

Beyond the Thermostat

How HVAC & Building Systems win with
[outcome-based](#) service models.

THE CEO'S GUIDE TO TURNING CLIMATE PERFORMANCE INTO
CONTRACTABLE OUTCOMES, RECURRING REVENUE, AND CONTROLLED RISK.

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About the research

Cross-sector evidence from more than 500 industrial As-a-Service cases - not theory modelled from the outside.

P2S Management Consulting draws on more than 500 industrial As-a-Service cases across 12 industries (Energy Storage & Utilities, HVAC & Building Systems, Machine Tooling & Materials Transformation, Packaging & Printing, MedTech & Medical Devices, Fluid & Process Equipment, Electrical Appliances & Power Systems, Material Handling & Intralogistics, Testing, Inspection & Certification, Industrial Mobility & Transportation, Construction Tools & Off-Highway, Industrial Automation & Robotics). This depth of cross-sector experience and focus on industrial firms is what separates a P2S whitepaper from a general industry report: the patterns, failure modes, and commercial frameworks described here have been observed and tested across real transitions, not modelled

from the outside. This whitepaper combines structured stakeholder interviews with HVAC operators at different stages of the outcome-based transition, thematic analysis across practitioner cases, and deep-dive consultations with C-levels, commercial leaders, and asset operators managing the financial and contractual architecture of service models in the building systems sector. All practitioner cases are anonymised in line with participant confidentiality agreements, except where the company is publicly known and the information cited is in the public domain. Market data is sourced from the International Energy Agency (IEA), Markets&Markets, PortersFiveForce, Fortune Business Insights, the European Commission, and IoT Analytics, and is cited at point of use.

SCOPE DEFINITION

By **HVAC & Building Systems**, this paper means the full range of actors who manufacture, distribute, install, own, operate, contract, or depend on heating, ventilation, air conditioning, and building climate infrastructure. This paper is written for two provider archetypes positioned to convert toward as-a-service models:

(1) HVAC product manufacturers who have embedded connectivity, controls, and software into their equipment (Daikin, Carrier, Trane, Danfoss, Systemair, Swegon, FläktGroup, and similar companies). The software layer is what carries them past the two-year warranty wall and into the recurring maintenance contract, without it, the product supplier ships a box and exits.

(2) Dealers and integrators who control the service relationship with the end customer. These are the actors closest to the building owner, with the technical depth to take single-point accountability across design, install, and operate. ESCOs and EPC contractors already operate variants of these models, they are not the target reader. The strategic question of this paper is how companies with connected equipment and service-controlling integrators convert toward the same outcome-based logic.

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The three archetypes

What every executive in HVAC & Building Systems needs to decide.

Industrial markets are not moving uniformly toward subscription. They are moving toward **contracted outcomes**. For HVAC and Building Systems specifically - chillers, heat pumps, air handling units, building management systems, and the integrators, facility managers, and as-a-Service providers who deploy and contract these assets - the growth opportunity is no longer only in selling equipment or installing capacity. It is in turning climate performance into a commercially enforceable promise.

That shift matters for four reasons. The global HVAC market exceeded **\$280 billion in 2025** and is projected to grow at approximately **6–7% CAGR** through the next decade, yet equipment margins are compressing as manufacturers compete on efficiency specifications in an increasingly commoditised market.

Regulation is accelerating: the EU's recast Energy Performance of Buildings Directive (EPBD), which entered into force in May 2024 and must be transposed into national law by May 2026, requires the renovation of the **worst-performing 16%** of non-residential buildings by 2030 and mandates a roadmap to phase out fossil fuel boilers by 2040. HVAC systems account for approximately **40%** of total energy consumption in commercial buildings, making them the single largest energy end-use in the built environment. And buyers - building owners, facility managers, and corporate occupiers alike - increasingly want guaranteed indoor climate outcomes, verified energy savings, and predictable operating costs rather than equipment ownership with uncertain maintenance obligations.

But outcome-based models do not work by default. They work only when the outcome can be measured continuously, the technical and commercial risk can be priced correctly, and the financing structure fits the contract and the asset life. That creates the central question for every executive in this sector: **which outcomes are truly contractable?**

This paper provides a practical framework for identifying the three recurring commercial archetypes that work, understanding where margin is created and lost, spotting the failure modes that break these models, and deciding whether to pilot, scale, or stop.

We would also like to thank Carl Fredrik Sverdrup for contributing to this whitepaper. Carl is an Industrial Platform Specialist with 30+ years in HVAC, ventilation, and industrial air movement across 30+ countries. He is a Partner at Green Park Partners; former Chief Sales Officer at FläktGroup (2018–2024); former SVP Asia+ at Fläkt Woods Group; holds board roles at Kongskilde Industries and (former) Dantherm Group.

