

DEVICE AS-A-SERVICE

**Welcome to your next
supply chain model**



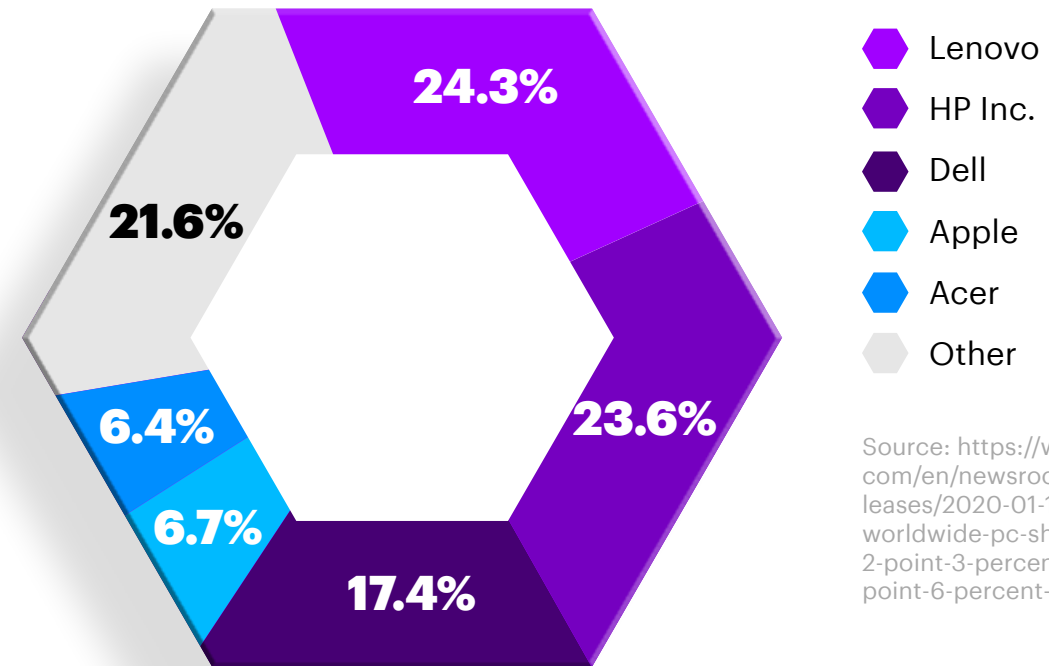
Device-as-a-Service (DaaS) is an integrated offering that spans device provisioning, services, and cradle-to-grave device support and it's emerging as a highly desirable option for both customers and providers. Customers gain flexibility, lower costs, and freedom from device management responsibilities. Providers benefit from new services revenue, a more predictable revenue stream, lower warranty costs, and substantially reduced sourcing costs through device re-deployment.

However, building a fully evolved DaaS business can be challenging for providers. In fact, integrating and scaling DaaS supply chain capabilities is as profoundly challenging as were past moves from mass production to mass customization, and from volume channel fulfilment to volume direct fulfilment. DaaS requires embracing a new type of supply chain model that combines device fulfilment, device services, and device recovery into a continuous flow that provides a seamless end-to-end customer experience.

Leading DaaS companies have succeeded by rethinking supply chain flows deploying them on new digital platforms. Through such a greenfield approach, providers can achieve needed efficiencies in flow and scale and create the flexibility to evolve services into highly differentiated and valued experiences.

To help enable companies considering a DaaS offering, here we share our perspective on the three dimensions of the DaaS model, what makes DaaS unique, the defining levers of a DaaS supply chain, and how to get started.

DaaS option available by vendor global PC market share



Source: <https://www.gartner.com/en/newsroom/press-releases/2020-01-13-gartner-says-worldwide-pc-shipments-grew-2-point-3-percent-in-4q19-and-point-6-percent-for-the-year>

DaaS is exploding in the market.

In PC Devices alone: **in 2015, 0%** of PC manufacturers offered DaaS as an option in the PC market. **By 2019**, DaaS as a product was offered by PC manufacturers with **over 65%** of market share.

How do manufacturers like these operate their models successfully?

Three dimensions: a step-change in supply chain management

DaaS brings a step-change in supply chain data and flow complexity. Providers must successfully integrate multiple distinct phases of “Source, Make, Deliver” across many possible cycles of device deployment.

