thriver"[3] study carried out by IDC for NetApp in 2017 shows that 42% of CIOs see investment in a public platform as a service (PaaS) as a means of modernizing their information system, 36% mention a public infrastructure as a service (IaaS), and 34% confirm that they want to set up an internal PaaS environment.

Figure 2) Data locations.[3]



The study revealed that businesses are now storing less than one-third of their data on traditional IT infrastructures. In terms of specific cloud type, there is some variation: 17% of respondents confirm that they have switched their data to a private cloud infrastructure, 20% indicate that they use a private cloud hosted by a third party, 18% opt for a public SaaS service operator, while 16% choose a public cloud solution.

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[2] "The State of the Cloud Report," RightScale, 2017.
[3] "Become a Data Thriver Study," IDC for NetApp, November 2017.

In terms of cloud computing, this trend toward heterogeneous IT systems is not something that's going to go away any time soon. Quite the opposite. IDC analysts[4] emphasized the fact that only 20% of industry representatives believe that it is possible to standardize their projects on just one or two large IaaS/PaaS service providers, a figure that rises to just 30% for IT decision makers.

A multicloud strategy is becoming the most dominant strategy among European businesses because it allows a best-in-class approach whereby the most suitable operator is selected for each service. It also reduces the risk of vendor lock-in: that is, dependency on a single service provider. As a way to avoid vendor lock-in, the solution most frequently cited by decision makers involves the implementation of a software layer between the IT department and these cloud services. This intermediary layer allows for the provisioning and deprovisioning of cloud services in line with the specific needs of the business.

Maturity of Hybrid Cloud in the Financial Services Sector

In this drive toward cloud adoption, the financial services sector is leading the charge in certain areas. This situation is especially the case for mobile and online banking applications, but they are much more cautious when it comes to back office applications.

In many cases, cloud adoption is driven by the individual departments without the approval of upper-level management. According to a report from ENISA,[5] one in every two businesses in the financial services sector is aware that cloud resources are being used independently of their company's IT strategy, a practice known as "shadow IT." The same study reveals that cloud adoption rates in this sector are significantly higher than expected. Some 87.5% of the businesses surveyed are already using the cloud.

Although the cloud is already a day-to-day reality for almost all players in the financial services sector, the example of ING, which embarked on an extensive program to migrate almost all of its IT system to the cloud, is still very much the exception.

A number of factors drive financial services companies to opt for a hybrid cloud approach. Firstly, due to their very nature, banks and financial institutions are the targets of choice for IT hackers.

According to a Raytheon/Websense[6] survey, the number of security incidents in the financial services sector is three times higher than that observed in other business sectors.

For many in the financial services sector, existing IT infrastructures still play a very important role. Mainframes are still widely used in processing financial transactions. The migration of millions of lines of code, some written many decades ago, is posing real technical challenges and requires extensive investment by anyone looking to migrate key applications in the banking sector and various other sectors.

That said, the attitude of regulators has evolved to the extent that CIOs now have greater room to maneuver in matters relating to the public cloud. Driven by the need for greater agility for new projects such as online banking, as well as blockchain pilots and the enhancement of digital workplace tools, CIOs no longer think twice about prioritizing the public cloud when issuing RFPs for new projects.

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[4] "40% of European Organizations Already Stretch Applications Across Clouds; Multi-Cloud Strategy Urgently Needed, Says IDC," Source: IDC, September 21, 2017.

[5] "Secure Use of Cloud Computing in the Finance Sector," European Union Agency for Network and Information Security, December 2015.

[6] "2015 Industry Drill-Down Report for Financial Services," Raytheon/Websense, 2015.

Multicloud and the GDPR Challenges It Faces

By Jean-François Marie, Director, Data Product & Solutions EMEA, NetApp

All businesses and organizations that manage, store, or move personal data in the cloud will be affected by the new General Data Protection Regulation (GDPR), which will take effect in May 2018 across all EU member countries. It will also affect companies that are registered outside of the EU but have access to the personal data of EU residents or that process this information, regardless of collection method.

Given companies' massive uptake of hybrid cloud and multicloud models, an increasing amount of data is being collected, stored, and used in the cloud via multiple different providers, many of which are based abroad. At an organizational level, this approach requires a complete rethinking about how to move from a strategy centered on the confidential processing of data to a more holistic approach that will apply to an entire ecosystem of partners. The principle of data privacy and end-user consent will only work if the data in question is designed properly right from the start.

With the NetApp® Data Fabric, data is pushed out into the cloud, where it is processed by the most appropriate resource, whether it is an external resource provided by a service provider or an internal resource managed within the organization. This open approach allows the system's intelligence to be exploited at various levels in the cloud by incorporating a data management layer and by giving each organization the freedom to manage its data as it prefers.

2 Customer Use Case

For the consultants at Accenture,[7] the time for evaluations and proof-of-concept testing is over. Organizations in the financial services sector must adopt a "cloud-first" strategy without delay. These organizations are being urged to overcome internal resistance and prioritize cloud solutions as the number-one option when it comes to IT sourcing and selecting industry-specific solutions.

