

Virtualization Realized.

For growing midsize businesses.



IBM®

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Introduction.
How to do more with less. The case for virtualization.

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Making the most of virtualization by optimizing delivery and automation.

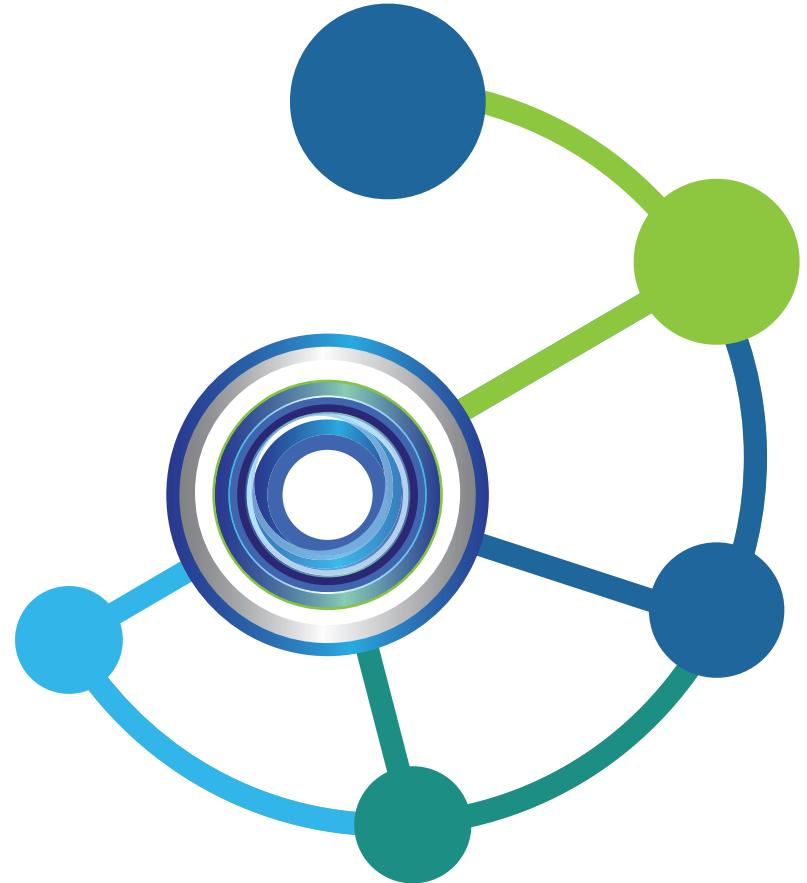
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Virtualization: Why wait?
The time to virtualize is now. Wherever you are in the process, IBM can help.



How to do more with less.

That's basically the question for midsize companies. How to increase innovation and improve performance while maintaining a focus on efficiency and cost control. Faced with lower operating and IT budgets, IT decision makers need to respond quickly to changing customers and market demands to stay ahead of the competition.



The following issues are faced by midsize organizations.

The data center is challenged.

Many midsize businesses simply do not have designated personnel to care for their data center; they have only a standard room to host the company server and storage infrastructure and have no luxury to expand. In short, they must work within their constrained space. And the same skeleton staff that oversees this room also attends to all IT needs — from desktop management to monitoring critical business applications to providing direction on how IT can advance the strategic plans of the business.

The business environment is changing.

Infrastructures across industries are also reaching a breaking point, unable to meet the demands of the constantly changing business environment. Servers and resources are underutilized, as companies continue to add new servers on a need-by-need or one-off application basis, ultimately leading to server sprawl.

The reality of data sprawl.

And it's not just hardware. As IT becomes more and more complex, not only is the amount of data increasing exponentially, the data is also becoming more unstructured, requiring additional resources to be understood, analyzed and managed.

As the pace of business continues to accelerate, the physical and digital foundations on which progress depends are straining to keep up.



4

The solution is virtualization.

Just look at the many benefits of a virtualized environment.

Reduce costs and increase efficiencies.

Adjustments during the recent economic downturn will not be reversing anytime soon. Even as general economic conditions improve, businesses will seek to reestablish profitability before adding to head count or increasing budgets. Consequently, the midsize business IT organization, which typically has the same internal departments to support as a large enterprise, will be expected to do more with the same. Increased spending will be approved only if there is a near-term financial benefit.

Improve effectiveness and competitive position.

Midsize businesses are caught in the middle of a competitive vise. Smaller businesses are nibbling at their heels and large enterprises are redirecting their resources to protect their turf. If the midsize business doesn't focus on improving its effectiveness and, by association, its business, the competitive vise will definitely tighten. Virtualization helps companies respond to computing needs faster in comparison to the lengthier provisioning cycle of dedicated server hardware.



Through virtualization, companies can ultimately create the right combination of hardware, software and services for the growing needs of their business.

Increase capacity without increasing footprint.

Computing and storage requirements are heading in only one direction—upward. Attempting to increase capacity is particularly challenging when the footprint of the data center is fixed and power availability is limited. Virtualization helps you have more workloads per server. So you can stretch your data center without growing your footprint or power consumption.

Virtualization has many benefits besides helping meet IT needs. It contributes to customer focus, innovation and revenue growth. It's not a fixed set of benefits that will fade, but a path toward increased efficiency and flexibility across a broad spectrum of demands. The challenge is knowing what this broader virtualization tool set is, and how to make it work for you. And that's where this eBook comes in. 

Worth a tweet

#Virtualization is not a fixed set of benefits that will fade; beyond IT needs, it adds to customer focus, innovation and revenue growth.