\$280_{B+}

**Global HVAC market size in 2025,
growing 6–7% CAGR**

Source: Markets and Markets;
Fortune Business Insights

40%

**Share of commercial building energy
consumed by HVAC systems**

Source: US Department of Energy

2040

**EU Deadline to phase out fossil fuel
boilers under the recast EPBD**

Source: European Commission

P2S DATA SIGNAL

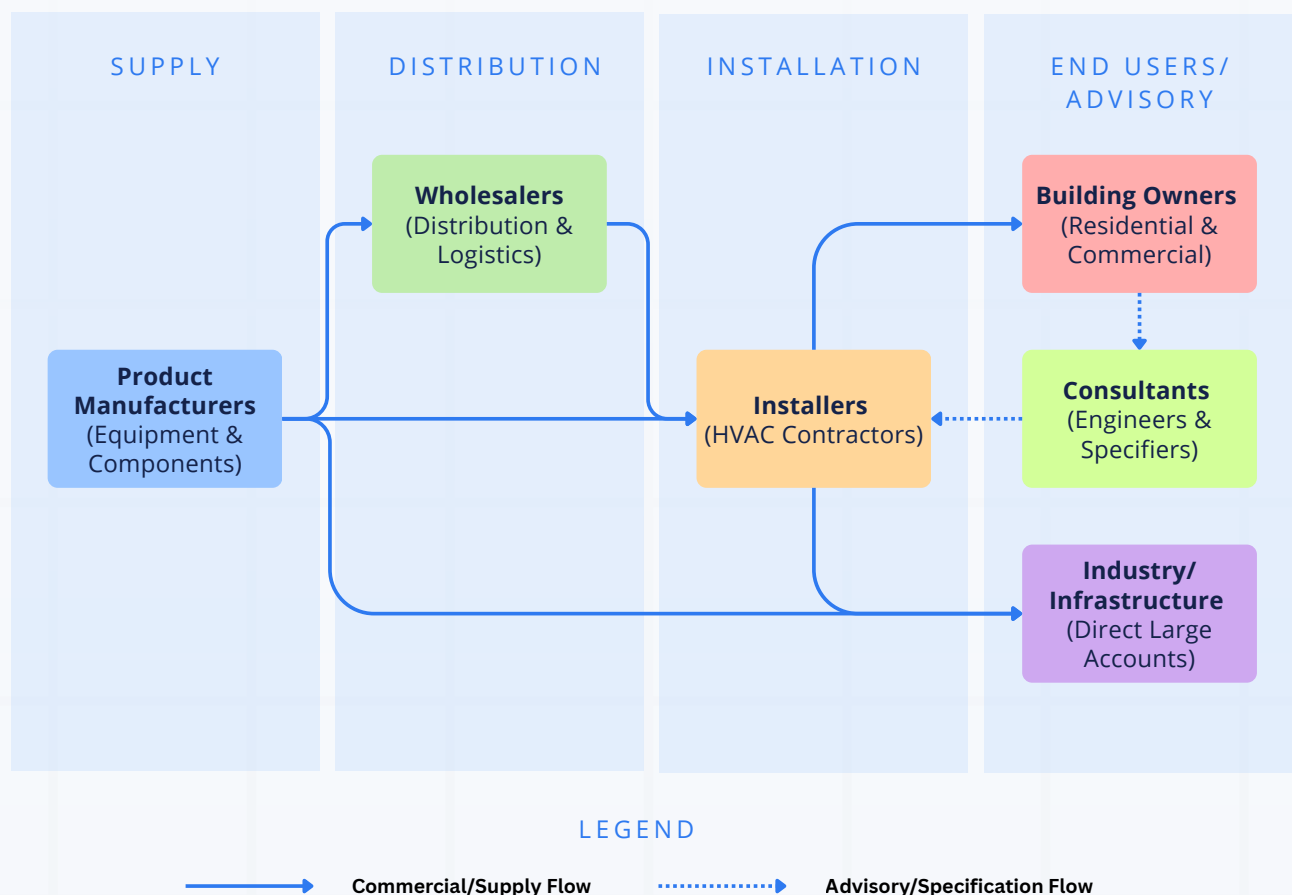
P2S research across **more than 500 industrial as-a-service cases** consistently finds that as-a-Service providers who move from equipment sales to outcome-based contracts report deal values **2-3 times higher than equivalent CAPEX transactions**, with significantly stronger customer retention and renewal economics. The model does not merely shift revenue timing. It changes the commercial relationship fundamentally.

Where the model can work in the value chain

Most of the European HVAC market, Carl Sverdrup, former Chief Sales Officer of FläktGroup, estimates roughly 80%, operates through a four-party value chain: building owner, consulting engineer (specifier), installer (MEP contractor), product supplier.

Nobody in that chain is single-point accountable for outcomes. The consultant designs but does not own performance. The installer meets the spec, honours a two-year warranty, and walks. The product supplier ships a box. The owner inherits the variance.

As-a-Service breaks because no one in the standard chain controls the operating system over a 10–15 year horizon. The model only works when one party collapses three roles, design, install, operate, under a single P&L. That is why every winning case in this paper sits in one of two positions: a manufacturer with a connected product stack, or an integrator who owns the service relationship. It is not a coincidence. It is a structural requirement.



Only actors with both customer proximity and technical/software control can price outcome risk over a 10–15 year horizon.

Why product-only growth is *under pressure*.

Four structural signals every executive in HVAC and Building Systems should track - reshaping competitive logic faster than most providers are adapting.

Four signals every executive should track

The shift is not pricing creativity. It is the ability to measure, verify, and control building climate performance over time.

