

Six Steps to Optimizing the Data Center for the Modern App Economy

by Tim Conley



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The Modern App Economy

Today's digital businesses are redefining what it means to interact with customers, compete for market share, and turn data that was once a burden into a revenue-generating asset. Several market trends converge to create what many are calling a "modern app economy."

The growth of modern apps, digital business initiatives, and explosive data growth have resulted from the proliferation of mobile devices and an always-on, digital culture. At the same time, IT budgets across the globe are flat or declining. Now, more than ever, IT organizations need to improve their planning and fully optimize the data center to reduce costs while enhancing performance, configuration, and capacity.

Daryl Plummer, Gartner managing vice president and Gartner Fellow, agrees:

Your placement of resources is more critical than ever to your ability to deliver the growth and competitive advantage that your CEO is expecting.¹

The Growth of Modern Apps

Consumer expectations are on the rise. Our digital culture has enabled people to get what they want, whenever they want it, wherever in the world they may be. Today's consumers expect to do business and interact with the brand through mobile apps. Reflecting this trend, these technologies are growing at unprecedented rates. For example, by 2020, 50 billion devices and objects will be connected to the Internet.²

These apps have become the face of the brand and can establish a competitive advantage. In fact, businesses are spending more than ever on improving the consumer experience. According to IDC, worldwide spending on public cloud services will grow 19.4%, almost six times the rate of overall IT spending growth, from nearly \$70 billion in 2015 to more than \$141 billion in 2019.

Businesses in every industry are contributing to this trend. According to Prashast Gupta, quantitative specialist of CEB, "91% of IT organizations allocate at least some portion of their budget to the cloud as they continue to focus on service responsiveness and cost flexibility."³

IDG Research says that a staggering 92% of IT and business leaders have a competitive

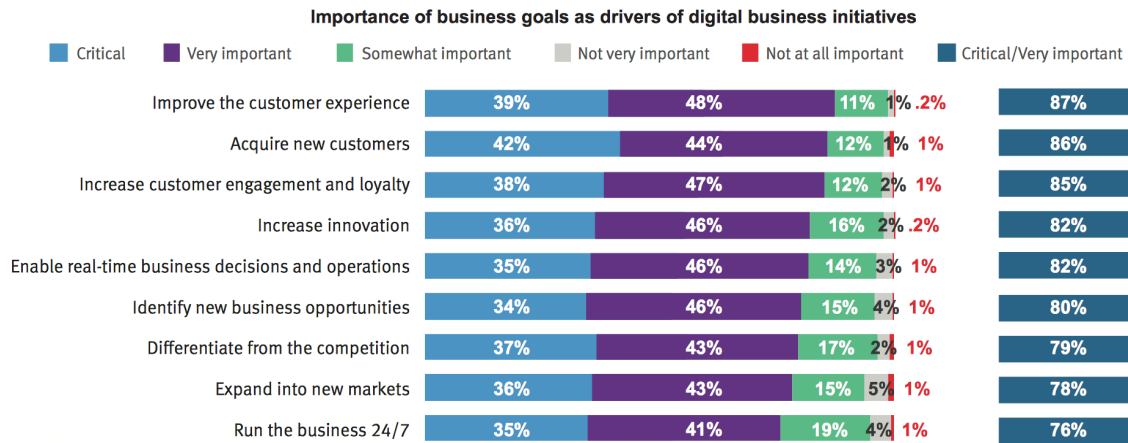
1 Gartner, "Gartner Says Eight of Ten Dollars Enterprises Spend on IT is 'Dead Money'", Accessed July 30, 2016 from <http://www.gartner.com/newsroom/id/497088>

2 Dave Evans, Cisco, "The Internet of Things; How the Next Evolution of the Internet Is Changing Everything," April 2011

3 Prashast Gupta, CEB, "How CIOs Will Spend Their Time and Money in 2015," October 6, 2014

strategy that calls for digital business initiatives, with 87% saying that improving the customer experience was key.⁴ As shown in Figure 1, improving the customer experience, acquiring new customers, and increasing customer engagement and loyalty are top business goals for digital initiatives.