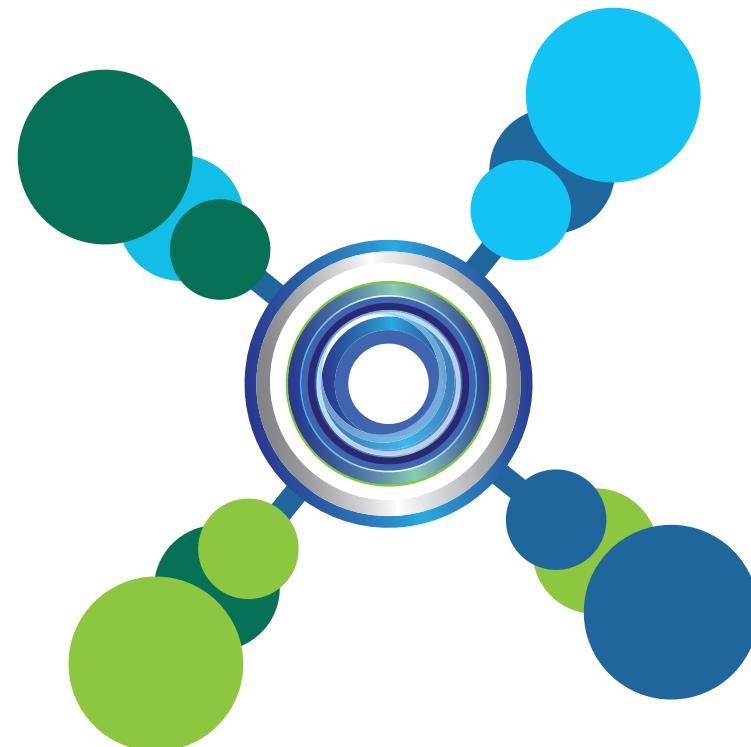
Virtualization is not a device you implement, but a journey you embark upon to realize greater and greater gains.





Getting started.

Today, you're expected to do more with the same or a dwindling budget. Yet your IT footprint is set: there's no room to physically expand and little chance to buy more servers. And most likely, your servers aren't being used to their full extent — resulting in a lot of downtime and maybe even unused hardware. Not to mention the wasted energy and cooling that comes with the normal ebb and flow of server use. The pressure is on to be more effective and efficient with what you already have. **This is why more and more businesses are turning to server virtualization.**



CASE STUDIES:

- > AriZona
- > YPB Library Services
- > Altares
- > billerbeck Betten-Union GmbH & Co. KG

Server virtualization. What it is and how IT benefits.

Server virtualization is a unique technology in that it lets you address multiple challenges simultaneously. By abstracting logical workloads from the server hardware, server virtualization gives you the ability to create and tear down workloads as needs rise and fall. As a result, you can increase server utilization rates, that is, utilize more workloads per server. You can respond to computing needs faster than with traditional provisioning of dedicated servers. And you can stretch your resources without increasing your footprint or power consumption.

Growth in server virtualization adoption.

The inherent benefits of server virtualization are significant — the proof is in the numbers. According to Frost & Sullivan, more than 70% of midsize and large businesses in the US are now using server virtualization. Of those companies, 34% are 50% (or more) virtualized. In the next five years, that number is expected to grow to 64%. Moreover, these trends are not just in the US. In an IBM-commissioned global survey of midsize businesses, 67% list virtualization as an IT project that's already under way or scheduled for implementation.



of midsize and large businesses in the US are now using server virtualization.

Server virtualization is a unique technology in that it lets you address multiple challenges simultaneously.

The key is consolidation.

Consolidation of computing power into fewer servers is a natural starting point of virtualization for most businesses. This supports the business objective of lowering costs in both capital expenditures and ongoing operational costs. Imagine fewer devices to purchase, configure and manage — plus avoidance of costly data center expansion. Question is, how and where to begin? No matter where you are in the process — just starting out or somewhere along the road — IBM, with its proven expertise, can help. In fact, we've helped our clients achieve 60%–70% virtualization, halved their transformation times and trimmed up to 50% from floor space and facility costs. All within a 6–18-month ROI. Consolidation at its best on systems you can trust.

Look what others have achieved via consolidation.

Midsize companies like yours have successfully consolidated through virtualization to gain cost-saving efficiency and improve performance. Take a look at these real-world scenarios to see where your business may fit. 



Worth a tweet

67% list #virtualization as an IT project that's already under way.



American beverage manufacturer consolidates and cuts costs by 50%.

The Challenge:

Server sprawl and processes running too slowly.

The Story:

As a leading beverage company, AriZona works within a business model that includes a direct sale company and three distribution companies. Its route settlement tasks of reconciling inventory, truck loading and finance were simply taking too long. These processes were running on SAP software,

which in turn ran on multiple Intel architecture servers. In short, AriZona's existing IT infrastructure was unreliable and lacked scalability to meet the growing needs of the business.

Consolidation was the solution. IBM Business Partner VSS replaced a sprawling estate of unreliable servers and underutilized external storage with IBM Power Systems™ servers running existing SAP applications on the IBM i operating system.



The IBM Power Systems platform enabled us to have a much more compact and cost-effective infrastructure for running our SAP applications."