SIGNAL 01

Regulation is forcing building decarbonisation - and HVAC is the primary lever

The regulatory environment for buildings has shifted from voluntary efficiency targets to mandatory performance standards. The EU's recast EPBD, which entered into force on **28 May 2024**, requires Member States to ensure the renovation of the worst-performing **16%** of non-residential building floor area by 2030, rising to **26% by 2033**. It mandates zero-emission buildings for all new public buildings from 2028 and all new buildings from 2030. Member States must develop national renovation plans with a roadmap to phase out fossil fuel boilers by 2040, and subsidies for standalone fossil fuel boilers are prohibited from 2027.

Since **HVAC systems represent approximately 40% of commercial building energy consumption**, they are the single largest target for compliance. For as-a-Service providers, this creates a structural shift: building owners who previously treated HVAC replacement as discretionary maintenance are now facing regulatory timelines that turn it into a compliance obligation. Service-led and outcome-based models that remove the capital barrier and guarantee performance against regulatory benchmarks are winning not just on economics but on **speed to compliance**.

SIGNAL 03

HVAC is now the building's operating system, not a utility afterthought

The convergence of building management systems, IoT-connected equipment, and AI-driven optimisation has transformed HVAC from a static infrastructure component into the building's primary operating system. IoT Analytics' 2025 State of IoT update estimates that **the number of connected IoT devices will reach 21.1 billion by end-2025, grow to 39 billion by 2030, and exceed 50 billion by 2035**. In commercial buildings, connected HVAC systems now generate continuous streams of operational data - energy consumption, indoor air quality, temperature variance, equipment health, and occupancy patterns. This data infrastructure makes outcome verification technically feasible at scale. The question is no longer whether continuous monitoring is possible. It is whether as-a-Service Providers have built the commercial and contractual architecture to **monetise it**. Post-pandemic awareness of indoor air quality has accelerated this trend: building occupiers now treat ventilation, filtration, and thermal comfort as health and productivity requirements, not amenities.

IMPLICATION

The strategic risk for as-a-Service providers in HVAC and building systems is not missing growth. It is scaling hardware volume while margin migrates into software, lifecycle services, financing, and performance accountability. As-a-Service providers who do not capture that shift will find themselves competing on price in a commodity market they helped build.

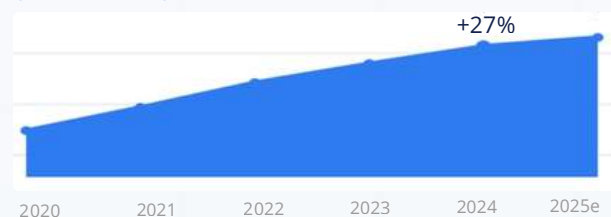
SIGNAL 02

Equipment is commoditising, but climate outcomes are not

Heat pump technology has matured rapidly, with global sales rising 27% between 2020 and 2024 (IEA, 2025). In the United States, heat pumps outsold natural gas furnaces by **30% in 2024** - a record high. Chiller efficiency has improved steadily, with variable-speed centrifugal chillers now achieving **COPs above 6.0** under part-load conditions. VRF systems, smart controls, and building automation are increasingly standard.

As the hardware performance gap between leading and second-tier manufacturers narrows, the margin premium must come from services, software, lifecycle guarantees, and performance accountability - not from the equipment specification alone. The top five HVAC manufacturers, Daikin, Midea, Gree, Carrier, and Trane Technologies, collectively hold **25-30% market share**, and all are investing in software, digital services, and outcome-based commercial models to differentiate beyond hardware.

HEAT PUMP MOMENTUM · GLOBAL SALES INDEX (2020 = 100)



Directional trendline. Source: IEA Heat Pumps Report 2025.

SIGNAL 04

Buyers want climate outcomes, not equipment ownership headaches

Commercial building owners, facility managers, corporate tenants, and institutional operators increasingly prefer lower upfront commitment, faster procurement cycles, and clearer accountability for indoor climate performance. The capital barrier is particularly acute for energy-intensive retrofit projects where chiller replacement, heat pump conversion, or building-wide BMS upgrades require significant investment.

Outcome-based models that shift this from **CAPEX to OPEX** - where the building owner pays for guaranteed cooling, heating, or indoor climate conditions rather than owning and maintaining equipment - bypass internal investment hurdles and transfer operational complexity to the provider. The **EU's F-gas Regulation phasedown (Kigali Amendment)**, which is progressively restricting high-GWP refrigerants, adds another layer of technical complexity that building owners would rather outsource than manage.

Three segments , one is out of scope, two are in play

The €80B European HVAC market splits roughly into three segments. Residential is out of scope for this paper. Commercial and industrial are both in play, with different mechanics.

SEGMENT 01

Residential (~30%) , Out of scope

Fragmented end-customers, low-asset-value installations, and difficult collections economics make unit-level as-a-service operationally hard. Apartment-block aggregation models exist but are early-stage and outside the commercial logic this paper addresses.



SEGMENT 02

Commercial (~50%) , A core opportunity

Hotels, hospitals, universities, public swimming pools, multi-site retail, large logistics warehouses, corporate campuses, and commercial refrigeration in food retail and cold-chain operations all fit. The model works where the building has an energy-intensive system, an EPBD or sustainability driver, and a single decision-making owner with multi-year procurement authority. Kaer's CaaS portfolio is concentrated in exactly this space , commercial cooling and commercial refrigeration, where load profiles are continuous and the building owner has full procurement control.