Figure 1



Source: IDG Strategic Marketing Services, "Hybrid Cloud Computing; The Great Enabler of Digital Business"

While the modern app economy offers a great opportunity to businesses who choose to capitalize on it, it creates substantial challenges for the IT organization. According to Gupta, "The big advances in consumer technology have caused IT's internal customers to apply ever-rising pressure on IT teams to provide better-performing and more user-friendly corporate hardware and software."⁵ Delivering and supporting these apps while ensuring performance, availability, and fast time-to-market speeds is no small feat.

Explosive Data Growth

Explosive data growth is another characteristic of the modern app economy. As modern apps and digital business initiatives grow, so does the data they generate. While storing and managing this "big data" presents a challenge to the IT organization, businesses are right to capitalize on the opportunities data offers.

In a survey of 476 senior executives worldwide, The Economist Intelligence Unit found that "83% of those polled say that their firms have used data to make existing products and services more profitable. Over two-thirds (69%) feel that there is a case for starting

⁴ IDG Strategic Marketing Services, "Hybrid Cloud Computing; The Great Enabler of Digital Business"

⁵ Prashast Gupta, CEB, "How CIOs Will Spend Their Time and Money in 2015," October 6, 2014

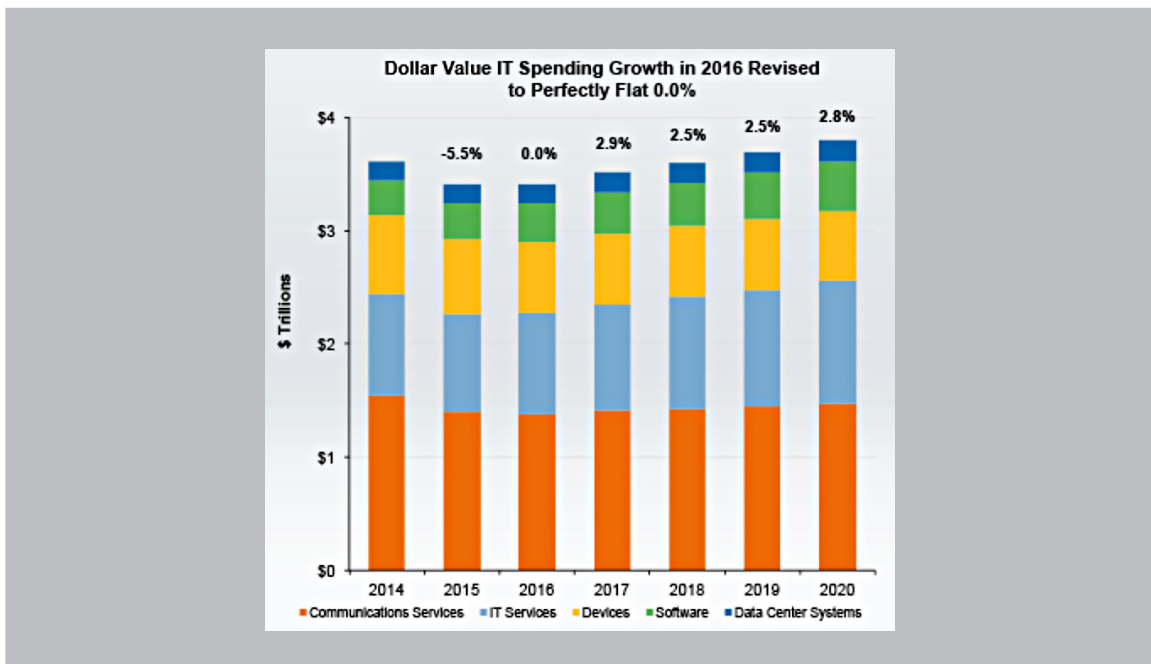
a new business unit dedicated to developing data-related products or services.”⁶

With an IT strategy and the right technologies to support it, data that was once a burden has become a revenue-generating asset. According to Naka Kondo, editor of the study, “Data considerations should be of prime strategic importance in the next three years, especially for companies looking to capture future opportunities in an expanding and changing market.”⁷

Declining IT Resources and the Shift to Business Units

Despite the great opportunity that the modern app economy brings, IT organizations are caught between declining resources and greater demands from the business units they serve. According to Gartner, IT budgets for the second quarter of 2016 were flat, as shown in Figure 2. The quarter before that, budgets actually declined by 0.5%.

