

THE SMARTER DIGITAL TRANSFORMATION COOKBOOK

A TECHNOLOGY RECIPE BOOK

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Digital transformation today, just like the perfect dish, has a few key ingredients. This unique cookbook details five essential recipes in the process: Cloud, Artificial Intelligence, Hardware, Professional Services and Sustainability.



Cooking up the Smarter Digital Transformation Recipe



As I enjoyed a fine dinner one evening, surrounded by friends and family, I was struck by how similar digital transformation is to expert cooking.

Like professional chefs, technology leaders have to select the appropriate ingredients and the most suitable methods to execute the perfect dish. The perfect dish requires a combination of the right equipment, ingredients, timing, and skill. Digital transformation, too, is made up of crucial components that must be executed at the right time and in the right proportions. Cloud, AI, infrastructure and hardware all contribute to making sure an organization is digitally transformed so as to achieve long-term business and climate sustainability goals.

Sometimes, when savoring a delicious dish, we marvel at the complexity of flavors, unable to figure out what ingredients or techniques are used. It feels like magic; but when we read the recipe, all becomes clear. The same way, digital transformation can appear to be a messy, complicated process with many moving parts, but having the right 'recipe' can make the process much less daunting.

The cloud, for example, can present organizations with the first digital transformation hurdle. Today, it is taken for granted that migrating to the cloud is key to digital transformation. But should the private, hybrid, or public cloud be used? Should on-premise servers still be retained? What if cloud repatriation is required, if business or expense targets are not met with the cloud? Most likely, the optimal solution is to find a balance of all these components, the way the ingredients in a dish are used in different proportions for the right taste.

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To do this, having the right hardware is crucial. Just as bakers need their ovens and chefs need their stoves, technology leaders need their servers and chips – and these should keep up with the times. Lenovo’s ThinkAgile solution and AMD servers, for example, are able to handle today’s and tomorrow’s workloads, the way a good kitchen can handle a variety of cooking methods. A solid hardware base is indispensable for future innovation and creativity.

No matter how perfect the recipe is, however, no dish is complete without salt. In the way salt enlivens a dish, AI brings out the flavors of all the technology solutions across the stack, from the network to applications.

Lastly, a recipe should be timeless and easy to replicate, so that diners can enjoy the same dish repeatedly. At the same time, it should adapt to the changing tastes of diners. Digital transformation, too, should be an ongoing process that can adapt to new situations. To do this, organizations can turn to managed services such as Lenovo’s TruScale which deploys the collective wealth of our engineering expertise.

As the Greek philosopher Epicurus said, “We should look for someone to eat and drink with before looking for something to eat and drink”. The same can be said for digital transformation – it’s always a team effort. We hope you’ve enjoyed cooking up some digital transformation with us!

Kumar Mitra

General Manager, Infrastructure Solutions Group
Lenovo Central Asia Pacific



CLOUD



Cloud technology is undeniably central to any digital transformation initiative. Indeed, many consider it to be the catalyst for cutting-edge enterprise tools, such as artificial intelligence and machine learning.

Cloud migrations are mission-critical. They're also really complicated — which is why IT decision-makers often turn to partners for security expertise, cost management strategies, and migration roadmap development.

Ingredients:

To start, organizations need to consider the following ingredients:

- Security
- Open architecture
- Customizability
- Sustainability
- Trustworthiness
- Single point of contact
- Global coverage
- As-a-service solutions
- Experience and expertise

A smarter approach to cloud

The need for smarter infrastructure and truly globalized operations drives businesses to the cloud. However, “cloud first” is not the same thing as “cloud smart”. All cloud capabilities need to be evaluated and weighed for their alignment with business operations for cloud adoption to be simplified.

The cloud is not a one-size-fits-all solution — every customer, every strategy, business vision, short- and long-term goal, and every workload

needs to be understood, alongside the critical measurements for success. “Cloud smart” is an approach that considers all the aspects of a workload or business requirement.

Lenovo's approach to cloud infrastructure represents a best of-all-worlds approach, enabling IT leaders to customize the optimal mix of public cloud, private cloud, and on-premises infrastructure solutions. The following are three ways Lenovo's approach gives your organization a competitive edge:

1. Efficiency

Lenovo offers a new approach to infrastructure that audits processes and applies automation to optimize and reduce workloads fully. Leveraging open ecosystem architecture provides the flexibility to integrate with the organizations' previous infrastructure investments while levelling up to the efficiencies and advances of cloud computing. With increased visibility and the capability to automate workflows, IT decision-makers maximize their team capacity and significantly reduce organizational downtime.

2. Security

Security considerations remain top of mind for IT decision-makers leading their organizations through digital transformation. Hybrid cloud is a strong choice from the perspective of security architecture, combining the flexibility and accessibility of the public cloud with the control of the private cloud or on-premises servers. It's also the optimal solution for situations in which regulations or policies dictate where and how data must be stored.

What's critically important is a seamless transition — building a cohesive architecture that's easy for IT teams to manage and frictionless for employ-



ees and customers. Success depends on a partner orchestrating a unified cloud solution engineered from server to software.

Security is built into every aspect of Lenovo's cloud solutions. As the only data center provider with end-to-end manufacturing, Lenovo owns the entire manufacturing supply chain to ensure the integrity of the technology. Lenovo's best-in-class data protection delivers intelligent data management across diverse cloud environments and workloads, streamlined automated security management, and accelerated application performance.

3. Agility and scalability

The true benefit of a cloud strategy comes not just from finding better ways to do what IT already does, but in leading the organization in new directions. This next-level innovation requires agility and customization, which depends on the cloud provider's flexibility. An effective infrastructure partner delivers scalability in a customizable, less capital-intensive framework.