SEGMENT 03

Industry & Infrastructure (~20%) , Strong fit, different mechanics.

Data centres, pharma, food processing, and refineries are capital-strong buyers who do not need the financing wrapper, but they do want technical specificity, environment-specific expertise (explosion-proof, GMP, cleanroom), and risk transfer on uptime. The Energy Partners case in this paper (industrial refrigeration, South Africa) sits in this segment. Contract value here is driven by performance guarantees and operational risk transfer, not by OPEX conversion of CAPEX.



The architecture of a contractable outcome

Why the stack matters more than the contract.

Outcome-based models are not pricing models. They are *system designs*. The promise only works when hardware, software, service, verification, and governance all support the commercial commitment simultaneously. In HVAC and building systems, an outcome-based model is only as strong as its weakest layer.

P2S research and client engagements across more than 500 industrial As-a-Service cases find that as-a-Service providers who skip the governance and verification layers to accelerate deployment consistently encounter the same outcome: **billing disputes, margin leakage, and contract renegotiation within 18 months**.

In HVAC specifically, margin is rarely won or lost in the chiller or heat pump alone. It is won or lost in *degradation assumptions, maintenance scheduling, control logic, metering quality*, and the alignment between warranty terms and service-level agreements. For building owners contracting climate-as-a-service, this extends further: metering boundaries, baseline definitions, occupancy-adjusted billing, and regulatory compliance obligations must be embedded in the governance layer before the first contract is signed.

THE OUTCOME STACK · FIVE LAYERS

Each layer must be designed before the first contract is signed.

GOVERNANCE

The commercial guardrails: KPIs, SLAs, exclusions, liability caps, baseline definitions, repricing triggers, occupancy adjustment, margin dashboards

VERIFICATION

The source of truth: sub-metering, energy dashboards, indoor air quality sensors, audit logic that prove the promised outcome was delivered

SERVICES

The operational layer: commissioning, preventive & predictive maintenance, emergency response, refrigerant management, retrofit, decommissioning

SOFTWARE

The digital brain: BMS, energy management platforms, AI-driven optimisation, fault detection and diagnostics, occupancy analytics, demand response

HARDWARE

The physical system: chillers, heat pumps, boilers, AHUs, cooling towers, fan coils, thermal storage, refrigerant circuits, building integration

SYSTEM DESIGN

CEO MESSAGE

Do not treat As-a-Service as a commercial wrapper placed over an existing product. Treat it as a *full-stack operating model*. Each layer must be designed before the first contract is signed.

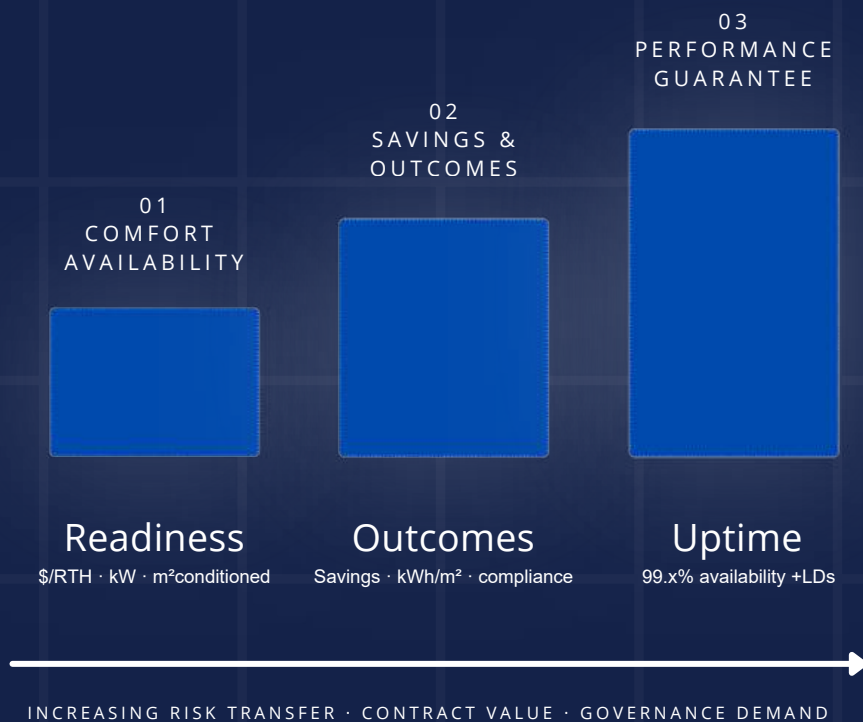
The model scales when all three sides win

The architecture of a durable business model.

The outcome-based model scales when it creates a clear economic win for the **provider**, the **customer**, and the **wider built environment** at the same time. When any one of the three sides loses, the model either fails commercially or fails to scale. Services carry structurally better economics than pure equipment sales. Predictive maintenance reduces cost and downtime. Circularity pressure is rising across the HVAC value chain as refrigerant regulations tighten. When all three sides win simultaneously, the model **builds switching costs and retention** that hardware sales cannot replicate.