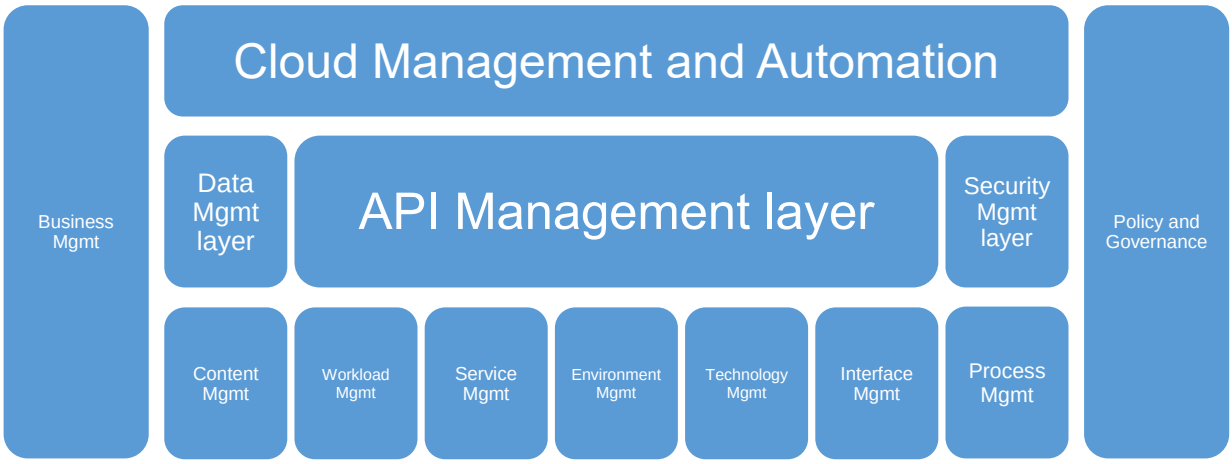
By favoring opex without affecting capex, the cloud model provides organizations with the means to scale rapidly without the need for extensive upfront investment. Increasingly, on-premises deployments and IT resource provisioning become the exception and are exclusively reserved for applications or environments where there are no cloud-based alternatives.

When it comes to implementing a future-proof multicloud strategy, Accenture emphasizes the critical role played by cloud management platforms (CMPs).

According to the experts at Accenture, the implementation of a CMP enables a reduction in the operational risks associated with implementing multiple public cloud services, while also ensuring that everyone in the organization is fully compliant with the security and procurement policies associated with these cloud services.

[7] "Accenture Financial Services Technology Advisory Cloud—What's Stopping You?" Accenture Consulting, 2016.

Figure 3) Ovum's cloud management framework.[8]



In addition, a CMP adds a new abstraction layer between the IT department and the various cloud services that have been selected by the organization and added to its service catalog. This approach not only helps to reduce vendor lock-in (that is, dependence on proprietary technologies); it also improves visibility in terms of the cost of the cloud services that have been used. The more sophisticated systems even allow the cost of used services to be charged back to individual departments based on their actual consumption.

A number of organizations have already developed their own CMP tools to respond to their specific short-term needs.

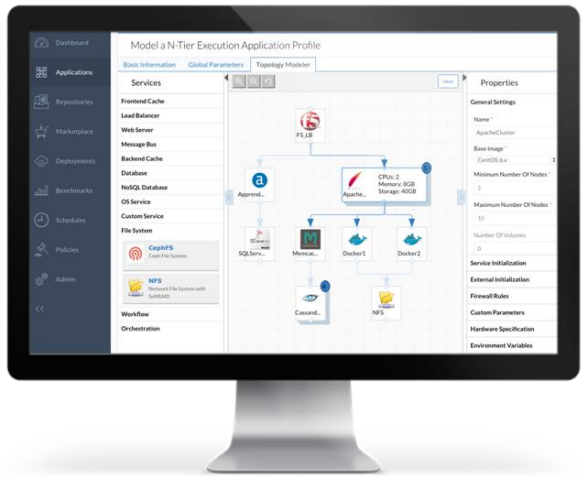
However, Accenture consultants are urging their clients to opt for a commercial solution rather than developing and then upgrading a proprietary CMP, which by its nature is complex and would need to be updated regularly. However, the services offered by cloud operators are already updated continuously.

3 Proposed Solution

Faced with this increasing demand for cloud service management solutions, Atos and its subsidiary, Engage ESM, joined forces with ServiceNow, Cisco, NetApp, ACI Software, VMware, and Commvault to develop the first complete service management stack to be designed specifically for a multicloud strategy.

[8] Source: Ovum

Figure 4) Cisco CloudCenter dashboard.



The core element of this unique solution is the Engage ESM-led integration of the CliQr solution with the market-leading IT service management platform ServiceNow.

The solution developed by CliQr, which Cisco acquired in 2016, is designed for application deployment in a multicloud environment in which individual organizations are free to combine private cloud with public cloud by increasing the number of vendors they use.

This cloud orchestration platform, now marketed by Cisco under the brand Cisco CloudCenter, provides a cloud infrastructure management portal, a user interface that allows administrators to distribute workloads among their chosen cloud services in just a few clicks, and a set of APIs that enables developers to manage this orchestration platform via code.

Andy Fleck, head of cloud management at Engage ESM, explains the role of this integration between ITSM and cloud service management: "An organization that uses a service catalog for internal or public IT services will use CloudCenter and its catalog of services, which are available via the ServiceNow interface. Based on their specific needs, they will be able to provision their services or stop them altogether. If an organization wants to use a service catalog from a purely DevOps perspective, their teams can implement a Jenkins or Bamboo type solution, which are the most popular solutions for ensuring continuous integration."

Managed via APIs, requests are processed by Cisco CloudCenter, which is responsible for directly managing the organization's IT infrastructure components (private cloud components or public cloud services). This CliQr layer provides all the agility of the solution, as well as the governance and visibility features of this hybrid multicloud architecture, which are then combined with the IT service management features provided by ServiceNow.

Integrator of the CliQr solution for the EMEA area even before it was acquired by Cisco, Engage ESM developed this technology gateway between CloudCenter and ServiceNow. In so doing, it created clear synergies between these two complementary solutions, with CloudCenter providing technical management functions for cloud services and ServiceNow providing ITSM functions.