Figure 2



Source: IDG Strategic Marketing Services, “Hybrid Cloud Computing; The Great Enabler of Digital Business”

One of the greatest challenges for IT in this digital, consumer-driven world is grappling with limited budgets while balancing IT maintenance with innovation. Too many IT

6 The Economist Intelligence Unit, “The Business of Data,” January 12, 2016

7 The Economist Intelligence Unit, “The Business of Data,” January 12, 2016

organizations and too much IT spending are focused on merely “keeping the lights on” which makes no contribution to business growth.

Several studies and analyst organizations offer proof of this trend. CEB Research shows that 60-70% of IT budgets are spent on maintenance and mandatory spend, leaving little to drive the business forward. Even the most innovative IT organizations allocate 44% of their budgets to keeping the lights on.⁸ “In today’s environment, any corporate function that doesn’t contribute to growth or competitiveness is ultimately expendable,” said Plummer.

An additional challenge for the IT organization is that business units are typically driving digital initiatives. With IT’s focus on maintenance over innovation, many business units are even circumventing IT altogether, finding it faster and easier to use public cloud providers to support their apps. This poses difficulties for IT leaders who need to maintain security and comply with internal and external governance requirements.

What’s more, many businesses are finding that IT decision-making is slowly shifting from CIOs to the lines of business. According to IDC, in 2015, IT projects funded by business units accounted for 58.2% of corporate IT spending.⁹ Finance, HR, marketing, and operations allocate the largest percentage of their budgets to technology.

Eileen Smith, program director, customer insights and analysis of IDC, summarizes this well. “3rd Platform technologies such as cloud, mobility, big data, and social business have created the underpinnings for business process transformation and, in some cases, business model transformation,” she said. “With such high stakes, the line of business units are increasingly taking a front seat in technology initiatives by flexing their budgetary muscle.”¹⁰

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⁸ CEB, “Improving IT Budgeting,” Accessed July 30, 2016 from <https://www.cebglobal.com/information-technology/it-budgeting/common-pitfalls.html>

⁹ IDC, “Worldwide Semiannual IT Spending Guide: Line of Business,” February 2016

¹⁰ Ibid.

Six Considerations for Optimizing the Data Center for the Modern App Economy

Given the opportunities and challenges posed by the modern app economy, it's important for IT to optimize the data center so they can quickly and easily meet the digital needs of their internal and external stakeholders.

Toward this end, there are **six key considerations for every IT organization to keep in mind.**

1. Use Analytics to Your Advantage

In the same way that the business is using data from modern apps to drive growth, IT organizations are wise to capitalize on data to drive efficiencies and innovation in the data center. Analytics and monitoring are fundamental to any IT planning endeavor. Through data analytics, IT can gain insights that enable them to improve data center performance and better serve the needs of the digital business.

There are several characteristics of advanced IT analytics. First, an enterprise dashboard offers a single pane of glass, revealing insight into the enterprise data center in a holistic view. With this data at their fingertips, IT leaders make decisions supported by detailed, real-time information on storage, server, SAN, and application assets across the enterprise.

In addition, predictive analytics are crucial for activities like monitoring cloud migrations and predicting and preventing downtime. By analyzing patterns and trends, IT can ensure the future health of the data center and achieve the organization's cloud strategy.

Additional capabilities include performance monitoring which offers insight into computing efficiency, power utilization, server operations, storage environments, and virtualization. Data benchmarking enables IT to compare performance to others in the industry and gain insights into deviations from the norm. And with detailed data, IT can drill down to discover the root causes of time-to-market delays, performance lags, and under-utilized assets.