FOR AS-A-SERVICE PROVIDERS	FOR CUSTOMERS	FOR THE GRID & PLANET
Stable recurring revenue Flatten lumpy project sales into predictable, compounding cash flows.	CAPEX to OPEX shift Bypass internal investment hurdles. Preserve core capital for business operations.	Asset longevity As-a-Service providers are financially incentivised to maximise equipment health and useful life.
Strategic differentiation Compete on guaranteed performance and risk transfer, not hardware price.	Risk transfer Outsource operational, maintenance, refrigerant, and obsolescence risk.	Circular economy Refrigerant stewardship, component reuse, and organised decommissioning become manageable at scale.
Enhanced loyalty Shift from transactional vendor to indispensable operating partner.	Future-proofing Continuous access to software upgrades, technical improvements, and managed performance.	Grid stability Optimised HVAC reduces building energy and carbon emissions, accelerating net-zero targets.

Three commercial archetypes that *actually work.*



Each archetype demands a different contractual architecture, financing logic, and operational depth. Choosing the wrong archetype for the buyer - or worse, promising an archetype you cannot measure - is the most common failure mode P2S encounters in the field.

01 Comfort & climate availability

ARCHETYPE

How it shows up in chillers, heat pumps, and building climate services.

The customer pays for **climate readiness, not equipment ownership**. In HVAC, that typically means paying for cooling capacity (per refrigeration ton-hour), heating output, or guaranteed indoor climate conditions within defined parameters. The as-a-Service provider designs, finances, installs, owns, operates, and maintains the equipment. The customer buys the outcome: comfortable, controlled indoor conditions at a predictable cost.

DIMENSION

DETAIL

Best for	Commercial office buildings, retail centres, educational campuses, hospitality, industrial facilities, and any building where climate availability matters more than equipment ownership.
Typical value metrics	Per refrigeration ton-hour (\$/RTH) · per kW of cooling or heating capacity per month · per square metre of climate-controlled space · fixed monthly climate availability fee.
Core value proposition	Shields the buyer from lifecycle risk. Equipment reaches end-of-life, refrigerant phase-downs require replacement, and efficiency degrades over time - <i>all absorbed by the as-a-Service provider</i> . A climate availability guarantee replaces asset ownership.
Key data requirement	Real-time energy monitoring and BMS integration. Without a single source of truth for how the building is being conditioned, availability models cannot be priced or governed accurately.

P2S PRACTITIONER INSIGHT

P2S engagements with Cooling-as-a-Service practitioners reveal that the most successful availability models use a *consumption-based pricing logic*: a fixed rate per unit of cooling delivered (\$/RTH) rather than variable billing based on equipment runtime. Customers consistently prefer predictability over granular usage tracking, and as-a-Service providers benefit from reduced billing variability and dispute risk.

One pioneer in the CaaS space across Asia described the shift from equipment-based to output-based pricing as the **single most important commercial design decision** they made. Their model requires **20–30% less hardware** than traditional installations because operational data tells them exactly how much capacity a building actually needs.

CEO WATCH-OUT

If lifecycle and utilisation risk is not priced and governed explicitly, margin leakage becomes structural. In HVAC models, margin leakage rarely starts with discounting. It starts with efficiency degradation assumptions that were never stress-tested, or with refrigerant replacement costs that were never priced in.

02 Energy savings & building outcomes

ARCHETYPE

How it shows up in energy performance contracts, retrofits, and managed campus services.

The customer pays for a **defined operating or economic result** - such as verified energy savings, regulatory compliance, or a guaranteed reduction in building energy intensity - rather than for the equipment itself. For building owners facing EPBD renovation mandates or corporate net-zero commitments, this model removes the capital barrier and transfers operational complexity to the as-a-Service provider.

DIMENSION

DETAIL

Best for

Commercial buildings undergoing major renovation, corporate campuses with sustainability targets, institutional buildings (universities, hospitals) with long operating horizons, and owners facing **EPBD minimum energy performance standards**.

Typical value metrics

Per site per month · shared savings against a verified baseline · guaranteed reduction in kWh/m² per year · compliance with a target energy performance class · carbon emission reduction certificates.

The regulatory angle

For owners facing EPBD deadlines - worst-performing 16% of non-residential buildings renovated by 2030 - this model is strategically attractive. Prerequisite: *clean baseline definitions, verified measurement protocols, and adjustment rules agreed before signing*.

Key risk

Mixing "shared savings" logic with "performance guarantee" logic in the same contract. One depends on a verified baseline and consumption data. The other depends on system uptime. Conflating them creates **irresolvable billing disputes**.

P2S PRACTITIONER INSIGHT · COOLING-AS-A-SERVICE PARALLEL

One provider, initially positioned around shared savings, deliberately moved away from that structure because it introduced complexity and disputes about actual versus projected savings. They shifted to a consumption-based model where the customer pays for **verified output**, not projected efficiency. Current pricing has three components: a monthly availability fee, a monthly maintenance fee, and a variable charge based on verified consumption. Contract terms 10–20 years.

PRICING ARCHITECTURE · THREE COMPONENTS

A commercially scalable model for building savings & outcomes.