Lenovo TruScale Infrastructure as a Service gives access to the latest data center technology, industry-leading software, and expert services in a pay-as-you-go model. Everything from the pocket to the cloud is available on demand, from an efficient single point of contact in a cost-efficient OpEx model.

The case for hybrid/multi-cloud

When it comes to cloud, a one-size-fits-all approach is a myth, because enterprise needs vary depending on a lot of factors. Therefore, it's advisable to choose a tech partner capable of tailoring end-to-end solutions specific to an organization, covering in-house design, manufacturing, services, and global support capabilities.

Unlike a typical OEM, ODM, or SI, which would require a third party for their supply chain, an end-to-end service provider can significantly reduce an organization's overall costs. From planning a forecast schedule, procuring parts, and building the product in-house, to delivering the product to customers— complexity is minimized, eliminating potential delays.

As enterprises experiment with various use cases for AI/ML, automation, Internet of Things, quantum computing, and high-performance computing, a hybrid or multi-cloud approach can address challenges such as flexibility, security, and integration capabilities.

For instance, Lenovo's open cloud architecture enables businesses to easily run containerized workloads, due to its compatibility with VMware vSphere with Tanzu, Azure Kubernetes Service, and RedHat OpenShift.

According to VMware's research, 87% of enterprises leverage at least two public clouds, and the reasons are clear. Enterprises find that a multi-cloud strategy supports the needs of their entire

application portfolio while addressing challenges posed by their legacy infrastructure.

Some other benefits of multi-cloud are as follows:

- 42% faster app release times, leading to 35% more revenue
- 41% cost decrease, with fewer hours spent on IT infrastructure and security incidents
- 35% productivity savings across a distributed workforce

Is cloud repatriation the answer?

Enterprises scaling up their workloads often find that the cost of public cloud also goes up, which in turn directly impacts their profit margin.

This is where cloud repatriation comes in, with organizations moving their workloads down from the cloud and into a colocation facility or an on-prem data center. However, cost alone should not be the reason for cloud repatriation.

What enterprises need to consider:

- **Performance** - Applications with extreme latency sensitivity, long-running I/O-intensive periods, or large datasets that require transport between various locations might perform better in an on-prem environment than in the public cloud.
- **Compliance** - For companies bound by industry and governmental compliance regulations, repatriating workloads on-premises ensures that they abide by the rules.
- **Security** - Many customers assume that the data they place in the cloud is protected and secured by the cloud provider, but this is not always the case. Regardless of where sensitive information and data reside—in the public cloud or on-premises—organizations need to implement security controls.

Previously, many businesses were deterred from running workloads in an on-premises environment due to substantial CapEx costs to buy servers, network gear and other equipment, as well as a physical location for the data center. Today, OpEx

options are available to make on-site or colocation options more affordable.

In terms of configuration, applications built using modern tools, such as Kubernetes, can be more easily repatriated in the future, since they allow consistent infrastructure for running on the software-defined data center (SDDC) or Kubernetes instance without modification. Additionally, modern application environments allow for turn-key microservice-based applications. These ensure that applications are built in a consistent manner and leverage the same tooling for updating them after repatriation.

To address the complexity posed by a multi-cloud approach, VMware introduced Cross-Cloud, a suite of SaaS solutions. The suite expands the capabilities of VMware's product portfolio for a multi-cloud world, enabling customers to select the services they need to build, run, and enhance the security of applications across any cloud. With Cross-Cloud services, customers can accelerate innovation through faster cloud adoption, and enjoy the freedom and flexibility of being able to work across any cloud environment.

At the end of the day, designing and executing a cloud strategy should be treated as a continuing journey, rather than a one-off project. Mistakes are often part of that journey, but the good news is that enterprises can already base their decisions from the thousands of demonstrated use cases across industries. So whether public cloud is still the option, or private cloud has been chosen as a way forward, there are countless best practices to follow.

Likewise, many have chosen to adopt a hybrid or multi-cloud approach, simply because of the rising needs of the business. One particular approach to multi-cloud is cloud repatriation, giving enterprises better control of their data, and allowing their applications and workloads to exist in the best platform possible. Gone are the days when enterprises were limited to either public cloud or on-prem data centers, and cloud service providers are adjusting to this paradigm shift. In the end, this is a victory for customers everywhere, who are given better control of how they want to manage their data.



ARTIFICIAL INTELLIGENCE



Artificial intelligence (AI) is no longer a futuristic concept, just as molecular gastronomy is no longer a novelty in the culinary world. AI is already here, transforming businesses and industries across the Asia-Pacific (APAC) region.