—Joe DeBella, CIO at AriZona

The Results:

- Route settlement tasks that formerly occupied 12 people for 10 hours are now completed by 5 people in 5 hours, an improvement of 79%.
- Stability and performance issues have been eliminated. By running SAP applications on IBM Power Systems, AriZona has both the scalability and capacity to run SAP production and reporting apps simultaneously.
- ROI: 40% reduction in infrastructure costs, thanks to the tight integration between operating system, database and virtualization layer.
- AriZona cut overall costs in half and grew case sales by 14%.

Library firm in UK consolidates their way to better customer experiences.

The Challenge:

Performance degradation was reducing customer satisfaction.

YBP elevated the performance of their online tools and accelerated their backup process by approximately



The Story:

YBP Library Services is a company that provides print and digital books, technical services and more to libraries around the world. As such, they are dependent on technology to provide exceptional service and keep customers satisfied. So when the company realized their servers were suffering from performance degradation, they knew it was time to upgrade.

In order to boost performance of online tools and elevate customer satisfaction, YBP needed to refresh their infrastructure as well as establish a new and reliable backup solution. Working with IBM Business Partner ITS, Inc., they consolidated their incumbent server technology on an IBM Power® 720 server running the IBM i V7.1 operating system. What's more, they established a reliable backup solution by implementing an IBM System Storage® TS3200 Tape Library.

The Results:

- YBP elevated the performance of their online tools and accelerated their backup process by approximately 50%.
- Customer service and satisfaction levels have gone up. YBP can now deliver their online tools to their UK customers two hours earlier, at 7 am instead of 9 am.
- The company's internal processes are also more efficient, setting the stage for future growth.

Leading provider of business information supports innovation via consolidation.

The Challenge:

Limited space constrains rapidly growing company.

The Story:

Altares is a leading provider of business information on companies in France and around the world. They give their clients vital information on businesses they engage with, helping their clients make better business decisions. The challenge in particular: Altares needed to support rapid growth in the number and variety of their business systems while overcoming physical constraints on space and cooling in data centers. In

addition, they wanted to create an infrastructure capable of scaling and adapting to new requirements without downtime or loss of performance.

Working with IBM Business Partner Overlap, Altares built a new virtualized infrastructure running on IBM BladeCenter® servers, with Intel® Xeon® processors, and consolidated 175 physical servers to just 24 blades. The infrastructure is now split between two data centers for added resilience. They also ended up expanding the solution's capabilities without restructuring. Altares even went on to virtualize their storage and automate additional processes.

The Results:

- Moved from 175 stand-alone servers to only 24 IBM BladeCenter servers to power, cool and manage.
- Servers now take up just 33% of the floor space occupied by the previous solution.
- Capital costs are lower with more operational benefits. Altares no longer has to buy a new server for each client. They can spend less whenever the hardware is refreshed. Maintenance can occur during the day without disrupting business.

“The virtualized IBM infrastructure enables us to do more with less: using a small set of physical resources to provide a large set of virtual services to the business.”

—Christophe Le Caignec, IT Director

German bedding manufacturer consolidates IT and energizes business.

The Challenge:

System outages slow a thriving company.

The Story:

A successful German bedding manufacturer, billerbeck Betten-Union GmbH & Co. KG, was enjoying steady business growth. Unfortunately, the company's servers weren't growing with the business. The stand-alone servers were increasing the company's energy costs and causing the IT department to struggle when responding to system outages. billerbeck knew that to overcome these challenges, they would need a high-performance server and storage technology that would let the company consolidate their IT operations.

Working with IBM Business Partner NetPlans GmbH, billerbeck consolidated their IT environment onto a virtualized IBM System x® server and an IBM storage device.

The Results:

- billerbeck increased system availability and stability by more than 25%.
- They lowered their energy costs by approximately 15%.
- The company also reduced response time by more than 20%.
- Maintenance complications were also eliminated.

billerbeck reduced response time by more than



The time for virtualization is now.

As you've seen, by consolidating and starting virtualization, these companies now operate more efficiently and cost-effectively. They've optimized performance and are well positioned to meet the demands of new growth and success. You could do the same. Learn more about how virtualization can impact your business in the next chapter. 



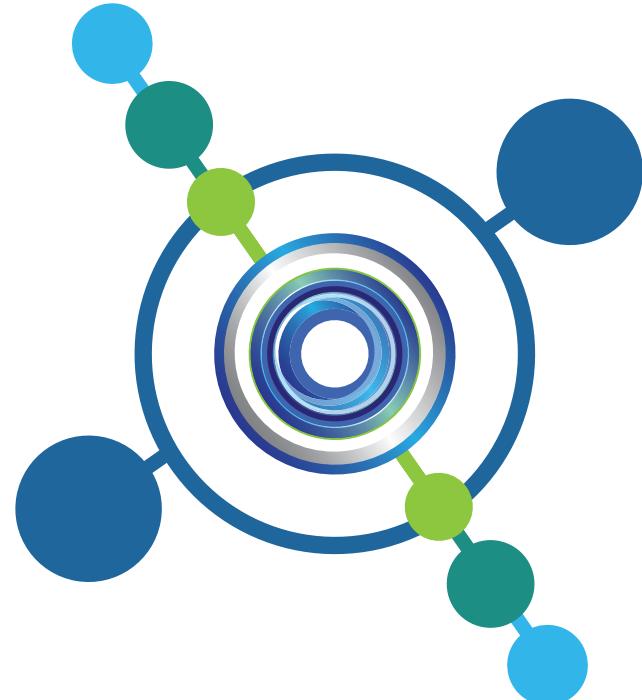
As beneficial as virtualization can be, it's like most IT solutions. It can't reach its full potential unless it's managed effectively, integrated with complementary technologies, and smartly extended into other areas of business needs."

