



EQUINIX

THE CENTER OF
EFFICIENCY

TAKING A SERVICES-ORIENTED APPROACH TO DIGITAL ENTERPRISE

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EXECUTIVE OVERVIEW

As the digital economy explodes it is becoming increasingly difficult to keep pace with the rate of rapid change taking place in today's world. This rapid change is fueled not only by the economic recovery of recent years but also by the continued digitization and interconnectedness of everyday life. With over 50 billion devices and users connected to the Internet, the digital economy has ushered in new business models and is forcing most legacy models to evolve to keep pace.

Within those organizations that are converging business and technology to form the digital enterprise it is not sufficient to only adopt these new business models or to launch initiatives to embrace the megatrends of mobile, social, big data, and cloud. The advancement of an organization's IT functions cannot rely solely on the implementation of these megatrends or additional projects to implement the new business models. Technology teams that wish to enable and deliver against business objectives must fully embrace a services-oriented approach. This services oriented approach will allow for:

- Scale
- Incremental new or enhanced functionality
- The ability to juxtapose internal and external sourcing of capabilities
- Added efficiency
- The ability to avoid unnecessary complexity

Services can be added and scaled for growth or throttled for changing market behaviors or even aged out of existence with a sun-setting of outdated or redundant functionality.

A robust services-oriented approach and delivery model requires several foundational elements that future-proof technology delivery. At the core is a next generation network and superior connectivity that link digital hubs of critical functions and data to edge locations that provide localized applications, services and data to end users. The network must also form a membrane around enterprise applications and data, protecting the organization's assets yet allowing necessary communications to flow unimpeded. The network membrane must supply advanced capabilities that provide the conduit in and out of the enterprise, linking external partners and service providers and allowing business functions and workflows to execute seamlessly. Also critical is a continued focus on security and data protection as well as the evolution of policies and service level management that enable external services to become part of the extended business platform.

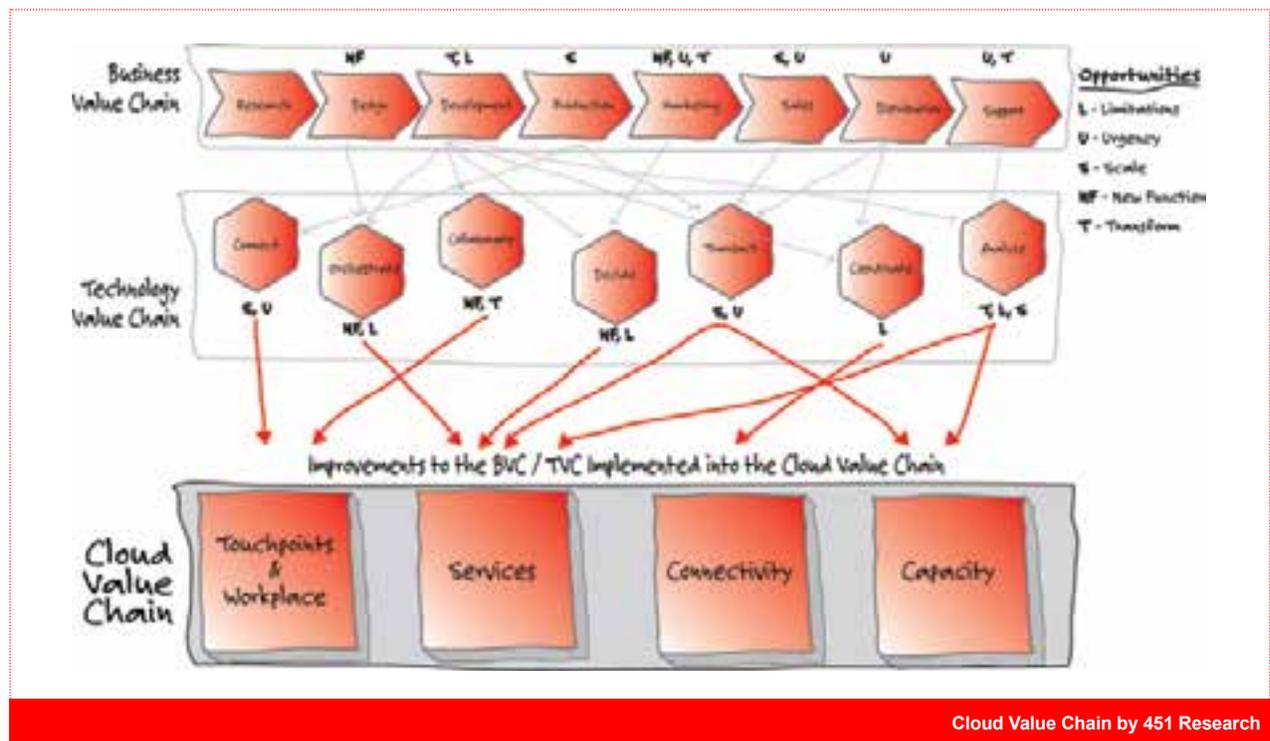
No matter how rooted an organization is in legacy IT capability, every forward looking growth oriented digital enterprise will depend on both internally hosted and externally sourced technology delivered through a blended hybrid model. The more mature an organization's capabilities are around a services oriented model, the easier it becomes to accommodate the many variations of cloud computing whether internally implemented or externally provided.