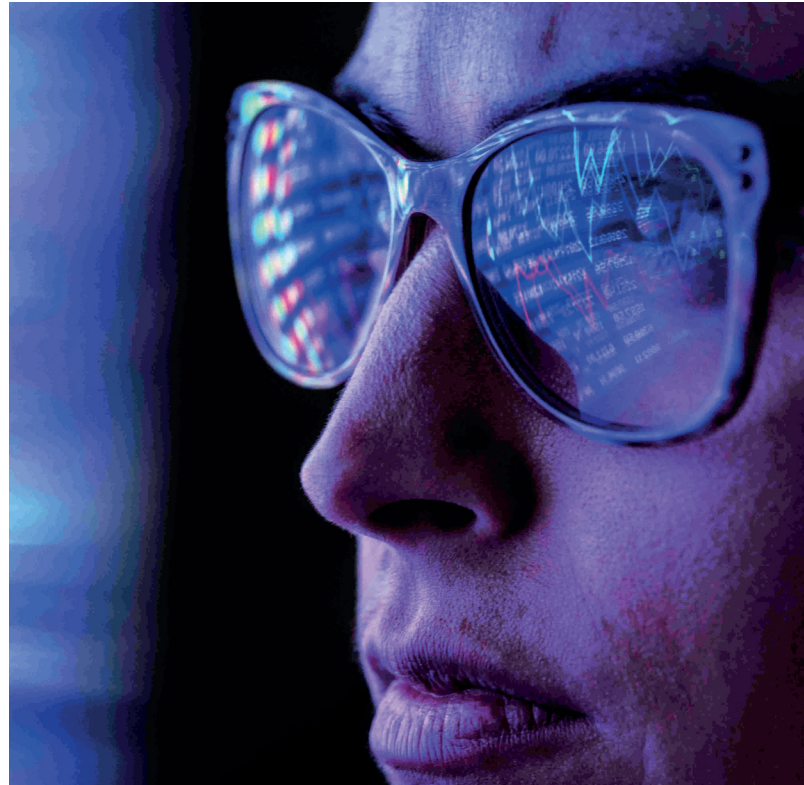
According to the IDC InfoBrief, “CIO Technology Playbook 2023,” which presented a custom study commissioned by Lenovo and AMD, AI applications are set to reach broad deployment, with over 80% of IT and business decision makers from various organizations across APAC planning to use AI within the next 12 months.

This data underscores the pivotal role of AI in the digital transformation journey of businesses in the region. The adoption of AI is not limited to a few industries or business functions. It is being embraced across the board, signaling a significant shift in how businesses operate and deliver value.

Ingredients:

These are the components that enterprises need to cook up successful AI applications.

- High-performance servers
- Cutting-edge chips
- Network controllers
- Machine learning libraries
- Virtualisation software
- Operating systems
- Remote technical support services



The role of AI in digital transformation

AI is a key ingredient in successful digital transformation. It enables businesses to automate processes, improve efficiency, and make data-driven decisions. The IDC InfoBrief reveals that IT operations, security, as well as customer service and support are the top three business processes where AI applications are being deployed.

In IT operations, AI can automate routine tasks, predict system failures, and optimize resource allocation, leading to improved efficiency and reduced costs. The use of AI in IT operations is not just about automation; it is about making IT operations smarter and more responsive, enabling them to support the rapidly changing needs of the business.

In the realm of security, AI can enhance cyber resilience by detecting anomalies, predicting potential threats, and responding to incidents more quickly and accurately. AI-powered security applications use machine and deep learning algorithms to detect patterns, incidents, and events on the network, enabling them to identify potential cyberattacks before they can cause significant damage.

In customer service and support, AI can provide personalized customer experiences, automate routine tasks, and analyze customer feedback to identify areas for improvement. AI-powered customer service applications can understand customer needs and preferences, provide personalized responses, and learn from past interactions to improve future customer interactions.

Lenovo's commitment to AI

As digital transformation continues to evolve, so too does the role of AI. It is not merely an ingredient in the process, but a tool that shapes the transformation itself. Lenovo's approach to AI illustrates this dual role.

Lenovo has made significant investments in AI, resulting in a record annual AI infrastructure revenue of over US\$2 billion, with an additional US\$1 billion investment over three years to accelerate AI deployment for businesses around the world.

As part of the additional investment, Lenovo is committing US\$100 million to grow the Lenovo AI Innovators program, which has delivered a record 150+ cutting edge AI solutions created with 45 leading ISV partners in the program's first year. Leveraging the AI Innovators end-to-end ecosystem, the new solutions are bringing AI from the lab to scale and enabling the dramatic technology shifts underway within high-growth sectors. With the new solutions, enterprises can more rapidly deploy and leverage cutting-edge AI capabilities, like generative AI, computer vision, voice AI, and virtual assistants.

Lenovo is also delivering its AI solutions via TruScale Infrastructure as a Service for ultimate flexibility as the company continues its service-led



transformation. AI Innovators partner, AI Hathboor Bikal.ai and Lenovo are pioneering the service-based rollout of an AI-enabled data center at Sharjah Research Technology and Innovation Park (SRTIP) in the United Arab Emirates (UAE). Leveraging Lenovo TruScale HPC and AI as a service, the collaboration is providing public and private organizations with the ability to access AI capabilities to support citizen safety and security through digital transformation projects across education, R&D, retail, oil & gas sectors. The AI-enabled data center's computing resources will also help organizations bring the benefits of advanced AI features, like GPT-3 to their own operations. Designed to align with the UAE Net Zero 2050 policy, the data center is the first in the region to use industry-leading Lenovo Neptune™ direct water-cooling to deliver enhanced performance and efficiency while lowering power consumption.

The new Lenovo AI Discover Center of Excellence provides access to Lenovo data scientists, AI architects and engineers to help explore, deploy and scale AI solutions. The service also guides customers to the most appropriate software partners, AI-optimized infrastructure and responsible AI guidance through the Lenovo Responsible AI Committee. As companies learn to deploy AI, the committee helps customers with their approach to designing, deploying, and using AI ethically, help-

ing organizations understand and address privacy, fair usage, diversity, equity, inclusion, and accessibility considerations.

Accelerating AI deployment worldwide

The Lenovo ThinkSystem SR675 V3 was featured on stage at SIGGRAPH as an NVIDIA OVX server that will soon include the newly announced NVIDIA L40S GPUs. These servers will help professionals worldwide advance AI and bring generative AI applications like intelligent chatbots, search, and summarization tools to users across industries.