FIXED

Availability fee
Monthly

+

FIXED

Maintenance fee
Monthly

+

VARIABLE

Verified consumption
Per-unit charge

Contract terms typically 10–20 years, aligned with the expected asset lifecycle. Directly applicable to whole-building HVAC-as-a-service contracts.

CEO WATCH-OUT

Do not promise savings or shared outcomes unless you have a clean baseline definition and a credible verification methodology in place before the contract is signed. If you cannot prove the savings, you cannot bill for them. In HVAC, baselines are vulnerable to occupancy, weather, and usage shifts - all must be addressed in the contract methodology.

Public-sector procurement friction. Most public tenders for building retrofits are still structured as CAPEX awards, not multi-year OPEX commitments. As-a-service offers have to be reframed, typically as Energy Performance Contracts under existing ESCO frameworks, to fit budgetary rules. In some Member States (NL, FR), reclassification under EU public accounting standards (ESA 2010) determines whether OPEX subscriptions count against the public deficit. Without a procurement-route answer, the model dies in legal review, not commercial review.

03 Performance guarantees

ARCHETYPE

How it shows up in critical environments, data centres, hospitals, and high-stakes building operations.

The customer pays for guaranteed operating performance under defined conditions. This is the **highest-value archetype** and the most contractually demanding. The as-a-Service provider is no longer selling service effort. It is selling **downside risk transfer**. In critical environments - data centres, hospitals, pharmaceutical manufacturing, cleanrooms, trading floors - the customer is buying the reduction of operational uncertainty.

DIMENSION	DETAIL
Best for	Data centres, hospitals, pharmaceutical production facilities, cleanrooms, financial institutions, and any building or zone where HVAC failure has immediate economic, regulatory, or safety consequences.
Typical value metrics	Availability percentage by service window (e.g. 99.8% uptime) · response or restoration time · temperature and humidity precision thresholds · IAQ floors · liquidated damages for non-performance.
Core value proposition	Risk transfer. Operational confidence. Clearer downside protection. One accountable party for climate performance across the full contract life.
Contract requirement	Defined Force Majeure and site-readiness exclusions must be explicit and agreed before signing. Without them, as-a-Service providers absorb penalties for power outages, building fabric failures, and external events they did not cause.



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OPENBLUE

Guaranteed Asset Performance

Guaranteed outcomes and risk-sharing for Net Zero Buildings as a Service, Infrastructure as a Service and Buildings as a Service. Customers pay for expected outcomes rather than assets. Multi-decade performance contracts with institutions including Colorado State University and a 40-year concession with the University of North Dakota.

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GLOBAL SERVICE
EXPERTS

2022
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PROOF POINT · TRANE TECHNOLOGIES

Energy Savings Performance Contracting

DOE-qualified ESCO and NAESCO-accredited. Designs, implements, and guarantees building energy upgrades with no upfront capital outlay - project costs repaid from validated energy savings over the contract term.

\$3.6B
GUARANTEED
ENERGY SAVINGS
DELIVERED

2.5x
TYPICAL
ESPC-TO-CAPEX
DEAL MULTIPLE

CEO WATCH-OUT

This is not a standard service contract. It is an insurance-like promise. If you are absorbing downside performance risk, your margin must reflect that. In HVAC performance guarantees for critical environments, the gap between a maintenance SLA and a performance guarantee can represent a **2-3x difference in contract value** - and an equivalent jump in liability if exclusions are poorly drafted.

Where margin is created and lost

Recurring billing alone does not create margin.

Recurring billing does not create margin by itself. Margin shifts to the player that can *measure, contract, finance, and operate* the outcome better than competitors. The map below shows the primary drivers on both sides of the margin equation.

MARGIN CREATED BY

- Risk transfer and performance accountability
- Lifecycle monetisation over the asset life
- Software-enabled optimisation and fault detection
- Customer switching costs and high retention
- Capital efficiency for the building owner

MARGIN AT RISK FROM

- Underpriced degradation and refrigerant replacement assumptions
- Weak contract boundaries and open-ended liability
- Poor metering quality and disputed billing data
- Manual billing processes that cannot scale
- Financing structures misaligned with contract tenors
- Sales incentives rewarding booking volume over contract health

Six recurring margin risks in HVAC and building systems service models

- 01 Underpriced technical risk.** Efficiency degradation, refrigerant replacement, and equipment lifecycle assumptions are modelled at best-case rather than field-case conditions. Mid-life overhaul (years 8–12) is the most commonly underpriced cost in long-term climate contracts.
- 02 Weak contract boundaries.** Outcome language is not paired with strict scope, occupancy adjustment, and force majeure exclusions. Every unclear boundary between the provider's system and the building envelope eventually becomes a dispute.
- 03 Poor metering quality.** Disputes about energy savings or climate performance are almost always disputes about *whose data is authoritative*. A contested source of truth destroys margin and trust simultaneously.
- 04 Manual billing processes.** Cannot handle large portfolios of buildings with variable monthly invoices without significant headcount - eliminating the margin benefit of scale.
- 05 Financing mismatches.** HVAC equipment lifecycles of 15-25 years require matching long-tenor debt. Mismatched tenors create cash flow gaps and balance sheet pressure.
- 06 Misaligned sales incentives.** Teams undercut subscription offers with CAPEX alternatives to hit short-term booking targets. Commission structures must be redesigned *in parallel* with the commercial model, not after it has stalled.