— “Virtualization for Midsize Businesses: Keep Your Foot on the Accelerator”
by Frost & Sullivan



Virtualization done right.

Like with most IT solutions, you won't be able to fully reap the benefits of virtualization unless you manage it properly. The following chapter will share five tips on how to better implement virtualization throughout your entire organization.



CASE STUDIES:

- > Doosan Power Systems India
- > Branding, Inc.
- > Sugamo Shinkin Bank
- > Azor Ambiental, S.A.
- > Megamark s.r.l.
- > Ningbo Municipal Labor and Social Security Bureau

Five tips for successful implementation.

1. Scale management to match an avalanche of workloads.

What good is virtualization if you're just trading the management of physical servers for the management of an avalanche of virtual workloads? Prescriptive steps must be taken to manage your virtual workloads effectively. And the management of physical servers must be practiced faster, with greater precision and at a higher scale. All of which entails three things. One, you need to have real-time visibility into individual workload performance that can alert you to problems before they impact service. Two, workload relocation and rapid provisioning are essential to circumvent performance issues, ensure high availability and elevate system-wide utilization. Third, capacity planning should be based on trends of actual usage.

2. Monitor the virtualized environment closely.

Even though virtualization drives cost efficiencies through the shared use of resources, it also obscures the connection between the user and the cost of resources. Just keep an eye on what you're doing. The solution is to gather and compile resource consumption at the workload level, then charge it back to the workload users. You can also assess software inventory and license entitlements to identify oversubscriptions and unaccounted use. And you can automate routine processes and identify opportunities to standardize virtual machine images within and across departmental users.





3. Ask the right questions concerning data and storage.

When your data volume grows exponentially through virtualization, you have a lot of new questions to answer: Is the data protected? Do you need to change your policies? Are privacy regulations supported? Are the right procedures for data safety being followed? And how do you update them for the increase in data volume? All are good questions and important to ask to make the most of virtualization.

4. Migrate from previrtualized servers to servers optimized for virtualization.

Consumer electronics are constantly changing to handle more powerful apps. The same applies to servers built for virtualization. That's why it's important to devise and follow a server upgrade plan that includes servers explicitly built — from the silicon up — to support virtualization. This kind of plan will not only stretch your data space further, it will also lead to gains in energy efficiency, enabling you to handle ever-higher levels of demand.

Worth a tweet

5 tips for #virtualization implementation: scale, monitor, ask the right questions, migrate and manage workloads.



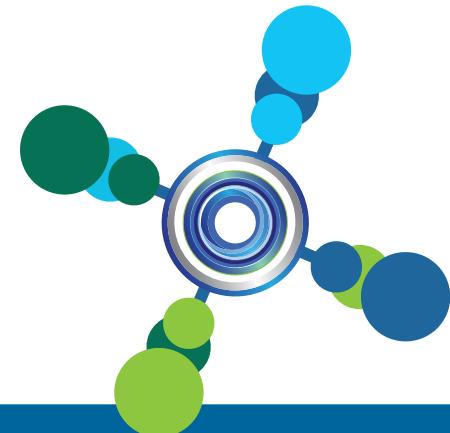
5. Improve workload management.

This is vital – the foundation for successful implementation.

When you move to virtualization, you boost cost containment and efficiency. Yet you also increase workloads and data. If not addressed effectively, you could lose your gains with clumsy workload management. IBM has solutions for precisely that — systems designed to unify and simplify management of virtual and physical environments. With these solutions, you can coordinate administrative tasks across servers, optimize your assets and merge your management objectives into a single solution. With few businesses claiming or even aspiring to be 100% virtualized, the importance of unified workload management across physical and virtual server and storage environments should not go unnoticed.

Cases in point.

The following case studies show how midsize companies like yours focused on improving their workload management to successfully implement virtualization. 



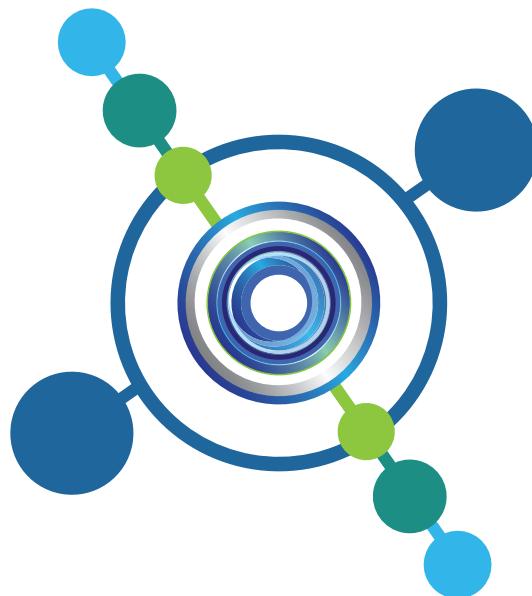
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— "Virtualization for Midsize Businesses: Keep Your Foot on the Accelerator" by Frost & Sullivan

Indian power company virtualizes more, spends less.

The Challenge:

Reducing costs while business explodes in growth.



The Story:

Doosan Power Systems India provides engineering, project management, procurement, construction and quality control services for the power and energy-generation industries. They were running their design-based application on several HP servers and had procured 900 licenses for Oracle as their ERP application. Since they were expecting to almost double in size in a period of four months, they needed to consolidate their server environment and reduce licenses in order to reduce costs.