Lenovo is the leading provider of omniverse and OVX in the cloud and on prem; with the Lenovo ThinkSystem SR675 V3 powered by the new NVIDIA L40S GPU, Lenovo is further extending its omniverse leadership into generative AI, helping businesses implement next generation AI, immersive metaverse simulations, and cognitive decisions at scale.

The new NVIDIA L40S GPU is a powerful, universal data center GPU designed to deliver breakthrough multi-workload acceleration for AI inference and training, graphics, and video applications. The versatile capabilities of the L40S GPU make it the premier platform for accelerating AI workloads with NVIDIA AI Enterprise, an enterprise-grade, end-to-end software platform for generative AI, and powering industrial digitalization with the NVIDIA Omniverse platform.

The L40S delivers breakthrough multi-workload acceleration for large language model (LLM) inference and retraining, graphics, and video applications. As the premier platform for multi-modal generative AI, the L40S GPU provides end-to-end acceleration to power the next generation of AI-enabled audio, speech, 2D, video, and 3D applications. The L40S will also be a key component for the next generation of NVIDIA Omniverse OVX 3.0 platforms delivering the highest fidelity and most accurate digital twins.

Lenovo is well positioned for supporting the L40S with many servers in the line-up optimized for the new GPUs. As fully simulated digital replicas of entire buildings, factories, distribution centers,

retail stores or cities, digital twins are combined with generative AI to improve business processes and design outcomes. Lenovo is extending its collaboration with NVIDIA on its NVIDIA OVX system from building and operating virtual worlds to generative AI, delivering powerful performance for AI workloads in the data center.

The ThinkSystem SR675 V3, the leading platform supporting the OVX architecture, features up to eight NVIDIA L40S GPUs to maximize performance and deliver the most advanced ray tracing with NVIDIA RTX-accelerated graphics and AI capabilities in a robust and scalable platform, allowing customers to explore and unlock the full potential of generative AI. The Lenovo ThinkSystem SR675 V3 is the most versatile, accelerated computing platform on the market with three server configurations in one, including support for NVIDIA HGX A100 4-GPU systems with NVIDIA NVLink technology and Lenovo Neptune hybrid liquid cooling, as well as 4- or 8-GPU configurations, featuring NVIDIA L40S, NVIDIA H100 PCIe 80GB or NVIDIA H100 NVL 94GB servers in a compact 3U footprint.

Together, these advancements serve to simplify the rollout of AI, making it accessible to organizations of all sizes and enable transformative intelligence across all industries. This builds on Lenovo's major investments in AI solutions and infrastructure and implementation of the technology across both offerings and operations.

AI: The secret sauce

In the digital transformation recipe, AI is the secret sauce that elevates the dish. Recognised by APAC companies as a vital ingredient, AI is not just a tool for efficiency, but a strategic asset driving innovation. With the forecasted increase in digital product and service revenue, AI's role is set to become even more critical.



HARDWARE

The business imperative of making decisions based on real-time insights is increasing the demand for smart infrastructure – whether in the cloud, on-premises, or a hybrid model. The elements that make up this smart infrastructure should ultimately provide a distinct competitive advantage for organizations. They are crucial for the success of businesses aiming to provide customers with wholesome and delightful experiences through their products and services.

Agile, hyperconverged, and virtualized infrastructures powered by high-end processors are key ingredients that are indispensable in the digital transformation menu.

Ingredients:

In the digital transformation kitchen, the hardware is akin to the stove and oven, the essential tools that bring the recipe to life. Here are the key components that make up the hardware in the digital transformation journey.

- Extreme reliability and scalability
- Integrated security
- Simplified management
- High performance
- Infrastructure lifecycle services
- Superior, single point of contact support experience
- Flexible payment models

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Hardware and DX

Leading-edge hardware, driven by high-performance processors, integrates superior performance standards, the latest security features, and exceptional scalability. Such hardware can drive high-performance workloads for data-driven digital transformation.

Smart infrastructures that leverage high-end processors support high-performance computing workloads at scale and can dramatically reduce energy consumption, making sustainable operations a reality. Moreover, by using AI, hyperconverged infrastructure, and virtualization solutions, companies can consolidate IT infrastructure, reduce complexity, and make IT management easier and more efficient.

Software-driven, highly reliable, and scalable servers, such as the Lenovo ThinkAgile series running on AMD EPYC high-end processors, are designed for ease of deployment and management in scale-out clusters. This leads to faster time to market, lower complexity, and reduced costs. These servers, typically delivered as fully integrated and configured building blocks, can accelerate time to value for mission-critical R&D programs and significantly reduce infrastructure maintenance costs in today's economic climate.

In essence, the right hardware forms the backbone of any successful digital transformation strategy, enabling organizations to drive performance, reduce complexity, and achieve sustainability goals.

Reduced time to insights

High-performance computing solutions that use processors with massive CPU core density and memory footprint accelerate higher performance workloads, enhance efficiency, and reduce the total cost of ownership. With a big-data validated design, modern systems offer excellent price-performance trade-offs and support advanced Big Data workloads, including batch and real-time analytics.





Computing-intensive in-memory databases and I/O intensive operations transform data into insights faster than conventional systems. They leverage higher value from data by dramatically accelerating high-performance workloads. These solutions not only transform data into insights faster but also support the intense workloads required for end-to-end digital transformation while ensuring top-notch energy efficiency. This allows companies to infuse sustainability into all their products and services.

For running real-time analytics and high-end database solutions, infrastructure should be engineered from the design stage itself for high-performance workloads. Lenovo's ThinkAgile servers, based on AMD EPYC processors, provide a verifiable record of successfully enabling innovations in such challenging environments.