The following three use cases illustrate these synergies:

- **Use case 1: provisioning a virtual machine.** From the CloudCenter portal, a user selects the virtual machine type to implement. Cisco CloudCenter Orchestrator submits the request to ServiceNow to implement the required change. This request then follows its own validation workflow. After being accepted, the request activates Cisco CloudCenter Orchestrator, which provisions the virtual machine in the required private or public cloud environment. A notification informs the user that the VM is now

available.

- **Use case 2: scaling out an application horizontally.** In cases where a multitier application needs to be scaled to respond to an increase in activity, the Cisco CloudCenter platform can be used to automate the provisioning of new resources. Whenever demand from a particular application starts to peak, CloudCenter's workload monitoring capabilities enable a request for additional resources to be sent to the orchestrator, in dynamic mode, based on the predefined configuration. This request is submitted to ServiceNow so that it can generate an incident and update the configuration management database (CMDB) about this request to add resources for the application. ServiceNow then generates a resource request and submits it to CloudCenter Orchestrator, which can provision the necessary resources and have them immediately allocated to the application.

- **Use case 3: implementing an internal chargeback system for users of cloud resources.** Cisco CloudCenter's "Cloud Cost" module can be used to implement an accurate cost analysis system for costs associated with the use of cloud services. For each VM, the platform provides a monitoring feature that keeps track of all data used, which makes it easier to analyze and report on these costs. This reporting model can be used as the basis for a chargeback management system (whereby internal end users are charged for their use of resources).

This joining of forces between Atos and Engage ESM allows for greater levels of integration flexibility. Thanks to Atos's extensive integration capabilities, this end-to-end solution can be tailored to the specific needs of each client's existing information system and IT infrastructure.

4 Hardware Considerations

In developing this multicloud solution, Atos and its subsidiary, Engage ESM, turned to Cisco and NetApp, who proposed a converged FlexPod® solution.

Depending on the selected FlexPod version, a FlexPod system is based on Cisco blades and switches and a NetApp or SolidFire® storage system. Cisco and NetApp provide a complete range of converged FlexPod systems.

Figure 5) FlexPod Express casing.

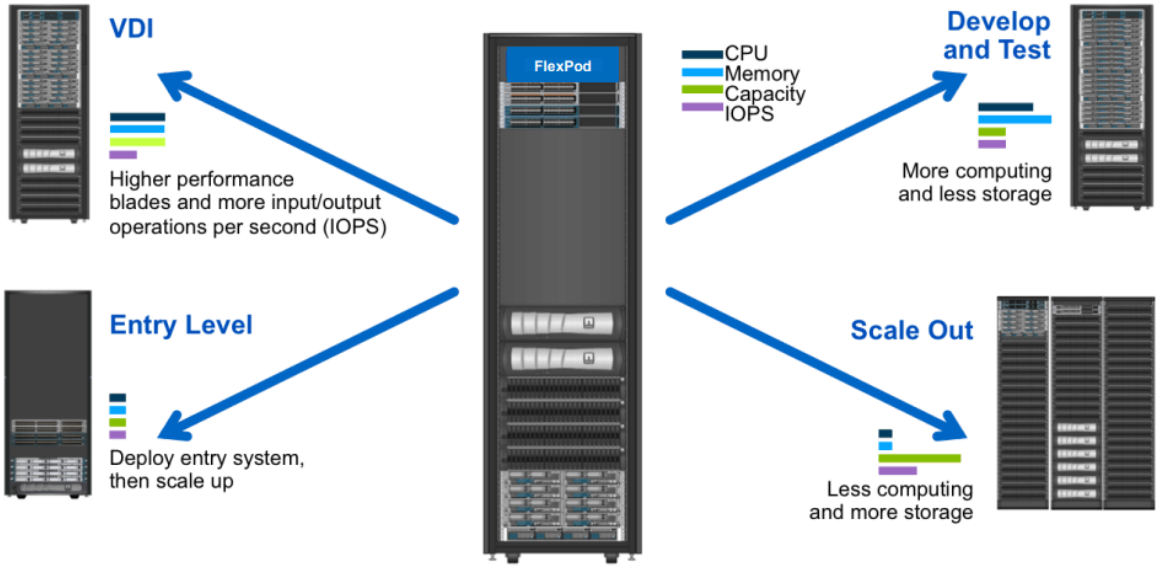
The entry-level FlexPod Express system is mainly geared toward remote offices and branch offices (ROBO), retail points of sale, small to midsized enterprises, and edge computing configurations in general.

With a smaller rack size, Cisco and NetApp provide a complete micro data center that's capable of responding to all the IT needs of a small business.

The range's entry-level configuration leverages Cisco UCS C-Series servers, a NetApp FAS2600 storage controller with NetApp ONTAP® version 9.1, and Cisco Nexus 9000 and 3000 Series switches.

A number of configurations have been certified by NetApp and its partner Cisco to provide as close a fit as possible to the specific needs of businesses. The solution's software stack allows businesses to choose between VMware vSphere 6.5 or Microsoft Windows Server Hyper-V 2016.

Figure 6) Example of scaling a FlexPod configuration.



Designed to meet enterprise-class needs, FlexPod Datacenter is targeted at the virtualized infrastructure and private cloud market. The basic hardware in this full-size rack comes with two "top of the rack" Cisco Nexus network switches, while storage capacity is provided by two SAN switches for NetApp FAS80xx controllers (for redundancy). Cisco UCS B-Series blade servers are also included.

Once again, the configuration of this converged system can be adapted to the specific needs and priorities of the individual business. It's also possible to adjust the priority assigned for storage and processing capacity based on the workloads allocated by the business to its FlexPod deployments.