Working with IBM Business Partner QuantM Net Technologies, Doosan first consolidated by replacing several servers with IBM Power servers. Then, to better manage workloads, they installed PowerVM® technology to create multiple virtual machines that would run multiple workloads on each physical server. And with IBM System Storage devices and IBM PowerHA® and IBM PowerVM technology, they were able to provide near-continuous application, online data backup and consolidated storage.

The Results:

- Consolidation and virtualization now support the company's growth initiatives.
- Doosan gained compact and efficient storage with backup abilities.
- IT infrastructure is now scalable and redundant.
- No additional hardware was needed for its previous IT environment.
- TCO has been lowered significantly.

Japanese firm enables better marketing through virtualization.

The Challenge:

Struggling to keep up with site usage and the analysis of data.

The Story:

Branding, Inc. is a Japan-based business that promotes the brand recognition of their customers' products. In particular, they launched a very successful fashion-themed news and e-commerce site that has one of the largest mobile sites in Japan. The challenge: keeping up with peak site usage and effectively analyzing the data.

The solution: with the help of IBM Global Technology Services – Integrated Technology Services, Branding, Inc. virtualized its Web environment and launched a customer monitoring and management tool. The solution now captures user data from the website, mobile devices and even fashion events,

compiling all of the data together in one single location for easier management. Now Branding can analyze the data to detect marketplace patterns and sales trends — e.g., which blog entries and articles best promote and increase sales.

Branding, Inc. reduced server costs by approximately



The Results:

- Branding can now identify and react to marketplace trends and sales opportunities more quickly, thanks to increased visibility into site traffic.
- They have a granular view of customer responses and purchasing data that can be used to identify successful marketing initiatives and recapture lost sales.
- Their IT systems have been simplified with a virtualized infrastructure — reducing server costs by approximately 70%.
- CO₂ emissions have been reduced by roughly 100 tons.

Bank in Tokyo simplifies IT, reduces TCO and boosts productivity.

The Challenge:

Complex infrastructure was driving up costs, limiting productivity.

The Story:

Providing commercial banking services for SMBs, Sugamo Shinkin Bank in Tokyo needed to overcome a number of issues. Government regulations were demanding stronger protection for customer data. They also had a 1,200 system infrastructure that was driving up their need for maintenance, and their maintenance costs. Plus, their operating systems were limiting productivity due to long start-up and shutdown times.

By engaging IBM Premier Business Partner MP Technologies, Sugamo Shinkin developed a centrally managed desktop computing infrastructure by implementing IBM BladeCenter® technology and

IBM System Storage devices as well as third-party solutions. Together the solutions offer efficient and secure data retention for their new computing environment; better storage of existing business files; increased data capacity; and high-security backup.

The Results:

- Sugamo Shinkin expects to lower TCO by 30% over five years.
- They can now cost-effectively maintain their desktop work environment.
- Productivity has improved with faster desktop start-up and shutdown times.
- User satisfaction has also gone up.

Over 5 years, Sugamo Shinkin expects to lower TCO by



Recycling company in Spain better manages IT, better manages growth.

The Challenge:

IT infrastructure unable to meet business needs.

The Story:

As an automotive waste management and recycling company in Spain, Azor Ambiental strives to dispose of hazardous automotive waste in an environmentally friendly way and to smelt raw material from lead batteries to recover valuable resources. While their servers and storage were delivering adequate performance, they didn't have the scalability the company needed to accommodate business growth. In

addition, their existing Dell infrastructure suffered from sporadic availability.

In short, Azor Ambiental needed to refresh their computing environment with a virtualized infrastructure of scalable, stable servers and storage technology.

Working with IBM Business Partner Mapa Informática y Telecomunicaciones, SLL, they first consolidated their Dell technology in a virtualized environment of IBM BladeCenter hardware, IBM System Storage technology and IBM STG Systems software. Using this new IT, Azor Ambiental can create virtual environments for its core apps and dynamically assign computing resources where they're most needed. They're also using BladeCenter Open Fabric Manager software to maintain availability, reassign workloads in the event of an outage and allocate I/O resources for specific demands. And to more effectively archive mission-critical data, they've attached both BladeCenter H Chassis to an IBM System Storage DS3500 Express® disk system. More than just managing their IT, they're managing to accommodate new business growth.

The Results:

- Azor Ambiental has elevated the overall availability of their infrastructure while gaining scalability and flexibility to accommodate business growth.
- New IT helps avoid prolonged downtime.
- They've optimized their use of resources and reduced energy consumption and costs.
- Company can now deploy a new server in just 35 minutes.

Azor Ambiental can now deploy a new server in just

:35

1 | Introduction

2 | Getting Started

3 | Pitfalls

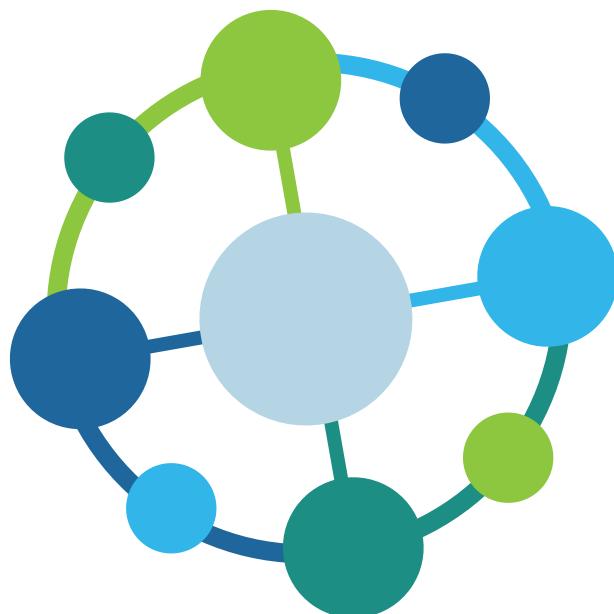
4 | Optimization

5 | Conclusion

Virtualization helps leading food distributor meet changing demands.