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Lastly, a cloud-based, SaaS model offers the best in data analytics. It ensures that the analytics are cost-effective, quick to implement (in hours, not weeks), and can be accessed anytime, anywhere with results in minutes, not days or weeks. By reducing time to value in this way, IT organizations can not only react quickly to their internal stakeholders, but also drive the innovation that contributes to business growth.

2. Improve Infrastructure Utilization

As digital initiatives expand in support of the modern app economy and rising consumer demands, IT must ensure full utilization of all data center assets. Utilization, particularly when it comes to supporting data growth, is one of IT's biggest challenges. Over-utilization leads to downtimes and slowdowns that put mission-critical apps at risk. Alternatively, under-utilization wastes precious IT resources.

Data analytics can help IT organizations determine effective utilization while offering insights into accommodating peak times and additional storage provisioning. By monitoring trends and patterns in capacity and performance, IT can use data to determine exactly how the data center will react to any changes and future upgrades. For example, in support of a merger or acquisition, analytics will help identify how migrations will affect the data center. IT can pinpoint where to leverage existing technology investments and add workloads to existing equipment rather than spending money on new assets.

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3. Maximize IT Budgets

As mentioned previously, IT organizations across the globe are seeing their budgets remain stagnant or even decline. This is happening despite the fact that IT organizations are being called upon to support digital initiatives. It's more important than ever before that IT maximize every dollar.

When examining IT budgets, both capital expenditures (CapEx) and operating expenditures (OpEx) must be considered. Analytics can be used to identify savings in both areas. With insights gleaned from data, IT can achieve CapEx savings by:

- Determining whether aging equipment needs to be replaced or if the current environment can manage the workload
- Identifying which servers are coming off lease and determining whether the equipment needs to be replaced and, if so, what technologies can handle the workloads
- Evaluating utilization for servers, storage, and SAN
- Assessing whether it's possible to delay equipment purchases, maximizing the benefits of inevitable technology cost decreases and performance improvements over time
- Identifying savings from virtualization and any less expensive commodity hardware that can be used

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Essentially, analytics can reveal what hardware is needed and whether savings can be had either by improving utilization or limiting or delaying hardware purchases.

By the same token, the data shows where the IT organization might save from an operational perspective. With data insights, IT can achieve OpEx savings by:

- Identifying how automating, managing, and optimizing the IT environment can reduce operating costs
- Determining how to streamline time spent “keeping the lights on” to have more time for innovation
- Evaluating whether to centralize data in one place for a single point of management

In addition, time spent managing cloud-based analytics is minimal. With intuitive, self-service analytics and attentive support, IT requires no specialized training or high-salary personnel. Management can shape data views by business role, technology, business unit, or application to give insight to the employees who need it most. And IT can be aligned to business objectives to prevent outages and slowdowns while supporting strategic growth initiatives.

4. Protect Against Security Threats

In today's digital world, the fate of the business and its interactions with customers often rests in the hands of the IT organization. Protecting the data center from security breaches is supremely important. In 2015, businesses suffered a record-setting total of nine mega-breaches with exposed identities jumping to 429 million.¹¹

Threats to the data center come from within the organization as well. When IT lacks the agility and responsiveness to meet time-to-market speeds, business units move to the public cloud. This "shadow IT" exposes the business to security threats and carries the potential for slowdowns as larger organizations earn the lion's share of the cloud provider's processing power.

Cloud-based analytics with encryption and authentication help IT determine where applications and data may be at risk.

Cloud-based analytics with encryption and authentication help IT determine where applications and data may be at risk. Plus, predictive and user-defined analytical graphs and reports identify system slowdowns, outages, and the potential for downtime before they occur.