Apart from this scale-up capability, it's also possible to scale out a FlexPod Datacenter system horizontally by adding external storage capacity and/or by creating a FlexPod cluster.

To meet even more specific requirements, NetApp and Cisco have created FlexPod Select and FlexPod SF. FlexPod Select is mostly geared toward analytics and big data. It leverages NetApp E-Series storage systems and Cisco UCS servers and switches and is capable of hosting a big data Hadoop architecture. Cloudera Distribution Hadoop (CDH) and Hortonworks Data Platform (HPD)—the two main distributions for open-source big data platforms—have both been validated for the FlexPod Select converted platform.

Finally, with FlexPod SF, Cisco and NetApp provide next-generation data center for the IT infrastructure by combining the converged architecture of FlexPod with the storage capabilities of SolidFire. Designed by NetApp, SolidFire combines the Element® OS operating system with an all-flash block storage system.

Figure 7) Full-sized FlexPod SF chassis.

This innovation has allowed Cisco and NetApp to offer a converged system that's capable of running several hundred, very heterogeneous applications on the same platform.

Apart from the compute power delivered by Cisco UCS servers and Cisco Nexus switch bandwidth, a NetApp SolidFire storage cluster allows the configuration of very specific QoS parameters for determining the input/output rates for each application.

What's more, it’s also possible to define logical unit numbers (LUNs) for different-sized units in the storage pool provided.

Concretely, this approach means that it's now possible to have very heterogeneous workloads cohabiting on this same infrastructure, whether they are critical applications, Oracle databases, Docker execution platforms (containers), or VDI virtual sessions.

This ability to manage QoS by client eliminates 93% of the performance issues linked to applications that monopolize input/output to the detriment of other applications.

The availability of such a solution paves the way for large-scale consolidation of traditional storage servers and infrastructures onto individual FlexPod SF deployments.

Prioritizing integration in this way makes administration tasks significantly easier.

The platform can be managed using a VMware vCenter plug-in (Microsoft PowerShell) for businesses that prefer a software-defined approach, a storage policy (storage policy-based management, or SPBM), or VMware vRealize Suite.

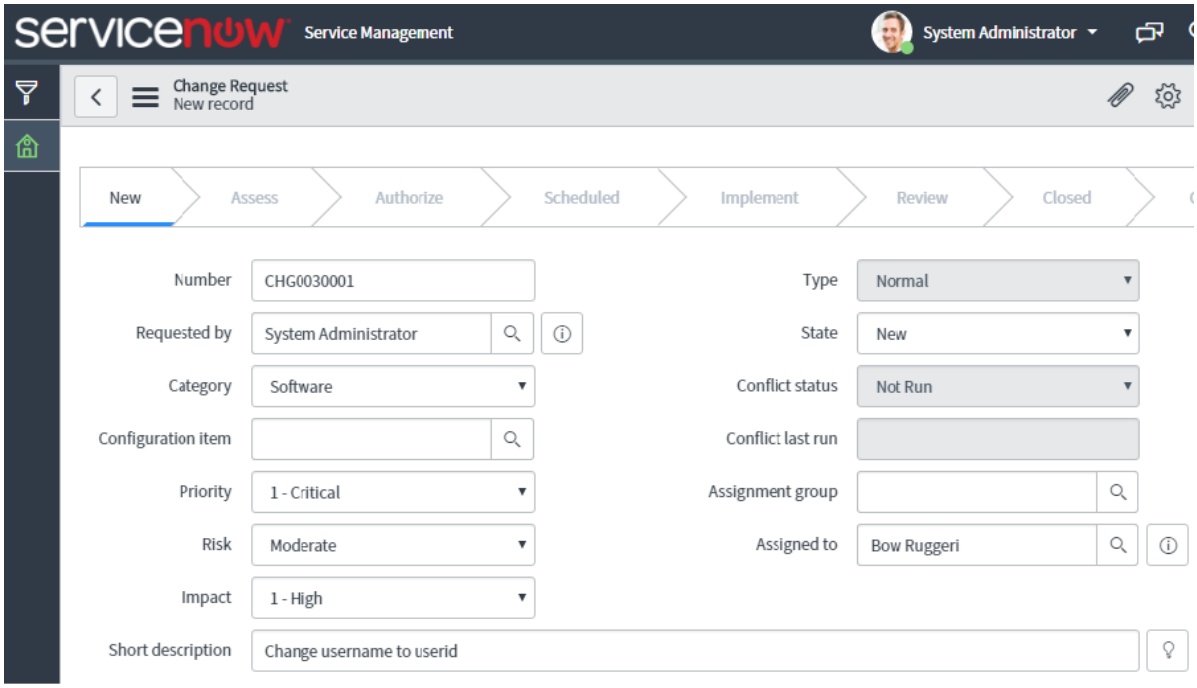
5 Software Considerations

While cloud services are managed via the CloudCenter platform, it's the integration of Cisco's solution with ServiceNow, as implemented by Engage ESM (an Atos company), that creates significant added value for IT departments that use it.

ServiceNow is considered by Gartner analysts[9] to be the leading provider of IT service support management solutions. This SaaS ITSM platform was primarily selected to provide an improved operational structure for IT departments at companies such as Carlson Wagonlit Travel, GE Capital/GE Digital, KPMG, Royal Bank of Scotland, Siemens, and so on.

The platform was classified as a "leader" in Gartner's latest Magic Quadrant. The analysts highlighted ServiceNow's strong presence in RFPs issued by other companies and the fact that it has double the market share of its closest rival in the ITSM tools market. In addition, this 100% SaaS solution has expanded its functionality as a result of several acquisitions over the last few years and in particular has seen its CMDB capabilities extended considerably.

Figure 8) ServiceNow dashboard.