Enterprises can run AI and ML applications with AMD high-performance computing processors, including both CPUs and GPUs, within an open ecosystem for software development. By using AMD processors, organizations can power today's high-performance computing commercial and research workloads while laying the foundation for future high-performance computing innovations. Real-time analytics turn big data into a critical business advantage rather than just a marketing talking point.

Simplified IT management

IT managers often recount tales of the complexity of IT management. IT infrastructures can quickly sprawl, becoming complex, difficult to manage, and costly to maintain. Legacy IT infrastructure often bogs down key IT resources in regular maintenance, rather than allowing them to focus on developing new experiences that can create new revenue sources.

Modern infrastructures built on Lenovo ThinkAgile servers can be managed from a single interface, reducing management complexity and freeing IT staff time from maintenance tasks. They also break down silos and dramatically reduce server, storage, and virtualization complexity in data centers of all sizes. Faster, simpler IT operations result from one-click planning, provisioning, insights, and firmware update management. Enterprises can help IT staff focus on innovative solutions, increase their performance level, consolidate more workloads, and ensure complete security in the cloud and at the edge.

Faster workload scaling

Traditional systems often struggle to scale workloads reliably with demand, resulting in suboptimal research outcomes and inadequate services.

Just as a versatile kitchen that can cater to a variety of culinary demands is essential for a competitive restaurant, the ability to run highly computing-intensive workloads and applications anywhere and at any time is crucial for a competitive advantage in the business world. The reliability of high-performance computing workloads and the quality of their output are vital to maintaining client confidence and overcoming competition. When reputation is at stake, investing in smart infrastructure solutions becomes non-negotiable.

Faster fourth-generation processors from AMD and the ThinkAgile portfolio optimize a range of virtualized workloads, including edge, ROBO, VDI, AI, ML, and advanced analytics. ThinkAgile platforms have set the benchmarks for performance and reliability year over year. The validated HX reference architectures can deploy hyperconverged infrastructure clusters faster and at virtually any scale, anywhere.

Comprehensive security

While investing in modern data center architectures, it's essential to understand whether they can withstand today's sophisticated cyberattacks. Ensuring hardware-level security is a challenge that only a few have completely mastered, much like ensuring the safety and hygiene of a kitchen in a bustling restaurant.

Lenovo ThinkShield security capabilities have been enhanced with AMD Infinity Guard on ThinkAgile servers using AMD EPYC processors. Built to be highly resistant to today's evolving sophisticated threats, AMD Infinity Guard delivers a leading set of modern security features to avoid downtime, protect sensitive data, and reduce resource over-consumption

It acts as a veritable lock hold against attacks that target sensitive data while reducing the potential attack surface as much as possible even as the software is booted, and running and processing data.

The 'Security by Design' approach from AMD, with its advanced security features and embedded silicon subsystem, provides constant data protection. At the same time, Lenovo's ThinkShield Security provides advanced modern infrastructure security capabilities for fortified IT resiliency, compliant with the stringent security standards of virtually all industries. The AMD EPYC processors also support innovations such as 'confidential computing' with a dedicated fully integrated on-die security processor.

Great CX on demand

Enterprises cannot operate software applications or programs that deliver time-sensitive and mission-critical outcomes swiftly, accurately, and at scale without the underlying hardware delivering exceptional performance.

Hardware powers top-tier software and advanced AI programs. It is the foundation of digital business growth and the digital transformation recipe because performance determines the success of digital transformation.

A modern smart infrastructure must enable organizations to achieve a competitive advantage by running more computing-intensive applications



and workloads. This helps them master the real-time insights game and ensure end-to-end digital transformation.

Ideally, the solution should enable companies to get up and running for faster time to market with quick deployments, including a software license. Additionally, they should include deployment services and a single point of contact for support.

To mitigate the challenge of resource drain, it should improve administrator productivity by reducing management complexity, ensuring faster response times, and enhancing the overall availability of services.

Today, it is possible to achieve better economics by deploying critical workloads with peak efficiency and requiring only up to half of the normal number of servers needed. In fact, Lenovo's ThinkAgile servers running on AMD EPYC processors are also capable of delivering the financial agility of a cloud-like model that all CFOs desire, with the advantage of a highly secure on-premises infrastructure.

Success with hardware

The right hardware is a critical ingredient in the recipe for successful digital transformation. It provides the necessary power and performance to run demanding applications, ensures security, and simplifies IT management. With hardware like Lenovo's ThinkAgile servers and AMD EPYC processors, organizations can deliver exceptional customer experiences, scale workloads reliably, and maintain comprehensive security. This gives businesses a competitive edge in today's fast-paced landscape.



PROFESSIONAL SERVICES



Maintaining IT infrastructure can be a complex affair – like serving a seven-course meal to thousands of refined palates every day of the year. In this demanding environment, CIOs require data center infrastructure that turbocharges growth rather than impede it. Typically, IT teams often spend entire days resolving technical maintenance issues rather than proactively running innovation projects to bring in new revenue.

Ingredients:

In the digital transformation kitchen, professional services are akin to the skilled chefs who bring the recipe to life. Here are the key components that make up professional services in the digital transformation journey:

- Flexibility, agility, and scalability
- On demand support and insight
- Transparency and control
- Assessments, testing, blueprinting, and strategy building
- Technology monitoring and maintenance
- Solutions design and deployment
- Managed services and enterprise server software support

The need for professional services

Chances are that organizations are mostly over-provisioning IT resources that consume energy and incur considerable costs just to ensure that their operations are always available, just like fine-dining restaurants cook up dishes that nobody ever consumes.