Old and new organizations alike are embracing various forms of cloud computing, with most recognizing there is no single one-size-fits-all answer. CIOs understand that with budget reductions trimming their organizations and the continued focus on efficiency and reliability, all investments will be closely scrutinized. Enabling new business models, managing the explosiveness of the 'Internet of Things', and the adoption of megatrends including cloud can all be facilitated using a services-oriented approach.

THE CRITICALITY OF SERVICES TO THE VALUE CHAIN

Given that the digital enterprise is the convergence of business and technology toward common enterprise goals, there must be dispersion away from siloed interests while still leveraging the strengths of each area. Corporate functions, lines of business, and technology teams must look for both business services and IT services that can be delivered through internally shared and pooled resources or sourced from external providers. External providers should be utilized when they can respond more rapidly, offer more cost efficient capabilities due to critical mass, or where they have a primary focus and specialize in particular services. This is where networking, connectivity, security and reconsideration of policies become paramount.

Just as business functions or IT domains have a particular focus within and across their respective value chains, there is also a set of domains that are critical to a services-oriented model. These domains are characterized by 451 Research as the Cloud Value Chain¹.



Touchpoints and Workplace represent the users and employees, together with the implications for all types of devices, locations, content, and channels of interaction. **Services** represent the delivery of specific functionality and the associated data upon which those functions, other services, or end users and employees rely. If requirements are met and policies and qualities of service (QoS) are adhered to, it does not matter if these services are delivered internally by an organization or externally through specialized service providers. **Connectivity** becomes paramount in a services paradigm, not only to support the 'Internet of Things' but because the services themselves must be interlinked for delivery of business processes and workflows that ultimately translate to revenue and shareholder value. Connectivity, by nature, must include consideration for locations and placement of services, access, and the distributed nature of services that must cater to a globally distributed digital economy. **Capacity** implies both sufficient supply as well as functional capacity to meet or exceed all attributes of demand. Capacity must be elastic and it must be configurable to allow for redirection of resources in response to changing market behaviors, both temporary and long term.

A services-oriented approach provides the flexibility to evolve a technology delivery capability, whether it is at the application and data level or at the infrastructure level. New services can be added, older services enhanced, and outdated services eliminated without the total re-architecture of business or technology systems. They can also be compartmentalized for more granular management, more independent change management, and greater cost transparency. Opportunistically the provisioning or procurement of services can be more quickly assessed and acted upon without impact to the other parts of the value chain, whether in the business, technology, or cloud value chains.

CAPABILITY IS THE SUM TOTAL OF ALL SERVICES

To achieve the most benefit from a services-oriented paradigm, a converged digital infrastructure, or even from cloud computing, an organization must look at the sum set of capabilities delivered across the full spectrum of each value chain. As new services are added and integrated with legacy capabilities, the organization will start to reap the benefits. Individual business or technology functions should not, however, attempt to adopt and implement new services or eventually enhance existing services, internally or otherwise, without consideration of the entire value chain. Certain services may provide individual functionality and point-specific capabilities, but any uncoordinated adoption will introduce inefficiency and potentially lead to confusion, complexity, and conflict across services.

Business units that contract with outside providers expose the organization to the pitfalls of 'shadow IT' and perhaps lock the organization into a long term unfruitful arrangement. Technology providers that implement services without the engagement of their business partners run the risk of services being poorly received and potentially not utilized after implementation.