The integration of Cisco's CloudCenter platform with ServiceNow, which was implemented by Atos/Engage ESM, rounds out the lifecycle management features integrated in Cisco CloudCenter.

The Cisco platform updates the ITSM management platform in relation to the actual usage status of cloud services by the various departments, which makes it possible to track IT activity as accurately as possible and perhaps even form the basis for implementing a chargeback system for services used.

Furthermore, the consolidation of usage data from all department managers in the company provides the purchasing department with the information it needs to negotiate the best possible commercial terms from its cloud service providers.

[9] "Gartner Unveils 2017 Magic Quadrant for IT Service Management Tools," Gartner, 2017.

To secure this multicloud architecture, which, by its very nature, is mission critical, Atos chose Commvault's data protection solution. Ranked in Gartner's "leaders quadrant" for the seventh year running, Commvault's proven, high-performance offering integrates seamlessly with NetApp's enterprise storage solutions—in particular via the Commvault IntelliSnap for NetApp solution (CIFN), which generates instant backups (Snapshot™ copies) across a network of NetApp storage arrays.

Commvault leverages deduplication and data compression at the source to provide simplified backup management. This source-side approach harnesses storage-unit processing capabilities and streamlines network-based backup transfers.

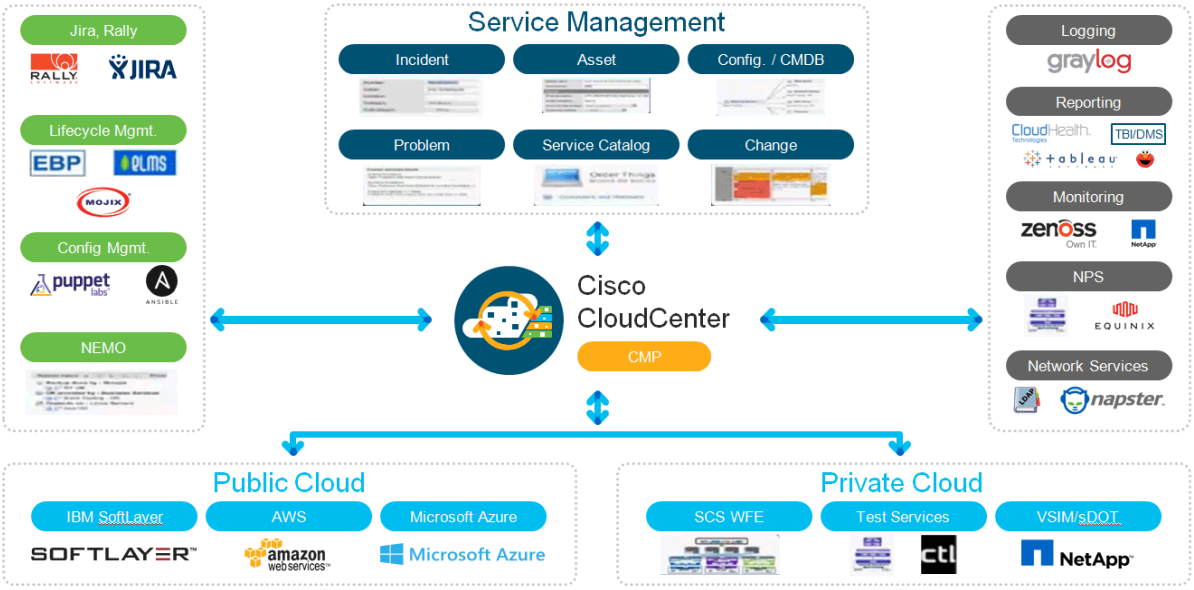
The Commvault solution has been seamlessly integrated with the FlexPod platform and has been validated by both Cisco and NetApp, making the Commvault Data Platform solution an effective tool for migrating an existing data backup to a FlexPod infrastructure.

In a multicloud environment, Commvault provides a backup solution for data initially stored in any of the public clouds on the market, including AWS (Amazon Web Services) and Microsoft Azure. According to Commvault, its solution is already compatible with 50 cloud services on the market.

The Commvault Data Platform also supports the most common platforms used by companies in the private cloud: for instance, VMware and Microsoft Hyper-V. Finally, Commvault's solution is fully integrated with the ServiceNow platform via the RESTful API set exposed by the U.S.-based platform.

6 Solution Deployment

Figure 9) Cisco CloudCenter's ecosystem.



When an IT department provides an end user access to Cisco CloudCenter, how does this solution display to the end user?

It appears as a web-based portal with a marketplace. End users in the various departments can access the catalog of cloud services made available to them by the IT department.