Not only is it a large capital expenditure (CapEx) outlay, but it also involves operational expenditure (OpEx) on infrastructure that is sub-optimally utilized. Moreover IT infrastructure, over time, can develop into a massive sprawl, increasing management complexity and costs. All of this results in a poor cost-benefit tradeoff.

Moreover, technology is evolving at a rapid pace and IT teams struggle to keep pace with niche technologies. Above all, legacy IT infrastructure can be rigid and devoid of the agility and flexibility to scale according to demand or to deploy new technology on top of it. Getting budgetary allocations at the required scale and on time can be difficult, impeding projects that are essential to gaining a competitive advantage.

Modern IT solutions should not only be scalable but also come with automated updates. IT organizations can confidently focus on innovation and growth by outsourcing resource management.

According to IDC, for 63% of IT buyers, the availability of flexible payment options or pay-per-use is very important when selecting an IT infrastructure provider. Flexible payment options and detailed resource usage data and measurements also

become essential to invest more in growth initiatives by keeping spending within budgetary limits.

As-a-service delivery

All these developments lead to the rising importance of as-a-service delivery of technology services. The as-a-service model helps organizations gain the flexibility of developing custom solutions for each department as they require instead of the typical one-size fits all infrastructure solutions.

Ability to achieve scale on demand is an IT leader's superpower — they need the right technology services model to achieve it. Pay-as-you-go technology models deliver scale in ways traditional procurement methods can't. With pay-as-you-go models, provisioning hundreds of new users from different parts of the world or immediately accessing terabytes of additional storage are easily addressable challenges rather than nightmares.

IT managers can easily expand capacity on-site or in the cloud. They can add, remove or pause devices, infrastructure, services, and support on demand.

Flexible integrated infrastructure solutions that combine key enablement and support services in one package enable easier cross-silo and horizontal collaboration. Such collaborative environments are key C-Suite prerogatives today and are essential to achieving true digital transformation.

Paying only for what you need

Lenovo TruScale is a real consumption-based model with no required minimum capacity commitment. Using Lenovo TruScale Infrastructure Services, customers pay for capacity only when their workloads are actively running, eliminating upfront capital purchase risk. They can get the scaling super power on their side with the capability to scale up or down to accommodate evolving business needs while ensuring IT infrastructure is always right-sized all the time.

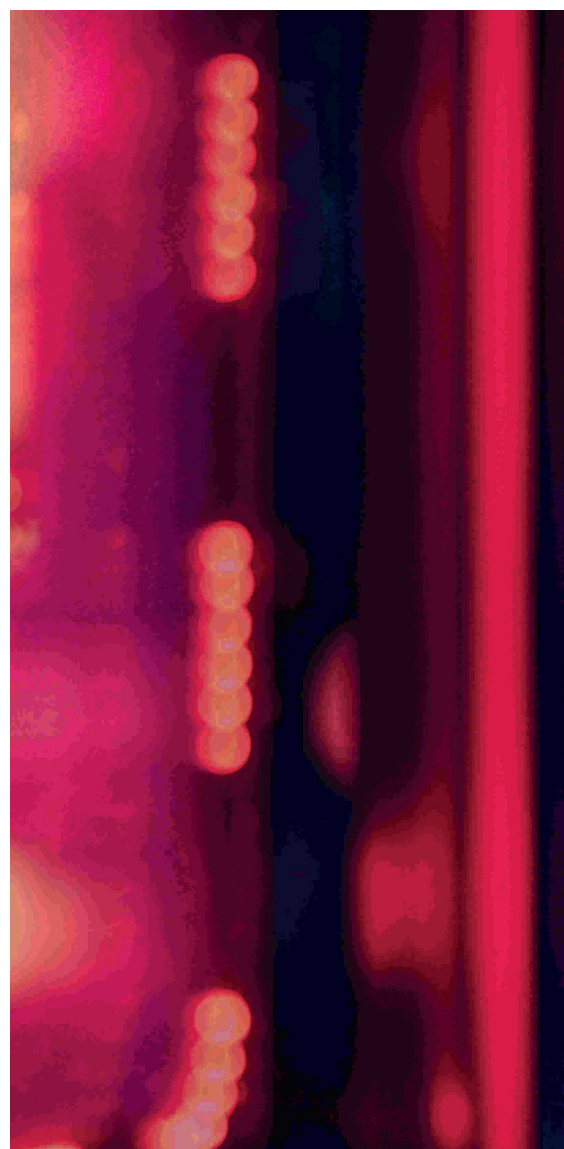
Lenovo provides a unique metering solution outside of the customer's data plane, thereby providing the advantages of cloud-like economics with

the security of on-premise hardware. Maintenance, support, remote monitoring and system health are all covered in one monthly pricing bill.

TruScale can meet any configuration demand that meets the customer's needs – storage-rich, server-heavy, hyperconverged or high-performance computing. And all of these can be scaled up or down as business demand fluctuates or evolves.

From solutioning to security

TruScale's comprehensive package of services makes it possible for companies to identify the right-fit IT strategy for themselves through assessment and blueprint development services. After evaluating a company's current environment, Lenovo can identify fiscal or technological constraints, envision system and infrastructure improvements, and test different possibilities to find the best fit for organizations.



Based on each company's unique business demands and growth targets, TruScale blueprints solutions that help expedite time to value and reduce the need for investment in specialized expertise in the IT organization.