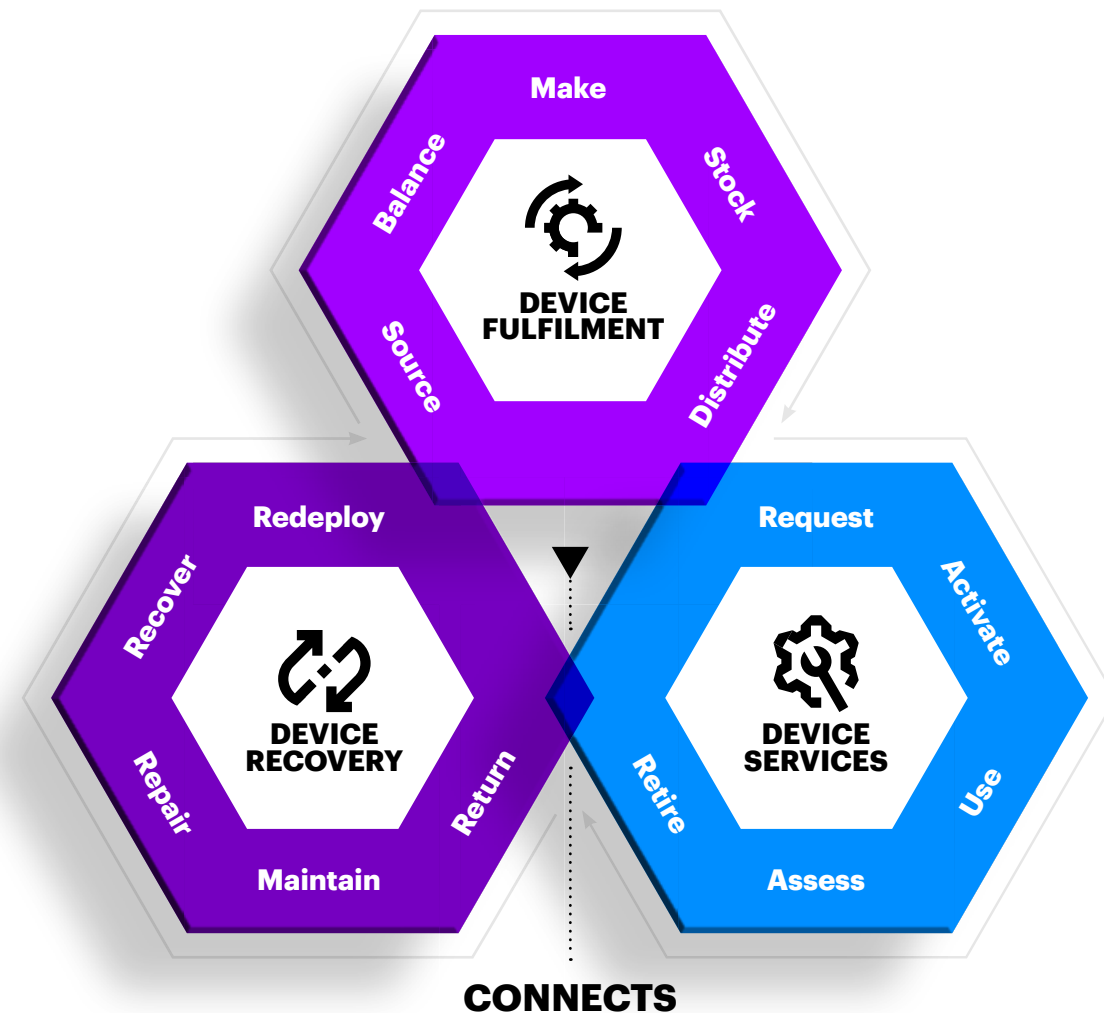
The DaaS model has three primary dimensions: Device fulfilment, device services, and device recovery (Figure 1).

Device Fulfilment requires careful consideration around how devices are put in the hands of customers which, for DaaS, is not based on a traditional order-based model.

Device Services and associated processes require both depth and simplicity not usually found in add-on service models. DaaS providers have to understand the product, its components, and everything that changes with the device over time. Concurrently, the customer interface has to be simple to understand and use—unlike many add-on service models in which customers must navigate multiple portals or service teams to get their needs met.

Device Recovery offers the potential to improve return on assets by recovering value through efficient reverse logistics, device repair, and re-deployment. Such processes is typically an afterthought in most product distribution models.