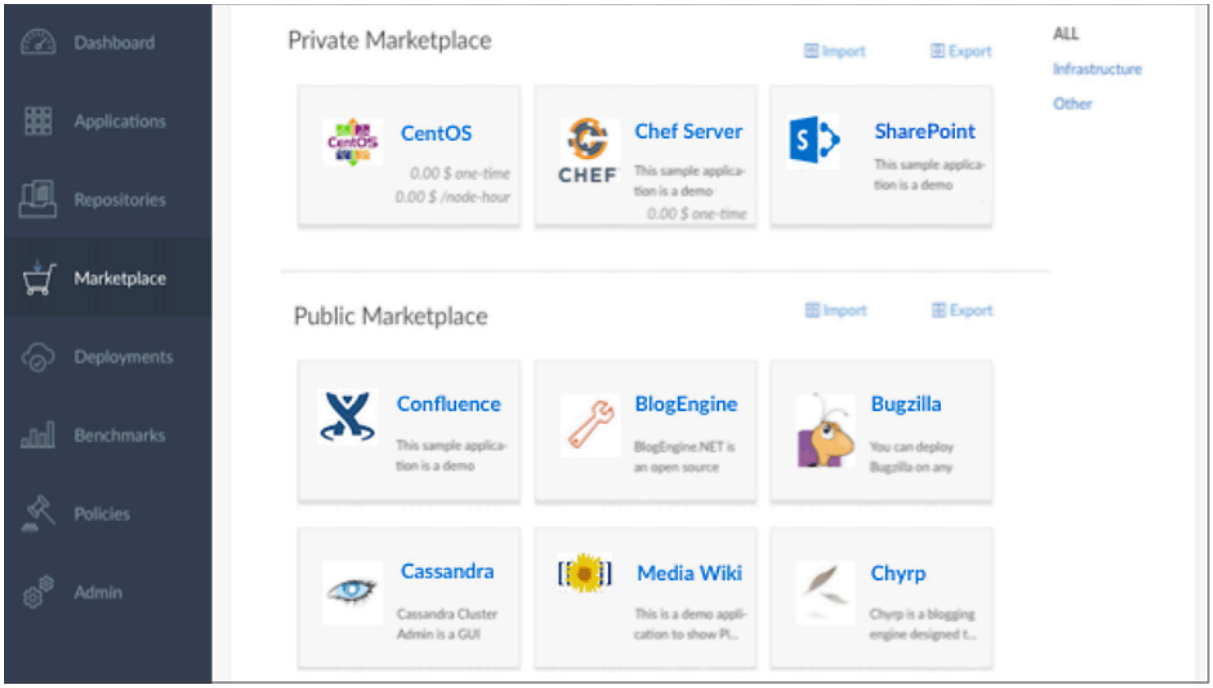
In just one click, the user can select the server type that they need to complete a project or to use a particular application. In this scenario, how is an IT service used? Regardless of whether the service is located in the company's data center, its private cloud, or a public cloud, all of the technical complexity is concealed by the CloudCenter platform, which is based on automated workflows. From the perspective of the different departments, therefore, the beauty of the solution is its sheer simplicity.

In terms of the deployment architecture, Cisco's CloudCenter offering provides an extremely flexible solution for managing cloud services. The orchestration solution can now be deployed with the major public cloud services on the market, starting with Amazon Web Services, Microsoft Azure, and IBM SoftLayer. Some 20 public cloud service operators are currently supported. Cisco CloudCenter can also be deployed in the different data centers used by the company, making true multicloud, hybrid, and multi–data center infrastructure management a reality.

Cisco has defined three deployment types that leverage Cisco CloudCenter's automation capabilities to deliver guaranteed added value to IT departments and end users.

On-Demand Infrastructure Deployment

Figure 10) Cisco CloudCenter's marketplace.



The cloud platform must allow users to provision virtual machines or OS images regardless of whether they are using a private data center operated via VMware vCenter or Cisco UCS Director, a private cloud operated via OpenStack or CloudStack, or a public cloud.

The IT department can define clear access permissions for resource utilization. Some end users can access only internal resources, while others can select whichever deployment option they want, because the platform allows the administrator to define usage and spending limits for individual users.

The ability to deploy server instances without the need to involve the IT department or the support desk presents a significant savings opportunity in the global IT resource management process.

Self-Service Application Deployment

For end users in a particular department, their needs go beyond simply provisioning an instance or a server on an internal IT infrastructure or hosted in the cloud. Cisco CloudCenter goes much further than this approach, because the platform is capable of provisioning a complete chain with software layers that are optimally configured for different usage requirements.

The platform can thus deploy a complete architecture (as defined by the administrators) to support a specific requirement—whether application servers, databases, load balancers, or web front ends—all

without human intervention. This advanced automation covers complex Java architectures as well as .NET, LAMP, Ruby on Rails, or Hadoop applications.

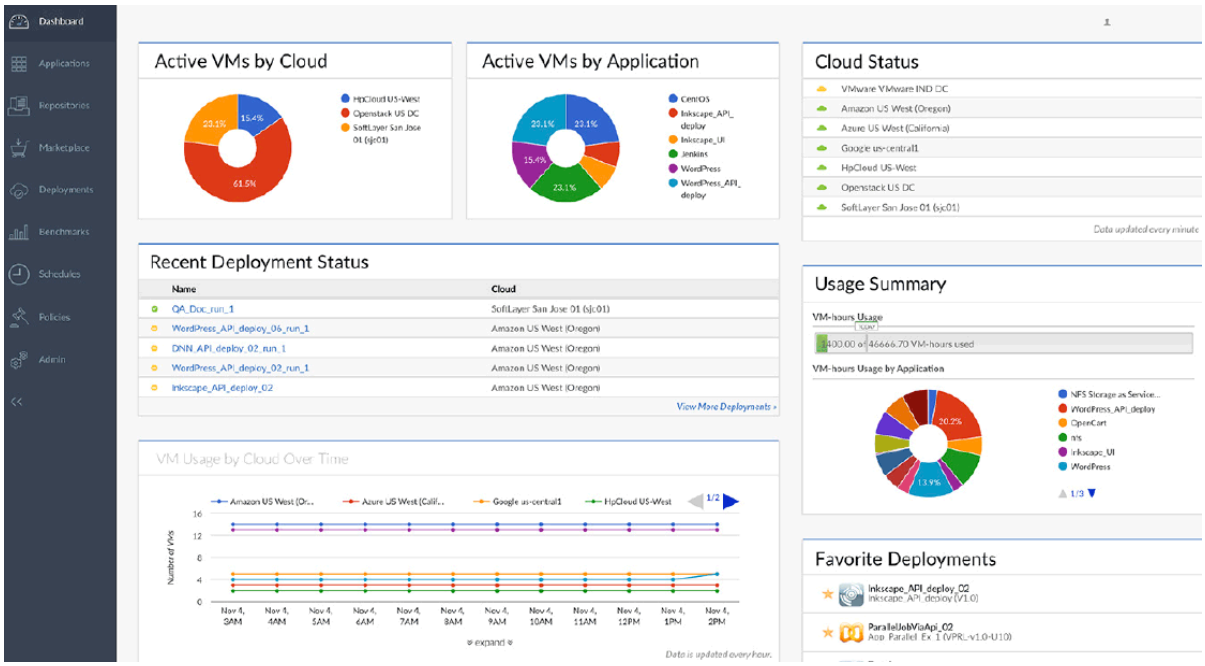
Transformation of CIOs to Service Brokers