After defining and prioritizing each organization's objectives, Lenovo can help design a solution, create and run a proof-of-concept lab tests, and build a strategy for digital transformation. The strategy identification service takes the grunt work of identifying, testing and blueprinting out of an organization's hands while reducing resource costs.

TruScale helps organizations target faster time to productivity to proactively meet evolving challenges. For example, implementing a new solution can be time-consuming and labor-intensive but also involve unpredictable risks. Lenovo can help organizations adopt new technologies quickly and easily with minimum risk - while ensuring that the solution meets evolving needs.

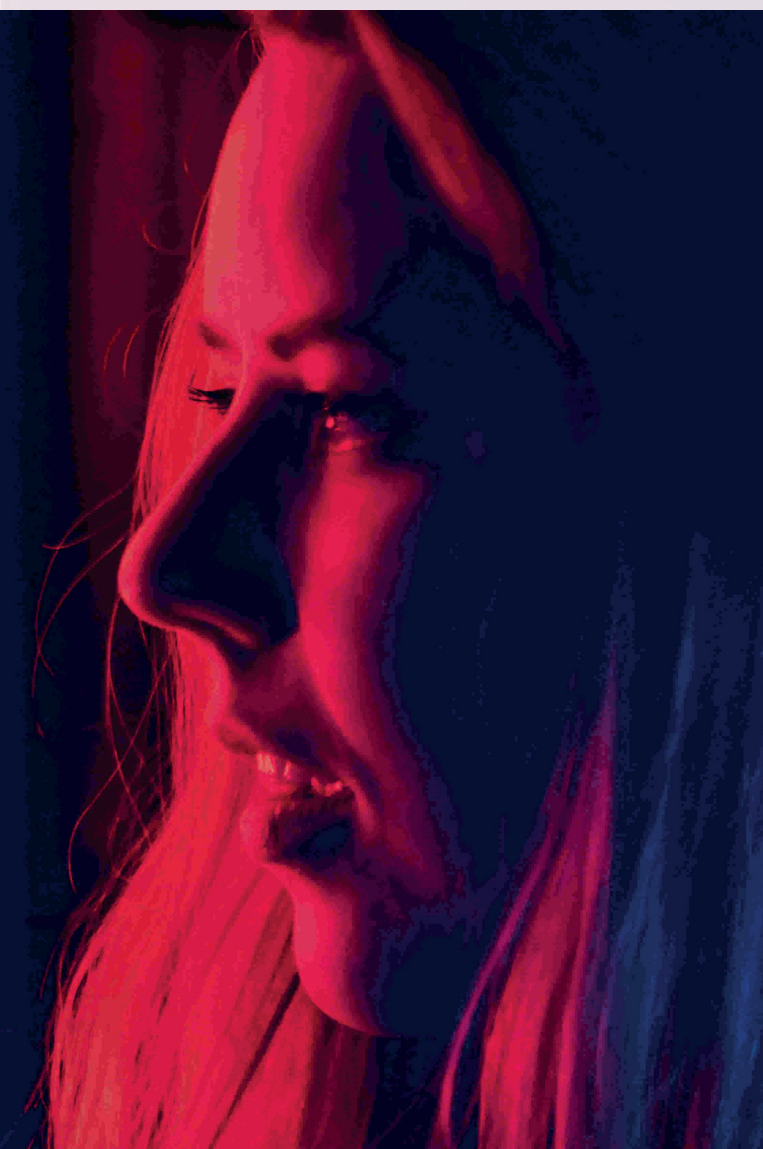
TruScale delivers an as-a-service, cloud-like experience with on-premises security and control. It ensures reliability and stability in the availability of services with 24/7 monitoring, management, and support.

Granular control

Lenovo provides granular control with customized options that meet specific business and response-time goals, to help simplify operations. Regular system health checks, updates, capacity planning, and performance management ensures business continuity and proactive maintenance.

Companies get the latest Lenovo hardware and enjoy faster refresh cycles - while it provides the benefit of physical on-premises security, capacity control, and data protection in one comprehensive package.

The value of a true subscription offering is that it provides customers the ability to view their consumption in real time. This way subscription services enable better control and predictability over costs. The customer portal provides Lenovo TruScale customers constant visibility into their consumption. A Customer Success Manager assigned to each client enables them to have easy access to granular details as they require as well as clear resolution pathways with any issue they encounter.





SUSTAINABILITY

In the culinary realm, sustainability should permeate every ingredient and process – from the vegetables and meats to the sauces and cooking methods. The same principle applies to digital transformation, where every component should embody this ethos.

The IDC InfoBrief, “CIO Technology Playbook 2023,” commissioned by Lenovo and AMD, highlights the importance of sustainability in the digital transformation journey. According to the InfoBrief, Lenovo is working towards reducing its environmental impact and carbon footprint. The company aims to achieve net-zero carbon consumption by 2050, with advancements in packaging, manufacturing, asset recovery services, and water-cooling technology playing a crucial role.

Ingredients:

Just as a chef carefully selects the fresh and sustainably farmed ingredients to create a delicious and sustainable dish, businesses need to choose the right components to build a robust and sustainable strategy. Here are the key ingredients for sustainability in digital transformation:

- Energy-efficient technologies
- Sustainable sourcing and procurement practices
- Waste reduction and recycling initiatives
- Carbon offsetting programs
- Water conservation measures
- Sustainable packaging solutions
- Employee engagement and training in sustainability
- Transparent reporting and accountability

These ingredients, when combined in the right proportions, can help businesses create a sustainability strategy that reduces their environmental impact and ensures the sustainability of their operations.