The Challenge:

Dated infrastructure inhibits business expansion.



The Story:

As a leading food and beverage distributor in Southern Italy, Megamark s.r.l. works closely with over 300 supermarkets to deliver high-quality food products to consumers. Because business was good and they were growing, Megamark needed increased computing power and a more scalable infrastructure to support their mission-critical applications. In addition, they wanted their infrastructure to yield a smaller footprint, reduce energy costs, and be able to optimize business continuity via a data protection and replication solution.

Enter IBM Global Technology Services – Integrated Technology Services. Starting with consolidation, the solution involved creating virtual production and recovery environments with VMware software for mission-critical applications. Also implemented was IBM PowerVM Live Partition Mobility V5.3 — this helps the company better manage their IT, balance workloads and reduce downtime. And, they now have automated backups with Tivoli® implemented on an IBM BladeCenter server.

The Results:

- The company has reduced energy costs.
- They can now leverage their fault-tolerant infrastructure with no points of failure.
- New software manages the company's computing resources more efficiently.
- Infrastructure is now more adaptable and can better respond to the changing demands of the business.
- Megamark enjoys high-performance data storage — with fast, secure backups of mission-critical data.

A Chinese government agency accelerates workload deployments by 90% through virtualization.

The Challenge:

Old infrastructure can't handle new workloads.

The Story:

Ningbo Municipal Labor and Social Security Bureau is a Chinese government agency that provides human resources and social security services. Like for many businesses and governments, deploying new workloads was a time-consuming process for the organization — not to mention error prone. In addition, they needed IT scalability to support bureau growth.

Workload deployments have been accelerated by

90%

Working with IBM Systems Lab Services, Ningbo Municipal Labor and Social Security Bureau replaced their existing servers with a cloud environment that includes IBM Power Systems servers, IBM STG Systems, IBM System Storage and IBM Tivoli software. This high-performance virtualized infrastructure now does all of the following:

- Creates virtual servers within physical systems
- Fine-tunes performance of independent workloads
- Manages virtual environment from a centralized console
- Simplifies virtual-appliance deployment and manages workloads across platforms
- Efficiently manages and monitors storage

The Results:

- Workload deployments have been accelerated by 90%.
- They can now provision a new AIX® OS environment in less than 15 minutes. This IT flexibility helps support business-level needs.
- Power consumption is down, along with the associated costs.

Managing workloads begins to optimize virtualization.

Through effective workload management, these companies were able to take the next step in their virtualization journey. They made their IT infrastructures more efficient. They increased performance of virtual workloads. And today, each of these businesses is well positioned for new business growth as a result. See how your business could do the same. Learn more about virtualization in the next chapter. 



4



How to optimize virtualization.

There's a lot more to virtualization than just servers. The underlying concept of virtualization — abstracting the logical from the physical — is not just limited to server virtualization. If you extend it into other IT domains such as storage, desktop and network virtualization, you'll have more control and visibility, along with increased agility and security. And with proper workload management, you'll increase cost efficiencies and minimize human errors as well. Let's examine each of the virtualization environments in detail.



CASE STUDIES:

- > Fondazione MAXXI
- > Dutch Cloud BV
- > Herold
- > RoGrid

Storage virtualization.

Logic dictates that if virtual workloads are increasing, IT's approach to storage must parallel the on-demand, instant scalability and high-density attributes of server virtualization. Otherwise, storage is at risk of becoming a costly operational bottleneck. If designed and managed effectively, storage virtualization can deliver business benefits in many areas, including:

- Object centralization
- File synchronization and version control
- Electronic collaboration
- Automated storage provisioning and data placement
- Alignment of storage costs with performance priorities
- Support of business analytics

Desktop virtualization.

IT can now have more control over end users' computers and the maintenance and repair of those units. With desktop virtualization, the desktop "lives" on the server and the end user device (laptop, PC, tablet, etc.) becomes an interface and display mechanism. End users benefit from having a seamless workflow among devices. IT benefits by swapping out corporate-owned desktops and laptops with thin-computing devices that cost less, require less maintenance and consume less electricity. With all the advances in desktop virtualization over the last three years, businesses should include desktop virtualization as a "must have" solution to desktop computing and management.



Network virtualization.

Whether in a server room or a high-end data center, server-to-server and server-to-storage communication will increase with virtualization. Server-based desktop virtualization further adds to network traffic on local area networks and wide area networks, as end users access their desktops through a network. While workload performance is critical to monitor and manage in this dynamic web of communication flow, it is not the only manageable attribute. Cost efficiency in the use of networks is also possible if networks are constructed with the same adaptability principles as other forms of virtualization.

To make the most of virtualization, optimize delivery and automate processes.

Optimizing delivery means equipping the user community to serve themselves—it's a self-service model. To optimize the delivery of your virtualized environments, the business side must first define its needs. Next, IT must ensure that the business

services and resources are automatically and transparently provisioned in the most cost-effective and reliable manner. Here, IBM's growing portfolio of cloud services can help form the foundation for optimized self-service delivery.