Isolated decisions to procure cloud enabling technologies for internal implementation or to outsource cloud services to external providers introduce many inefficiencies. Purchasing, licensing, or sourcing decisions should not be performed in a vacuum to suit limited or short-term needs. The implementation and operating efficiency of the entire services-oriented model depends on a unified strategy with common policies for risk, security, disaster recovery, and business continuity. There should be a common approach to infrastructure and a well thought-out physical and logical topography of available services. This should include placement and performance as well as overall management of the services fabric.

In total, the aggregation of all services will yield the best collection of capabilities. When managed as a portfolio of services, the opportunity to consistently make adjustments – akin to a periodic 'buy-sell-hold' assessment – can further add to the ongoing optimization of total technology delivery that is aligned with the goals of the organization. It is through this convergence that an organization can assure itself that it is operating as a digital enterprise.



PREREQUISITES FOR THE DIGITAL ENTERPRISE

The global prominence of the digital economy is affecting organizations of all types. This is reflected not only in commerce and but also in education, collaboration and crowdsourcing, social interaction, entertainment and in new paradigms like the emergence of sharing communities.

With the proliferation of digital and smart devices including sensors, the real-time market reactions enabled by social media, together with the flood of data and content there emerges several clear prerequisites for the digital enterprise. This is particularly true with the general nature of individuals and organizations that currently demand interactions that are always on and always available, or else!

The obvious prerequisite is *connectivity*: not only the connectivity within an organization and outside to its partners and service providers, but connectivity to everyone and anyone through whatever digital means the end user dictates. Connectivity implies the channel right through to the physical media.

If connectivity is the obvious prerequisite then the next is *presence*. Users (including employees) expect the digital enterprise to be present irrespective of the time or place to access the services, data and content they demand. Presence means a digital presence of course, and it implies 24x7 accessibility. Unmistakably it also requires a user experience that meets or exceeds the user's expectations and application performance that keeps them attentive and engaged until they decide otherwise.

This digital presence coupled with the high expectations for a positive experience and rapid response performance translates to relative proximity and location. While the first and last hops from and back to the user typically fall in the domain of an Internet service provider, cellular signal provider or the growing number of Wi-Fi access points, the typical enterprise must be prepared for the user to be almost anywhere at any time. Unlike the enterprise, however, the user does not particularly care about the proximity of the enterprise or the origin of their digital experience and certainly not where their data or content is stored.

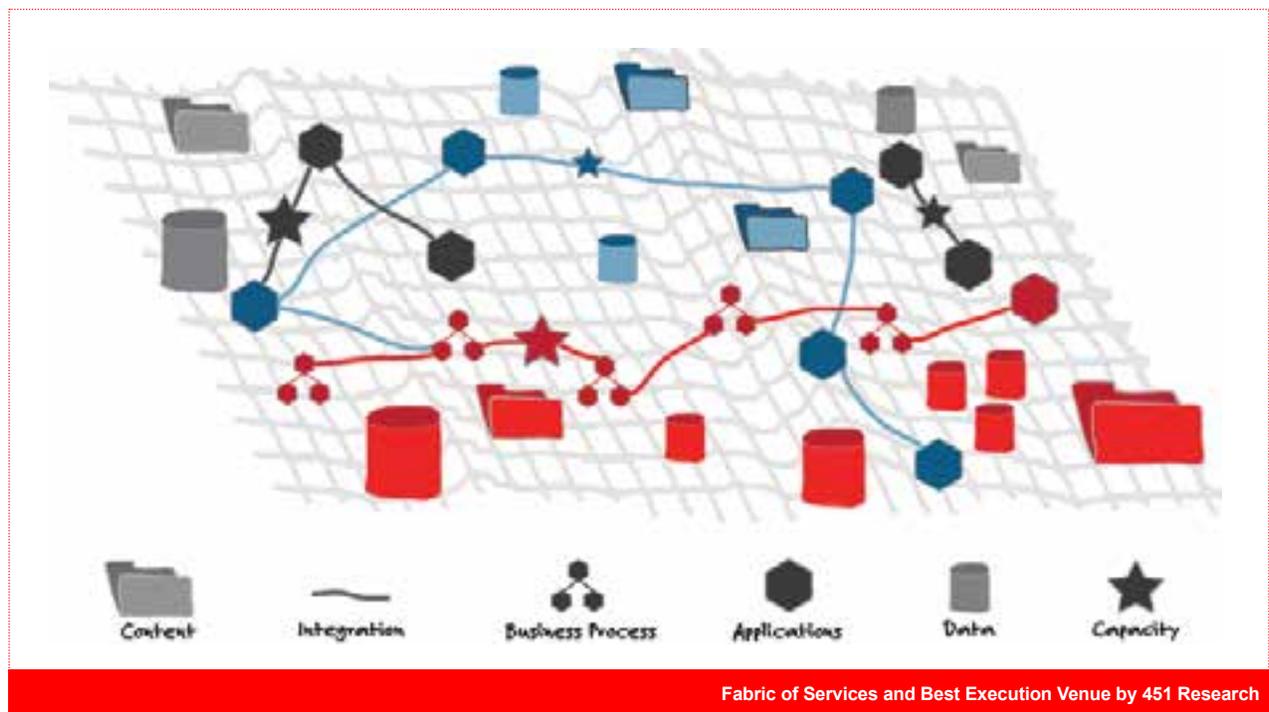
Lastly the prerequisite for users and partners alike is differentiation. While the user or partner may not require a unique experience, that experience certainly must be differentiated from other providers and it must be personalized or tailored in order to sustain interest and retain loyalty over other options. Slightly different from the user experience, is the need for users to recognize the value over other choices delivered by the business value chain of the enterprise, manifested by the technology value chain and increasingly delivered through capabilities of the cloud value chain.