Why sustainability should be at the center of IT operations

Sustainability should be an actionable program and core ingredient of the digital transformation recipe rather than a marketing slogan. Companies across the Asia-Pacific (APAC) region are recognising the importance of sustainability and are integrating it into their operations and strategies. They understand that sustainability isn't just about reducing their environmental impact; it's also about creating long-term value for their stakeholders, improving their brand reputation, and staying competitive in the marketplace.

The benefits of sustainability are manifold. It can help companies reduce costs, improve efficiency, and mitigate risks. Sustainability can also drive innovation, open up new business opportunities, and attract and retain talent. Moreover, sustainability can help companies meet the growing expectations of their customers, employees, investors, and regulators,

who are increasingly demanding that businesses take action on climate change and other environmental issues.

How Lenovo builds sustainability into IT

Aiming for sustainability, Lenovo has developed a strategy that covers all aspects of its business. The company's initiatives aim to reduce environmental impacts while driving digital transformation journeys forward.

Lenovo's commitment to sustainability is reflected in its goals, validated and approved by the Science Based Targets initiative (SBTi). This makes Lenovo the first PC and smartphone maker and one of only 139 companies in the world with a net-zero target validated by SBTi.

The technology giant's sustainability strategy includes a range of initiatives, including efforts to reduce the environmental impact of its products, and harness innovation to increase sustainability

in its manufacturing. Lenovo is also decreasing emissions across its operations and value chain, with strategies outlined in its Journey to Net-Zero video series available on YouTube.

The company's four core areas of focus are:

- Pursuing emissions reduction
- Helping to create a circular economy
- Reducing packaging waste
- Building more sustainable supply chains

Lenovo has a broad-based approach that drives innovation in its product design and operations. For instance, the company's engineers developed a low-temperature solder (LTS) technology that helps lower the oven temperature on its manufacturing lines, reducing the energy required and associated emissions. LTS has helped Lenovo reduce 10,000 tons of CO₂ emissions since 2017.

On the path to its sustainability goals, Lenovo has set near-term 2030 reduction targets. These include reducing absolute Scope 1 and Scope 2 greenhouse gas (GHG) emissions by 50% by FY 2029/30 from a FY 2018/19 base year, reducing Scope 3 GHG emissions from use of sold products by 35% on average for comparable products within the same timeframe, and reducing Scope 3 GHG emissions from purchased goods and services by 66.5% per million dollars US gross profit within the same timeframe.

Lenovo also seeks to create a circular economy, embracing a design-use-return philosophy that optimizes both the technology experience for users and the utilization of collective resources. This approach maximizes the value of each product through its lifecycle and helps keep end-of-life products out of landfills. Lenovo's Asset Recovery Services (ARS) helps keep resources circulating by reusing parts wherever possible, refurbishing devices, and recycling assets.

Lenovo's commitment to reducing packaging waste is evident in its packaging designs that minimize materials used without jeopardizing shipping protection integrity. The company has eliminated 54 tons of plastic tape from Lenovo ThinkPad packaging annually and has reduced packaging consumption by weight by 3,737 metric tons since 2008.

In building more sustainable supply chains, Lenovo operates a flexible, resilient global supply chain with continuous investments in renewable energy projects, sourcing, transportation, logistics, and end-of-life management programs. The company also works closely with its partners to help them meet emissions reduction and sustainability goals.

Sustainability: The core of digital transformation

Sustainability is the principle that guides the selection and use of all other components, ensuring every aspect of the journey is environmentally friendly. Recognised by APAC companies as a vital principle, it's a strategic asset driving innovation and competitive advantage – along with meeting corporate, national and global carbon-specific goals. As businesses embark on their digital transformation journey, sustainability ensures their IT strategy and procurement are not only successful but also responsible and future-proof.



A BLUEPRINT FOR TRANSFORMATION



As we come to the end of *The Smarter Digital Transformation Cookbook*, we hope that it proves to be a valuable resource in the digital transformation journey. We have covered a range of topics, from cloud computing to artificial intelligence, hardware, professional services, and sustainability, and provided practical advice and implementation possibilities to help the enterprise navigate the complex landscape of digital transformation.

Digital transformation is not a one-time event, but an ongoing process that requires continuous innovation and adaptation – a thousand small decisions and process improvements need to be made every day. As technology continues to evolve, organizations must be prepared to embrace new technologies and adapt to changing customer needs. The recipes in this book provide a solid foundation for digital transformation, but they are by no means exhaustive. The technology leader's remit is to continue exploring new technologies and approaches to digital transformation to stay ahead of the curve.

Collaboration is paramount. Digital transformation requires a multidisciplinary approach that involves stakeholders from across the organization. IT leaders must work closely with business leaders to

understand their needs and develop solutions that meet their requirements.

The cloud is a reality today, but the exact model that needs to be deployed depends on business needs, vertical-specific requirements, and regulatory pressures. AI is in its early phase, and just how safely, deeply, and efficiently an enterprise manages to integrate it into its workflow and product roadmap may make the difference between success and failure in the future. Hardware needs to be mission-specific today, and its reliability and robustness can be the determining factor in the ability of technology projects to meet their goals. Finally, professional services providers can help bridge the gap between IT and business, providing expertise and guidance to ensure successful outcomes.

A key takeaway is the importance of sustainability. Digital transformation has the potential to reduce environmental impact and promote sustainability, but it requires a conscious effort to implement sustainable practices and measure and report on sustainability outcomes. We hope that the recipes in this book have inspired you to think about how you can incorporate sustainability into your digital transformation initiatives.

In conclusion, digital transformation is a journey, not a destination. We wish you all the best in your digital transformation journey and look forward to seeing the positive impact that you will make in your organizations, regions and the world at large.





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