As information systems become increasingly hybrid in nature and multicloud approaches become more popular, the role of the CIO is evolving toward that of service broker.

CIOs are now selecting and registering the cloud services that are to be operated on the company's own infrastructures or retrieved from a public cloud. The various departments can then select the services they need from their own internal portal.

Cisco CloudCenter allows CIOs to play the role of broker, overseeing the entire automation phase and managing the distribution of the services to all departments.

Figure 11) Cisco CloudCenter's reporting dashboard.



Furthermore, the platform enables CIOs to obtain a consolidated view of users' overall activity in terms of internal and external cloud services.

This global reporting capability provides full visibility over internal budget usage for all cloud service providers registered on the platform. It also makes it possible to anticipate increases in usage for certain services and to deprovision services that get less use.

7 User Experience

One of the first companies to adopt Engage ESM's multicloud infrastructure management platform is a global leader in the large-risk property and casualty insurance and reinsurance sector.

For historical reasons, the company had a heterogeneous IT infrastructure, particularly in terms of storage. In 2015, the insurance company handed over management of its IT services to a major IT consulting firm, whose objective was to move entire sections of the insurance group's information system to the cloud to modernize the global infrastructure.

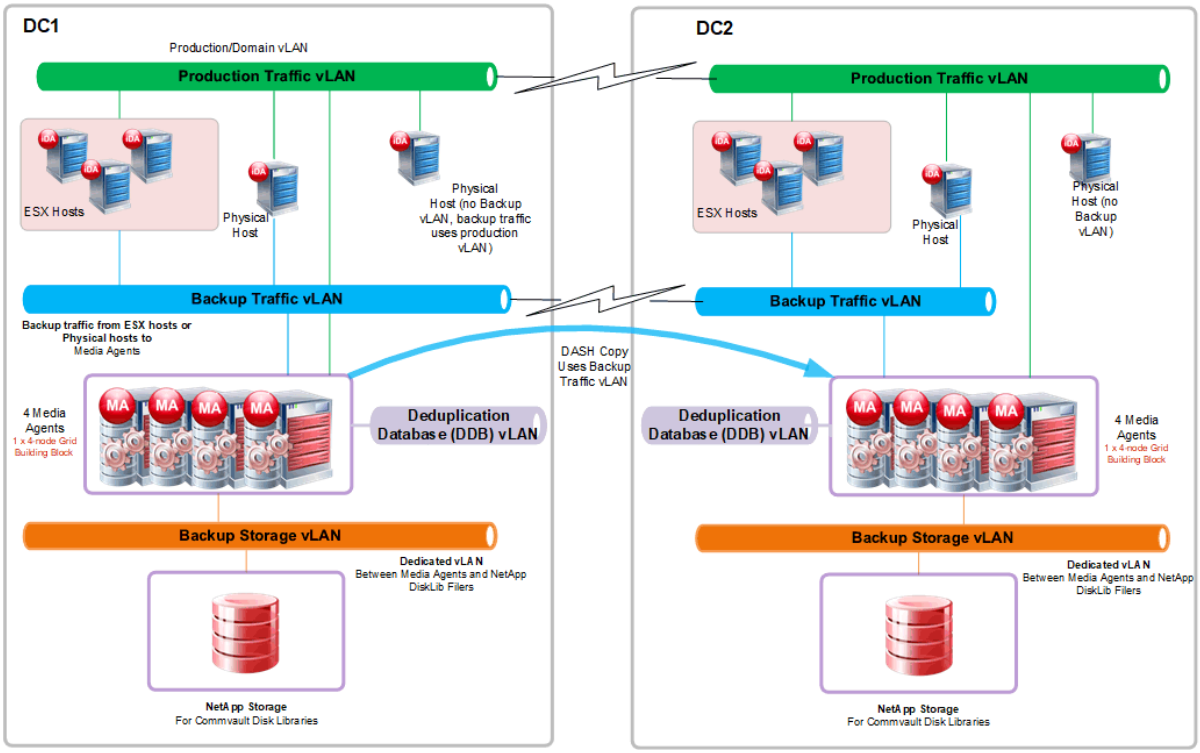
Against this background, the integrator set out to find the best solution on the market for the day-to-day management of this multicloud platform, based on the most cost-effective operating conditions for both the integrator and its client.

John Simmonds, European Alliance Director at NetApp UK, outlines the selection criteria that led the integrator to choose the joint solution offered by Atos Engage ESM, Cisco, NetApp, and Commvault: "They opted for the FlexPod solution for three main reasons. First, they were very familiar with this converged platform. They knew that the platform could handle the required workload, but, more importantly, they knew that it would be future proof—that is, capable of scaling in tandem with the client's needs. Although the integrator's decision reflected the customer's exact needs at the time the selection was made, they also had to anticipate new demands that this multicloud infrastructure would need to meet in the future, whether in six months' or a year's time."