Figure 1: Three dimensions of the DaaS Supply Chain

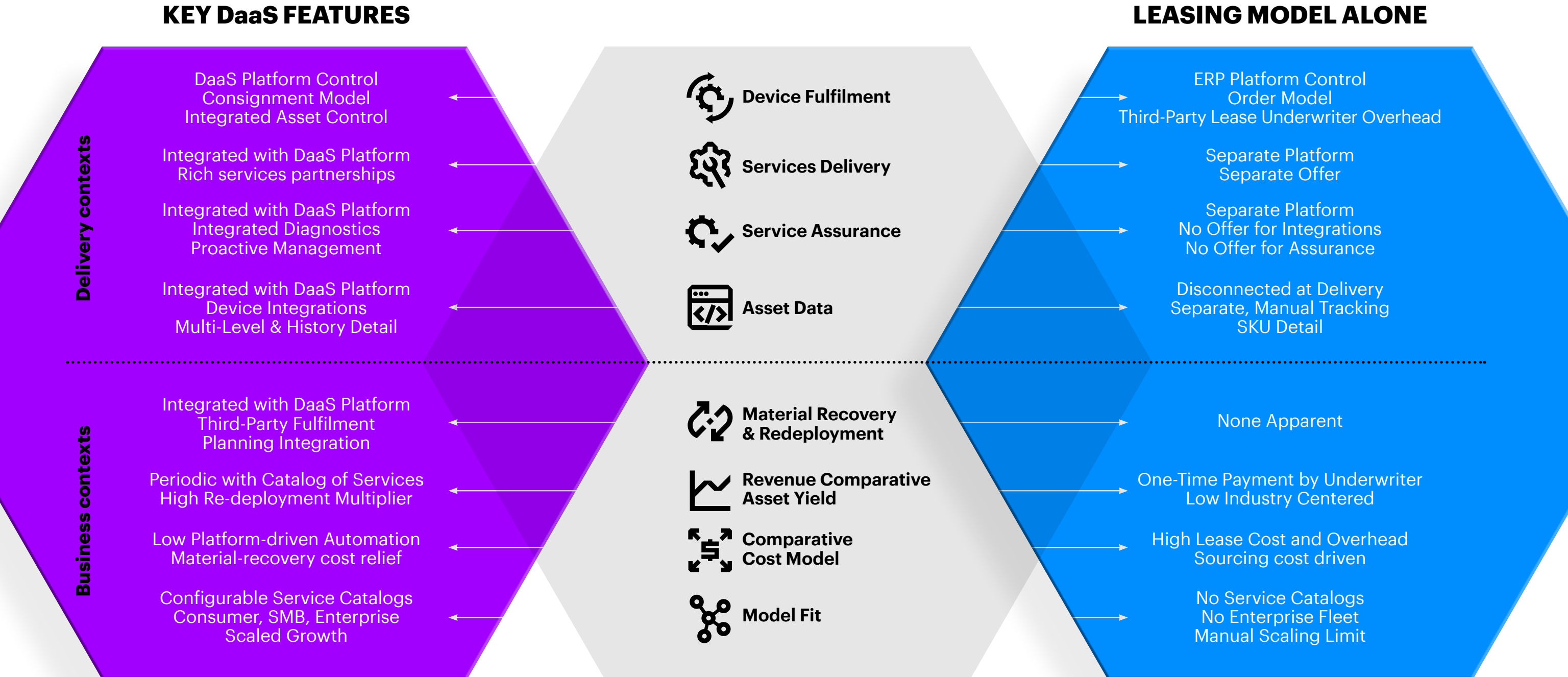


What makes DaaS unique: one integrated experience

While often confused with a leasing model, DaaS is distinctly different (Figure 2). In a typical leasing model, there's an initial device shipment. Services are "add ons" and typically handled through different customer portals and organizations. Processes and data are disconnected, which leads to the need to gather additional information from the customer in each transaction. In essence each customer interaction—for fulfilment, service, or return—is a different experience, which appears disorganized and leaves the customer feeling frustrated. In contrast, DaaS is one smooth, simple experience across fulfilment, services, and recovery. Driving that seamless experience is a combination of an underlying platform, connected processes, and a single source of asset and customer data.