5. Improve Agility

The demand for modern apps is greater than ever. And IT organizations aren't always equipped to deliver and support those apps. According to Gartner, by the end of 2017, market demand for enterprise mobile apps will grow at least five times faster than the internal IT organization's ability to deliver those apps.¹²

It's crucial that IT optimize the data center in order to support the increased agility required by internal stakeholders. Data analytics can help IT quickly provision storage and server capacity to support the needs of the digital business. By maintaining a "just in time" philosophy over a "just in case" one, IT can use analytics to quickly determine how to provision under-utilized assets for more innovative modern apps and the growing data they generate.

Analytics can also help determine where virtualized environments might be a better fit and how advancements in technology offer the innovative approaches that IT needs to move the business forward. Virtualization or software-defined environments inherently offer greater agility. At the same time, they enable IT to avoid being locked into hardware vendors, spending money on specialized equipment, or increasing staff for maintenance.

¹¹ Symantec, "2016 Internet Security Threat Report, April

¹² Gartner, "Gartner Says Demand for Enterprise Mobile Apps Will Outstrip Available Development Capacity Five to One," June 16, 2015

6. Meet Time-to-Market Pressures

While modern apps can have a direct effect on customer satisfaction, they also enable the business to compete successfully and gain market share. According to CA Technologies, 43% of those surveyed believe that becoming an app-driven enterprise offers a critical competitive advantage. This is projected to rise to 78% in 2018.¹³

With so much on the line, it's no wonder that business units require faster time-to-market speeds or simply circumvent IT with public cloud providers. In many cases, particularly when IT is slow to meet the needs of internal stakeholders, IT is seen as an obstacle to innovation, not an enabler of it.

To improve IT's value and its position as a contributor to business growth, the data center must be fully optimized.

To improve IT's value and its position as a contributor to business growth, the data center must be fully optimized. Increasing performance and capacity through analytics helps ensure the lines of business have the agility and flexibility required to deploy modern apps quickly and support digital business initiatives.

Conclusion: Balancing Maintenance with Innovation

When examining the role of the IT organization in today's digital enterprise, it's clear that there are several forces at work in creating the "modern app economy." Enterprises throughout the world are capitalizing on the proliferation of mobile devices and our always-on, digital culture. While this creates great opportunities for the business, it also poses significant challenges to the IT organization whose budgets are remaining flat or even declining.

IT organizations must take a proactive approach to data center optimization in order to meet the needs of internal stakeholders and increasingly demanding customers. By analyzing patterns and trends in data, IT can optimize utilization, reduce costs, protect against security threats, increase agility, and meet time-to-market pressures. In doing so, IT can effectively balance maintenance with innovation and drive the digital initiatives that propel business growth.

¹³ Aruna Ravichandran, CA Technologies, "7 Ways to Gain a Competitive Advantage in the Application Economy," July 9, 2015

Galileo Performance Explorer®

Galileo is a cloud-based IPM solution that enables you to monitor servers, storage, and SAN from a single pane of glass—a workstation or smartphone. It offers operational intelligence about the performance of your IT environment.

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About the Author

Tim Conley brings over 27 years of IT experience in enterprise open systems and storage products supporting banking, insurance, public, and private sectors—with emphasis on power systems, IBM storage, SAN, and enterprise-wide backup and recovery. Tim is also an IBM Certified Specialist and subject matter expert in AIX, TSM, SAN, and IBM tape/disk storage solutions. Tim provides technical consulting services to IBM, IBM Business Partners, and customers in IT architecture, AIX, performance/tuning, storage solutions, and technical project management areas. Tim also conducts storage assessments for IBM as an independent Regional Systems Integrator.

About Galileo

Tim Conley and Chris Churchey, former IBM systems architects and engineers, are co-founders of Galileo Performance Explorer®. Conley specializes in storage performance and Churchey in server performance. Together, they have more than six decades of experience in system implementations, upgrades/migrations, backup/recoveries, performance analysis, and capacity planning. With a thorough understanding of user needs, Conley and Churchey originally developed Galileo as a proprietary tool to help clients of the ATS Group, a systems integration firm that they founded in 2001. Now available to everyone, Galileo was the industry's first integrated and cloud-based IPM suite. It has gained wide popularity with SMBs, Fortune 500 companies, government agencies and everything in between.



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