In the next portion of the virtualization journey, the goal is to automate the delivery of applications and services to the business, independent of platforms or operating systems. To reach this goal, the link between business priorities and IT operations must entail a high level of process automation. When this

happens, costs are reduced by enabling resource decisions to be made faster than manually possible. Human errors are reduced, too. Automation also directly supports regulatory requirements. For any and all automation needs, IBM has just the right products and services.

What IBM has done for others we can also do for you.

To make the most of virtualization, look how these other midsize companies optimized delivery and automated processes. 

Worth a tweet

Optimize #virtualization by ensuring resources are automatically and transparently provisioned.



Modern museum in Rome makes art more accessible, updates more convenient.

The Challenge:

Manual processes inhibit customer satisfaction.

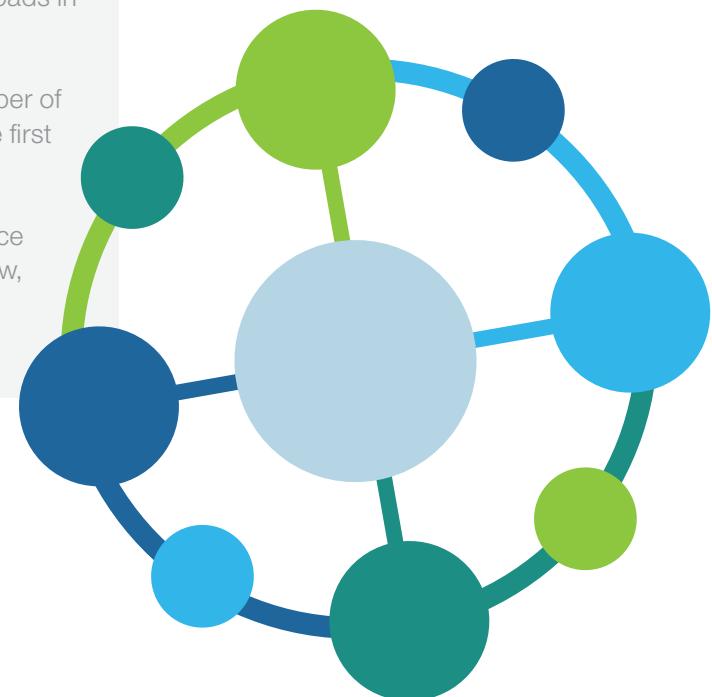
The Story:

Fondazione MAXXI operates the MAXXI National Museum of XXI Century Arts in Rome. Dedicated to contemporary art, they wanted to offer new services that would enrich visitor experiences via a smartphone application. To accomplish that, they needed a partner who offered both software and accessibility solutions.

Working together with IBM accessibility services, Fondazione MAXXI created a smartphone app that guides visitors through the museum and uses smart integration for automatic detection of rooms — all in multiple languages. In addition, the museum can now update the app automatically based on information they enter into their DB2® Enterprise data server.

The Results:

- The app had more than 1,250 downloads in the first week of availability.
- Fondazione MAXXI expects the number of museum visitors to rise by 20% in the first few months of the app's release.
- The museum no longer has to produce new content for their audio guide. Now, they simply update the app through their data server.



29

High-tech firm virtualizes to offer clients more, better, faster — for less.

The Challenge:

Inflexible technology creates inflexible infrastructure, slowing company growth.

The Story:

As an IBM Premier Business Partner, Dutch Cloud BV offers small and midsize businesses a range of cloud-based services, from fully managed IaaS to disaster-recovery solutions. Their challenge focused on three needs:

1. Offer a balanced platform — standardized enough for easy scalability, yet specific enough for different types of workloads.
2. Enhance service levels for clients while keeping costs low.
3. Enable rapid provisioning of new cloud services with a high degree of automation.

The solution? Dutch Cloud implemented IBM SmartCloud Provisioning software to simplify and standardize its cloud infrastructure and improve efficiencies through dynamic provisioning and self-service capabilities. This virtualized environment identifies customers on the network level versus the service level, increasing security and flexibility to deliver any type of architecture within the service layer.

Reduced time to provision
200 virtual machines by over



The Results:

- Dutch Cloud can accurately capture and analyze highly changeable customer requirements on an ongoing basis to better align with client needs.
- Moving from the static model to highly dynamic service delivery, the company can offer standardization, along with provisioning, that suits each client's workloads.
- They can now ensure that each customer environment runs securely and in isolation — a priority in delivering true "private clouds."
- They increased revenue six fold while operational costs remained flat.
- The time needed to provision 200 virtual machines was reduced by over 90%.
- The company decreased administrative workload by 70%.

Virtualization powers a rapidly growing multimedia company forward.

The Challenge:

Buying more hardware to solve problems.