Figure 2: DaaS versus Leasing



Four supply chain levers underpin successful DaaS

There are four primary levers that are essential to a successful DaaS supply chain. Each lever is enabled by key tenets that combine to provide the foundation for a scalable DaaS offering.

1 Customer Experience

DaaS is first and foremost a customer service model: The delivery design must start with exactly what customers should experience and drive backward into all facets of the supply chain.

Outside-In Design

Design thinking and customer-experience-led paradigms infuse successful DaaS supply chains with a true outside-in perspective. This design informs all details from service event fulfilment, asset tracking, performance metrics, and voice of the customer, to integration, visibility, and collaboration.

Every Touch Matters

In the DaaS lifecycle model, most interactions after contractual setup between the business and customer are done directly or indirectly through a fulfilment supply chain – provisioning the device, service events, spares, upgrades, or removals. The best DaaS models ensure that every “moment that matters” is effortless and rewarding for the customer, and measured for reliability of performance by fulfilment.

An Attractive Value Proposition

A large part of a DaaS model’s value comes from lower cost to serve and improved experience, by replacing existing device and service fulfilment by leveraging outsourced capabilities. For example, internal print and support teams become a managed print service. Internal mobility teams become a managed mobility service. The DaaS supply chain must be simultaneously more effective, or at least as natural and effortless as existing teams, while also being less expensive.

2

Asset Lifecycle Management

DaaS manages the entire asset lifecycle, far beyond the usual handoff to the customer at delivery. In addition to initial device fulfillment, DaaS manages servicing and recovery of the device potentially through multiple cycles. All dimensions are managed as a unit, with completely new performance objectives. Getting scope and automation right from the outset is critical to scalability.

Scope

The biggest shift in capability for many supply chains comes from the fact that customer devices must be managed as a fixed asset inside the supply chain. The depth of detail contained and managed within the platform must be sufficient to support financial obligations, service delivery, and device tracking, as well as the material lifecycle from consignment to maintenance and from overhaul to disposal.

Automation

The breadth and depth of DaaS data, the speed at which the information is acquired and analyzed, and the model's ability to respond to customer events essentially mandates that all asset flows reside in a completely automated model. Anything less provokes scalability and experience challenges.

3

A Flexible Network

Many partners are typically involved across the fulfillment, service delivery, and device recovery network. Different partners handle initial fulfillment, device activation, specific services provided within the DaaS contract, repair, and maintenance. The DaaS model must be highly flexible to adapt the network as products and services are configured to order for specific client service needs and to support product and service innovation over time.

Service Reconfiguration

A hallmark of DaaS is the ability to offer new service capabilities in a continuous innovation model. Today's premium services become tomorrow's basics, and new product and service models can be deployed in an ever-changing array of possibilities. That calls for a highly flexible and reconfigurable network. The DaaS model must be able to quickly reconfigure and connect new supply chains and services to constantly adapt the devices and services to meet market and customer-specific needs.

Integrations

Typical supply chain integrations take months and quarters to create and require intensive human interaction to configure – these can become bottlenecks for both innovation and scalability. With DaaS, integration of partners into the network must be very fast. Successful DaaS models define standard processes for rapid, automated integrations, enable innovation, and drive quick and efficient scaling. A single DaaS platform helps considerably in this effort.