Who is winning, and *why*.

Five practitioner cases from P2S primary research and public sources.
Patterns are consistent across sectors and geographies.

The logo for Kaer, featuring the word "kaer" in a lowercase, sans-serif font.

KAER
Commercial Cooling
Asia

The logo for Energy Partners, featuring the letters "EP" in a stylized, bold, sans-serif font.

ENERGY PARTNERS
Industrial Refrigeration
South Africa

The logo for Carrier, featuring the word "Carrier" in a classic, italicized serif font.

CARRIER
Building Systems
Global

The logo for Daikin, featuring the word "DAIKIN" in a bold, sans-serif font with a stylized "D" that incorporates a diagonal line.

DAIKIN
HVAC Manufacturing
EU & Asia

The logo for Adven, featuring a stylized "A" icon followed by the word "Adven" in a sans-serif font.

ADVEN
Industrial & Real Estate Energy
EU

The logo for Danfoss, featuring the word "Danfoss" in a stylized, cursive script font.

DANFOSS
Climate Solutions
Global

Cooling-as-a-Service

ARCHETYPE 01



KAER
Commercial & Industrial Cooling
Asia
Cooling-As-A-Service (CaaS)

STRATEGIC FRICTION

Commercial building owners face aging chiller plants, rising energy costs, and sustainability pressure. Upfront capital to replace cooling infrastructure - **often \$2–10M for a large commercial building** - creates a significant adoption barrier, particularly for owners who view HVAC as non-core assets in-house.

OUTCOME BASED OFFER

Kaer's CaaS model (launched 2013) lets building owners buy cooling at a fixed **\$/RTH** rate on a pay-as-you-use basis. Kaer designs, finances, installs, owns, monitors, and operates the entire chilled-water plant. At INSEAD Singapore, Kaer reduced cooling energy consumption by 70% within six months. Additionally, Kaer currently manages **over \$200M of CaaS assets** across 10M+ sq ft of space, contract terms 10–15 years.

KEY LESSON

Availability models work when the provider can monitor asset condition well enough to price lifecycle risk with confidence. The AI and IoT layer is the **contractual protection mechanism**, not a product feature. Kaer's data shows CaaS installations require **20–30% less hardware** because real-world performance data eliminates over-specification.



ENERGY PARTNERS
Industrial Refrigeration
South Africa
Cooling-As-A-Service (CaaS)

STRATEGIC FRICTION

Industrial and food processing operators face aging refrigeration plants, unreliable grid power, and capital constraints. The combination of energy instability and high upfront cost for modern ammonia systems creates a compelling case for outsourced cooling.

OUTCOME BASED OFFER

EP invests 100% of the capital and operates the plant for up to 15 years. For Sovereign (poultry), EP invested **~\$5M** in a 5.47 MWR ammonia plant with 20% baseline energy savings. For Clover SA (dairy), \$20M in a 10 MW plant with integrated 1.6 MW solar. EP is now building South Africa's largest ammonia cooling plant for **Aspen Pharmacare under a \$16M CaaS agreement targeting 40% energy reduction and yields 10x higher EBITDA margins**.

KEY LESSON

CaaS is primarily a *risk transfer product*, not merely a financing mechanism. Digital twin technology and 24/7 remote monitoring enable a proactive approach to efficiency that manual operation cannot replicate.

Client names cited with permission from Energy Partners.

Healthy Buildings & Subscription HVAC

ARCHETYPE 02



Carrier

CARRIER

Building Systems
Global
Indoor Air Quality & Energy
Outcomes

STRATEGIC FRICTION

Post-pandemic, building occupiers demand verified indoor air quality alongside energy efficiency. Owners must demonstrate both health-safe environments and sustainability credentials, but lack the in-house expertise to deliver and verify both simultaneously.

OUTCOME BASED OFFER

Carrier's Healthy Buildings Programme integrates HVAC equipment, indoor air quality solutions, fire and security systems, and digital building management into outcome-based service models. By combining **Abound** (digital platform) with its equipment portfolio, Carrier delivers verified building health and energy outcomes under managed service agreements.

KEY LESSON

The convergence of IAQ and energy efficiency creates a compound outcome that commands a measurable premium. MIT research finds that wellness-certified buildings achieve up to 7.7% higher effective rents than uncertified peers (*MIT Real Estate Innovation Lab*), and a meta-analysis of green building economics shows a 5–9% occupancy advantage for certified properties (*Dalton & Fuerst, 2018*).



DAIKIN

DAIKIN

HVAC Manufacturing
Europe & Asia
Climate-As-A-Service

STRATEGIC FRICTION

As the world's largest HVAC manufacturer, Daikin faces the paradox of hardware commoditisation: leading technology does not guarantee leading margin. Owners increasingly compare systems on *total cost of ownership and guaranteed performance* rather than equipment specifications alone.