ARRANGING THE DIGITAL LANDSCAPE

These prerequisites for the digital enterprise must be combined and enabled for the user over a distributed digital infrastructure. Product and service differentiation for users and partners is driven by an organization's product management team, working closely with application and database teams, to deliver richness of function and features. These functions and features are delivered over an infrastructure that is not only capable but also optimized to deliver the performance demanded by the users, partners, and of the business itself.

Combining the other prerequisites for the digital enterprise (connectivity and presence) translates to a fabric of connected capability². This fabric is the combination of all services across all locations. It includes the network membrane and security services that wrap and protect the business ecosystem while enabling authorized data traffic to and from external service providers, partners, and users. This is the digital landscape to which the successful delivery of services that drive business revenues and stakeholder value must be mapped.



Placement and integration of services is of critical importance to overcome the limits of distance and the dynamic nature of socially-driven users. Providing the user with a digital presence that is perceived to be local can only be done with careful location selection and appropriate placement strategies for all resources. Abstracting the user from these strategies must be carefully enabled through the selection of physical sites, appropriate connectivity within and across sites, breadth of access and choice of interaction channel, and with careful placement of applications, data and content.

Connectivity must be delivered across a network backbone that ties critical sites or digital hubs together but still offers links to regional sites that feed the edge and fulfill its services. This edge might be the jumping off point to the user and their device directly through ISPs or mobile carriers, or it could be a local base of business operation such as a store, a branch, a factory, or a warehouse.

The term 'best execution venue' may indeed imply a collection of capabilities housed at a collection of sites connected through a backbone that acts in concert to satisfy user or partner demand or requests for services.

EQUINIX PROVIDES THE SERVICES BACKBONE

Equinix is uniquely positioned and is already supplying the digital infrastructure for thousands of digital enterprises that have gone through or are well on their way towards a digital transformation. Equinix has a physical presence in 32 markets around the world and the world's top Tier-1 carriers, networks and ISPs are accessible through Equinix IBX® data centers for its clients to leverage. Whether operating as an Internet or mobile end point for local user access or housing local application and data services, Equinix has the locations and partner connectivity to broaden any enterprise's placement and proximity capabilities. Leveraging Equinix's sites and broad carrier neutral choices an enterprise can achieve a geographically diverse backbone and integrate with an enterprise's existing network of connections and sites to provide the digital enterprise a hybrid infrastructure without long-term commitments.

Equinix offers a growing list of capabilities that span locations, connection types, and potential partners for each enterprise.

Locations and Proximity

Equinix operates across five continents today with over 100 facilities in 17 countries. Equinix is already where most digital enterprises want and need to be. They manage almost 10 million square feet of data center capacity and have made over \$7 billion in infrastructure investments since 1998. Additionally, Equinix has a multi-year history of delivering over 99.999% availability across its global portfolio of data centers.