4 Platforming

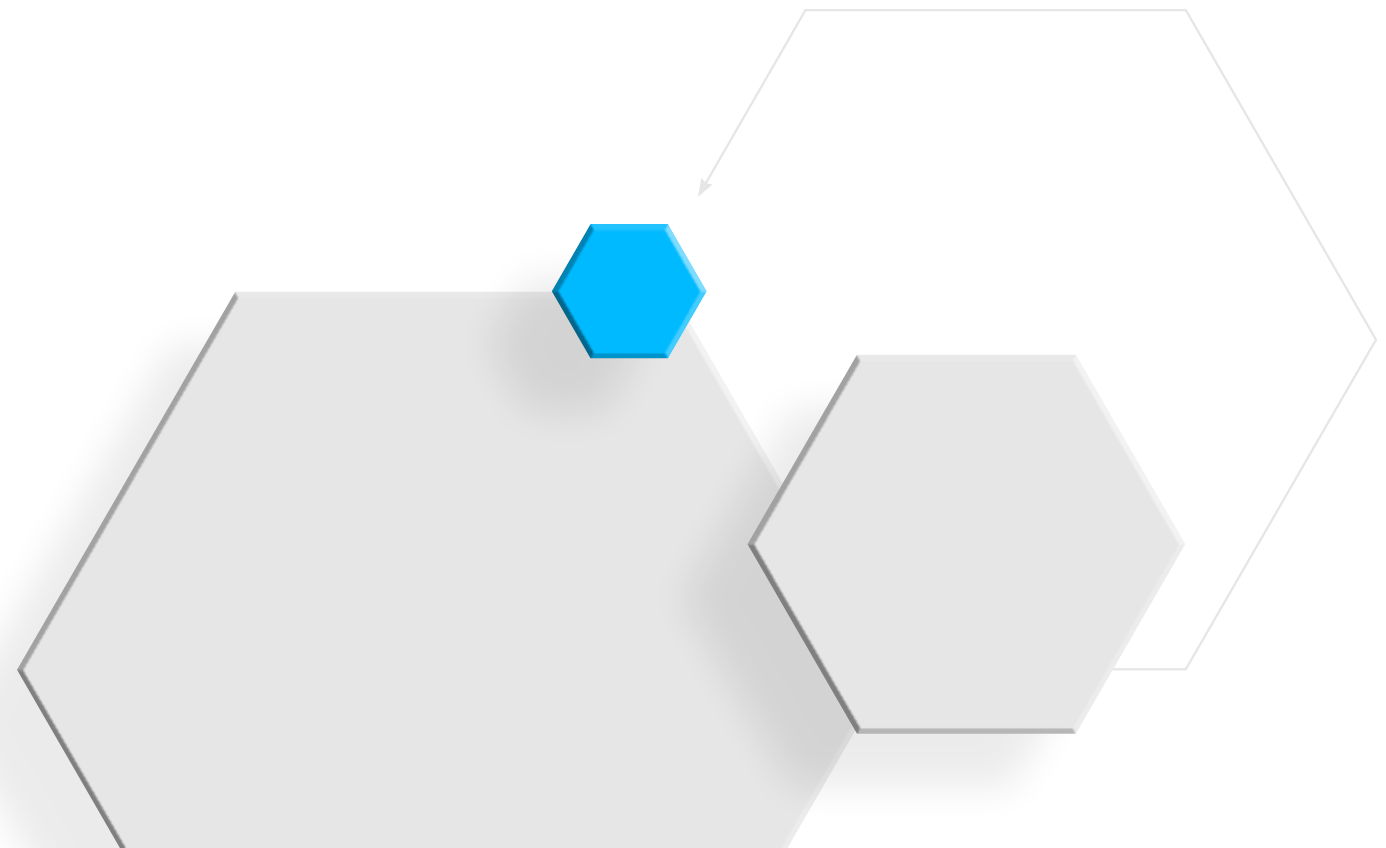
The critical connectivity between the fulfilment, services, and recovery phases in the DaaS lifecycle requires a platform that's tightly and digitally integrated to operate at scale. This platform is the glue that holds the network together—connecting to all operators in the network, providing visibility to all assets across their lifecycle, and enabling the customer experience. Companies that attempt to build a DaaS model with distinct non-connected platforms find it a very challenging, manual, and a time-consuming effort.

Scale

The data in DaaS models flows at a much higher velocity and in larger volumes than ordinary platforms are designed to manage. ERP (Enterprise Resource Planning) systems, for example, often can't manage DaaS supply chain execution velocity. The best DaaS environments embrace decoupling ERP from DaaS and using best-in-breed service platforms to operate them. This allows for effective capture of device assets, service flows, and service analytics at the scale and velocity of a global network—millions to billions of devices streaming information into a DaaS supply chain operating control model.

Detail

Data complexity in DaaS models is also unlike that of ordinary asset, flow, and service models in traditional supply chains. DaaS models are extremely data intensive. They have to do everything from comprehending complex multi-level material assemblies (e.g., server hardware or automobiles), tracking multiple asset states (e.g., online, offline, impaired, replaced), and maintaining service history (e.g., repair, provider, exchanges), to monitoring performance (e.g., drives, engines) and consumption (e.g., pages, ink, wash cycles, scan cycles, megabytes, megaflops). The best DaaS platforms embrace digital thread technologies as an essential platform foundation, so that all information about the device from the point it's built to where it's deconstructed and disposed of is collected over the asset lifecycle.