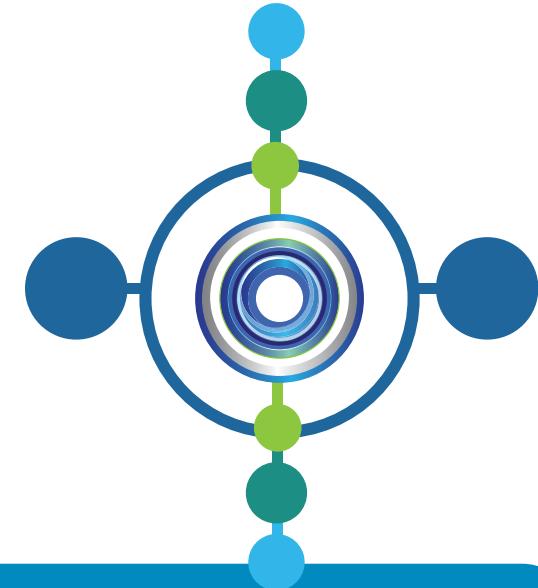
The Story:

Herold is a provider of multimedia search and location-based services, as well as a print-focused directory services company. They're the kind of business that must deliver innovative, highly scalable solutions at low cost and high speed. Which is why, internally, they needed to help their teams develop new software and generate new value — without constantly buying more hardware. What they really needed, however, was a partner, one that could offer robust solutions and better capacity planning, and relieve the constant pressure to procure hardware.

The solution was for IBM to host Herold's entire production environment in its data center. This keeps Herold ahead of their competition. And the pay-as-you-go model means they can add or remove hardware based on need. No more buying infrastructure just to solve issues with capacity.

The Results:

- Herold can now deal with enormous amounts of data and requests quickly and efficiently.
- The company has enough computing power, I/O and storage for the highest levels of availability and performance.



With this standardized platform, it is easy to use IBM tools, middleware and servers to build optimized development, preproduction and production environments.”

— Jorg Weis, Herold Operations Management

Researcher in Romania fosters scientific advancement through virtualization.

The Challenge:

Outdated IT delays progress.

The Story:

The Romanian National Grid Initiative (RoGrid) delivers high-performance computing for research projects in medicine, life sciences, aerospace and meteorology. Based at Polytechnic University of Bucharest, the company's projects produce many terabytes of data that must be made available for high-speed analysis both during and after computation. They need superior performance, flexibility, reliability, cost-effectiveness — and the ability to match different computational requirements to the most appropriate hardware architecture.

Partnering with IBM, RoGrid established an IBM BladeCenter supercomputing environment that now supports multiple-processor architectures, matching each different computational workload to the ideal platform. The solution also acts as a private cloud, providing an array of flexible virtualized computing

resources, backed by fully virtualized data storage with highly parallelized access. As a result, RoGrid can now scale resources up or down to meet changing requirements in a completely seamless way.

 Our computing resources are now completely distinct and optimized for different tasks. Yet they're all managed in the same way. BladeCenter really enables diversity without unnecessary cost or complexity.

—Emil Slauschi, Associate Professor,
Computer Science and Engineering

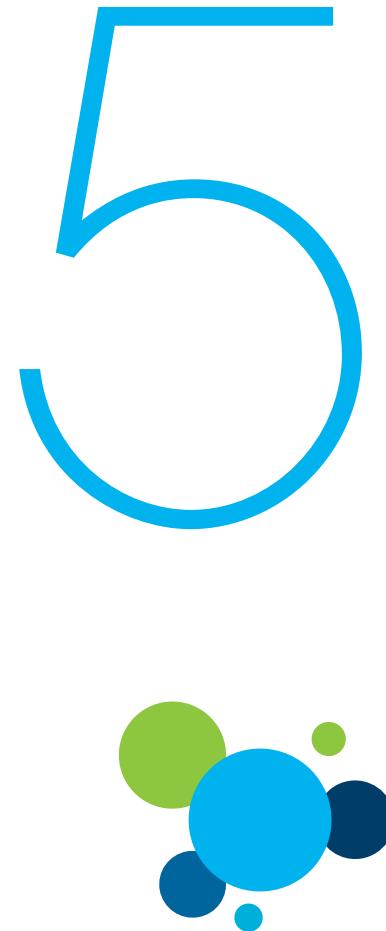
The Results:

- RoGrid can tackle major scientific, medical and engineering challenges for cutting-edge developments in aeronautics, seismology, image analysis and other scientific arenas.
- Company can optimize its computing resources to meet each specific computational requirement, with the flexibility to orchestrate resources as required.
- Improved system and storage performance ensures optimum responsiveness and system availability.
- Infrastructure is now consistent and easy to manage, saving admin time.
- Long-term operational costs are low and cost effective.

The bottom line? Virtualization simply works.

Coupling delivery optimization with process automation can yield increased performance for workloads and greater efficiency within your infrastructure. Best of all, it better prepares you to meet the demands of a growing business. 





Virtualization. Why wait?

Through 14 case studies from around the world, you've seen the proof of how virtualization can help you increase capacity and efficiency without increasing your footprint or power consumption.

It gives you control over the avalanche of data that comes with greater workloads.

It delivers greater speed, efficiency and increased flexibility.

It helps you identify problems — before they're problems.



Virtualization gives you the control you need over applications and data so that you can focus on business strategy and growth instead.

Ultimately, it helps you do more with less. And there's no need to wait. No matter where you are in the process of virtualization, IBM is here. We have the experience and expertise you need to help your

business grow and succeed through virtualization, and can customize a program for you that suits your needs exactly. Just ask any of the 14 organizations featured in this eBook. 

>**To get started, simply visit ibm.com/midmarket/us/en/virtualization.html or give us a call at 1-877-426-2223.**



“...midsize businesses should not wait for proof to materialize virtualization’s broader and more holistic benefits in other areas touched by IT—notably storage, desktops, and networks. They must move forward with purpose.”

— “Virtualization for Midsize Businesses: Keep Your Foot on the Accelerator” by Frost & Sullivan



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