Connectivity

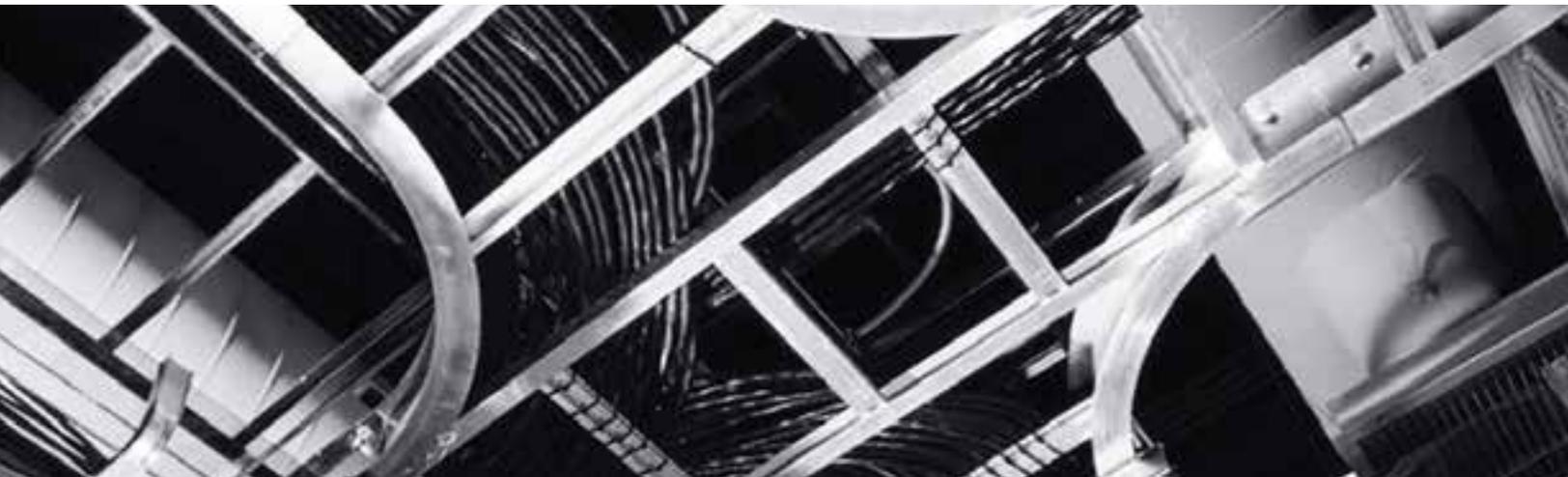
By leveraging Equinix's tremendous network of sites and unmatched portfolio of connectivity options, and through proper placement of applications and data, you can reach most of the world's population in 1/100th of a second. Across the globe Equinix supports over 120,000 interconnections and access to over 950 networks. This makes Equinix the leading global interconnection platform, providing core sites, critical high-speed interconnects, and convenient on and off-ramps to the digital economy.

Global Marketplace

Many of Equinix's over 4,500+ customers are themselves digital services providers to other clients and to each other across this networked economy. Equinix provides the broadest interconnection platform, not just for digital infrastructure but also for sourcing IT and business services. Its marketplace for each of its 4,500+ clients provides a shared digital economic zone across geographies, business markets, and industries.

Solution Validation

Equinix also provides unique skills, tools, and proven procedures for the design, validation, and optimization of projected and ongoing solution stacks. With eight locations around the world, Equinix Solution Validation Centers are available to assist an organization with the expansion or enhancement of its digital presence or implement a geographically distributed infrastructure within a country or across continents.



TRANSITION INTO A NEXT-GEN NETWORK

A services-oriented model is not a recent response to current trends. It dates back over a decade. Some organizations have had success implementing a services oriented architecture for general development environments and for delivery of other services. Together with virtualization and next generation networking as well as changes in policies around off premises processing and data residency, many organizations are well-suited for a broader exploitation of this paradigm.

Those organizations that are individually implementing one of more deployments of various cloud computing models may also be at the beginning stages of being able to more fully exploit an enterprise wide services-oriented paradigm. These implementations are not in isolation or without consideration of the prerequisites of optimal services-oriented delivery.

Today many CIOs and their staffs are working together with senior business leaders on a common set of challenges to deliver profitability in a unified fashion. This convergence of business and technology helps form the digital enterprise.

The organizations that want a truly transformational outcome will combine all of these elements into a single, long-lasting approach and implement a portfolio management strategy that will regularly calibrate their focus and refresh the most pertinent services and provider relationships along the way.

READY TO MAKE A SERVICES-ORIENTED APPROACH WORK FOR YOUR ORGANIZATION?

Learn more at www.equinix.com, or get the conversation started at 1-800-322-9280.