Modern DaaS supply chain use cases

Customer Experience

Case: Data Center Experience

A hardware company was developing a DaaS offering to extend its market for data center products. Progressing down the DaaS path, the company grasped that compute, network, and storage were important to customers, but didn't fully understand the experience of operating these dimensions in a datacenter. Through outside-in modeling of the full lifecycle of datacenter management, the company effectively captured all of the critical moments that mattered in data center DaaS, which included much more than simply getting a server in place. The deployed DaaS was seamlessly relevant and effective for clients.

Asset Management

Case: Asset Lifecycle

A company put together a limited DaaS model that focused heavily on the contractual and capital side of DaaS. As field materials matured out of their lifecycle, DaaS renewals became a major struggle because the company lacked the depth of asset information to enable a simple, natural upgrade cycle and weren't responsive enough to client demands. The future DaaS model was engineered to actively manage and monitor detailed asset information in a full lifecycle model.

Flexible Networks

Case: Standardizing for Configurability

A company was exploring a DaaS mobility product for corporate customers and had aggressive sales and scaling goals. The DaaS model required flexibility to integrate customer-specific services as well as customer-designated providers, but the integration process required weeks of customization to integrate each provider. To achieve any scale would take years of repetitive network integration activities. The company redeveloped, streamlined, and standardized its network provider connectivity processes, which provided the flexibility the DaaS growth model required.

Platform and Automation

Case: Platform-Driven Cost

A mature DaaS provider reached a multi-billion-dollar revenue scale with a rich, adaptive services capability. However, the company found that while its platform had effectively touch-free telemetry-driven consumption billing, changes and support for devices were still handled manually—a massive problem with a huge install base. Hundreds of people were now required around the clock to manually integrate and control data among multiple platforms, consuming 50 percent of resources and 1 percent of revenue. The company's DaaS model going forward was focused on a single platform for all device-related data and management to enable more effective scaling.

Leading Examples of Device-as-a-Service Deployed in Industry at Scale

INDUSTRY

DEVICE

SERVICES



Telecommunications

Set-Top Box

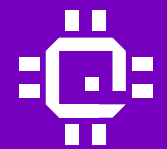
Home Entertainment

Cable Modems

Home Internet Home Security

Mobile Phones

Mobile Communications



Computer Hardware

Datacenter Servers

Business Compute Critical Infrastructure

Laptops

Digital Workspace



Imaging

Printers

Managed Print

Cameras

Compliance Monitoring Security



Medical Devices

Implants

Health Monitoring Cardiac Care Drug Delivery

Portable Medical Equipment

Home Hemodialysis Mobile Respiration Support

Clinical Equipment

Imaging Diagnostics Treatment

Getting started



DaaS

Three initial actions are key to creating effective DaaS capabilities that will be valued by customers; outperform standalone fulfilment, service and recovery elements; and efficiently scale revenue and profit with demand.



OWN

Establish a DaaS Dimensions design to ensure offers create measurable customer and internal value across all three phases of the product lifecycle. If every facet of the offer and fulfilment isn't creating value, the product and operational model may not be sustainable. Leading DaaS offerings are designed to consider the device from cradle-to-grave and use best-in-class value models to create superior outcomes.



DESIGN

Assign single-point profit-center leadership and clarify goals and governance over all elements of the DaaS Dimensions model. Because distributed accountability stalls actions and investments required for complex integration, the best DaaS models have a single organization and leadership that drives accountability and success across multiple integrated providers.



PLATFORM

Perform a high-level benchmark of the intended platform against a DaaS architecture for integration, capability, digital thread depth, and scalability. Leadership and governance must ensure that the time-phased roadmap for platform development value outcomes within DaaS dimensions, owned by single-point leadership. The most successful DaaS deployments come with platforms that are well-architected and drive value quickly while iteratively building out depth and scalability.

Conclusion



The desire for DaaS is growing, among both customers and providers. Companies that focus on creating a comprehensive DaaS experience for customers dedicate both processes and platform to achieve this model. It's important to set up an organization that has the freedom to create and deliver DaaS solutions. The market dynamics are clear. In an increasingly commoditized technology market, DaaS can provide both lower costs to serve and growth. **Providers that don't develop an effective DaaS business are at risk of being left behind.**

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