Choosing a converged platform makes it possible to effectively respond to the challenge of scaling frequently, in a context where companies prioritize agility. Accurately provisioning an infrastructure so that it meets staggered requirements over a three-year period, as was typically the case in the past, is now a very difficult task. The platform must be able to scale rapidly to respond to the company's actual needs.

"The platform must be capable of coping with new demands and taking into account new workloads that were unknown when the project started," adds Simmonds. "We are no longer able to predict what tomorrow will bring for business, and the internal FlexPod architecture has been designed to scale easily and support future workloads. We worked with Atos on behalf of a client that, after the project had started, expressed a desire to integrate cloud services hosted by Alibaba. This cloud operator has a very strong presence in Asia but is much less common in Europe. We were able to demonstrate that this integration could be implemented very quickly thanks to the FlexPod architecture. We proved that FlexPod is capable of both supporting current workloads and providing a validated future-proof solution."

Figure 12) Customer LAN diagram.



A second factor that led the insurance company and its service provider to select the FlexPod solution was cost.

Although the purchase price of converged solutions might seem higher than that of less advanced solutions, Accenture created a cost model for this infrastructure spread out over several years. The figures showed that the FlexPod solution offered the best TCO—in other words, it was the most cost-effective option in terms of cost of ownership.

The cost of maintaining a converged solution such as FlexPod is considerably lower than for an architecture made up of separate, heterogeneous, and poorly integrated hardware.

FlexPod offered yet a third advantage for implementation at the UK insurance company's sites (which number more than a hundred across the globe): the solution's flexibility.

Configuring a workload on a FlexPod platform is a very different matter than configuring a workload on a block storage infrastructure. The latter approach involves configuring the system in a very detailed way so that it meets a specific initial requirement. NetApp and Cisco propose a different approach: a solution that's capable of scaling up or out to meet companies' requirements as they arise, rather than being based on initially planned parameters alone.

8 Application to Other Verticals

The multicloud model is becoming the model of choice for the information systems of organizations of all sizes. Because the financial services sector is subject to extremely restrictive regulations, it requires governance solutions that are tailored to this heterogeneous environment.

The popularity of this type of solution is set to increase rapidly across all sectors. In their latest annual report[10] on cloud adoption, McAfee analysts emphasized the fact that the number of firms choosing a hybrid cloud approach had tripled in one year and that in 15 months, cloud spending would account for 80% of new IT budgets. However, the report also emphasized the extreme diversity of sectors concerned.

This hybrid model is most common in the insurance sector, with 73% of respondents reporting that they had adopted a hybrid strategy. This rate of adoption is higher than that observed in other sectors, such as the transportation, distribution, and logistics sectors, where the reported rate of hybridization is 66%. The sectors with the next highest adoption rates are energy, IT, industry, media, financial services, engineering, and so on.

Even among sectors that handle "sensitive" data, such as healthcare, administration, and education, the rate of adoption is already greater than or equal to 50%. Businesses of every description, including small companies, are closely watching this seismic shift toward the cloud that is taking place in the IT sector.

Even though cloud adoption rates among SMEs lag behind those of major companies, they are still increasing rapidly. Agile performance is also a big issue for small and medium-sized enterprises. Because FlexPod is available in different capacities, the platform can be adapted to the actual needs of the company.

Here is an overview of the value proposition to be taken into account when evaluating an organization's multicloud needs:

- The impact of regulatory pressures is now extending to all organizations. With its General Data Protection Regulation (GDPR), Europe is leading the way when it comes to managing the issue of personal data protection. This regulation requires all companies to review their data governance model. Solutions that guarantee the security, traceability, and protection of data in an open cloud environment will soon become a prerequisite. In this context of strengthening data protection, the value proposition offered by Engage ESM is worth an in-depth evaluation. Leveraging best-in-class

[10] "Building Trust in a Cloudy Sky," McAfee, 2017.

solutions, their offering integrates Cisco CloudCenter for managing cloud-based services, ServiceNow for managing IT services, FlexPod for the processing power and storage space this architecture needs, and finally Commvault for its backup and recovery software.

- The objective is to take back control of cloud-based services, which, up until now, have been used by individual department managers based on a shadow IT approach. With Cisco CloudCenter, the IT department can provide individual departments with access to a portal where they can choose from the IT services available either on an internal cloud or on public cloud-based platforms that have previously been selected and configured by the IT department. All departments in the company have access to a clearly structured catalog of services. It is up to the IT department to ensure consistency from a technical viewpoint and to ensure compliance with any data security or governance requirements. In terms of providers of private cloud technology and public cloud-based services, this approach is also good for avoiding vendor lock-in. The multicloud management layer handles the specific technical requirements of each solution from the viewpoint of the users in the departments, while also allowing them to switch seamlessly between storage and compute services without disruption.
- The industrialization of processes is a driving force in the implementation of multicloud management solutions. Thanks to the Cisco CloudCenter and ServiceNow integration, the provisioning and decommissioning of cloud resources are set to reach a very high level of automation. Workflow standardization enables individual departments to submit cloud resource requests themselves, with the involvement of the IT department limited to the validation phase and verification of the requests. The gains for both the IT department and other company departments in terms of agility are clear; resources can be provided for the simplest processes in a matter of seconds, without having to call on IT department staff. Another factor driving the implementation of a global governance solution is cost control. The complexity of the pay-as-you-go pricing models used by public cloud-based services—complete with multiple hidden costs for exceeding capacity and additional charges for network traffic—can be difficult to follow, making the process of assessing actual costs quite the headache for department managers. An integrated multicloud solution allows for the consolidation of all these costs and provides individual departments with the real-time visibility they need to track the cost of each IT resource used. It also provides the basis for a fair chargeback system for the IT department, one that is based on the actual value they add in terms of data governance and protection.