OUTCOME BASED OFFER

Daikin is progressively developing subscription and as-a-service models across its commercial HVAC portfolio, leveraging vertically integrated manufacturing and an expanding digital services platform. The approach combines heat pump and VRF technology leadership with remote monitoring, predictive maintenance, and energy optimisation. The 2023 **acquisition of Alliance Air Products** expanded the ability to deliver complete climate solutions under managed service models.

KEY LESSON

As-a-Service providers who control the full stack, from equipment technology to digital platform to service network, gain a pricing advantage that is visible in attach rates: Daikin's commercial maintenance attach rates exceed 60% for large projects. That installed-base visibility is what allows vertically integrated providers to price lifecycle risk with greater confidence than those assembling third-party components.



Adven

ADVEN

Industrial & real estate energy,
district heating
Nordics, Baltics, Central Europe
Energy-As-A-Service

STRATEGIC FRICTION

Industrial sites, municipalities and property owners need to decarbonise heating without taking on heavy upfront capex or operating specialised energy infrastructure themselves.

OUTCOME BASED OFFER

Adven explicitly positions around Energy as a Service, providing district heating, geoenery, steam, heat, cooling and water treatment for industrial and real-estate customers. According to the company, they invest in, own, develop and operate their clients' energy production facilities under long-term partnerships, and operate more than 100 district-heating networks across Sweden, Finland, Estonia and Latvia.

KEY LESSON

Adven shows that the strategic opportunity for HVAC and building systems companies is not only to sell equipment, controls or installation services, but to move higher in the value chain by taking accountability for delivered thermal outcomes. For building owners, the pain point is not simply buying better heat pumps, chillers, boilers or controls; it is achieving lower-carbon, reliable, cost-predictable heating and cooling without adding operational complexity or upfront capex.

Guaranteed Performance & Optimisation

ARCHETYPE O3



DANFOSS

Climate Solutions

Global

Performance-based Efficiency

STRATEGIC FRICTION

Commercial buildings operate with HVAC systems that consume **40–60% more energy** than necessary due to suboptimal control, poor commissioning, and lack of continuous optimisation. Owners know efficiency is available but lack the operational capability to capture it.

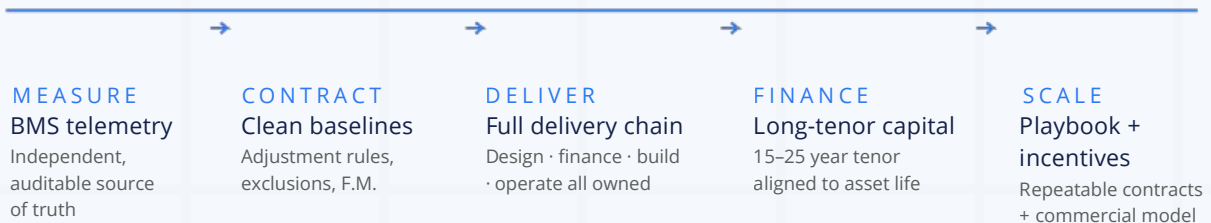
OUTCOME BASED OFFER

Danfoss Climate Solutions provides intelligent HVAC components - variable speed drives, electronic expansion valves, sensors - combined with its **Leanheat AI** platform for building energy optimisation. Powered by over a decade of real-time data from more than **6,000 buildings**, Leanheat **saves 180,000 MWh annually** and reduces peak loads by up to 20%. With enercity AG in Hanover, Leanheat is being **deployed across 50,000 housing units**, achieving 5–10% consumption reduction.

KEY LESSON

Component manufacturers who embed intelligence into their products (drives, valves, sensors) create the *data infrastructure* that enables system-level performance guarantees. Danfoss's dual position as component supplier and digital services provider - reinforced by its strategic investment in Aneo Retail for food retail EaaS - demonstrates how the enabling technology layer can become the foundation for outcome-based commercial models.

The pattern across all six cases



Every winning case in this research combined all five. Skip one and margin, retention, or scale breaks.

Kaer, Energy Partners, Carrier, Daikin, Adven, and Danfoss differ in scale, geography, and target segment - but they share the same operating architecture. *Measure, contract, deliver, finance, scale*. The firms winning in this space are not the ones with the cheapest hardware.

Most As-A-Service failures are *operating model* failures.

Operating enablers from first deal to full scale.

Six dimensions that need to be designed together

Moving to outcome-based models is a change in operating DNA - not a pricing change.

Value proposition, bundling & pricing

- Define one clear customer value metric before anything else.
- In HVAC, decide: \$/RTH, \$/kWh saved, \$/m² conditioned, or availability %.
- Establish discount discipline and renewal mechanics before the first contract.

01

Legal, governance & risk

- Build SLA structures, verification rules, and contractual remedies.
- Define occupancy adjustment, weather normalisation, and force majeure exclusions.
- Monitor margin drift and compliance across the portfolio.

02

Financing & strategic accounting

- Define the capital path: on-balance-sheet, external debt, or SPV.
- Align cash flow logic with contract duration and 15–25 year asset life.
- Self-fund the first 3–5 projects before engaging external partners.

03

Sales motion, culture, & incentives

- Adapt the sales narrative from equipment specification to building outcomes.
- Align incentives with contract health, retention, and realised margin.
- Misaligned commissions are the primary internal sabotage mechanism.

04

IT infrastructure & billing automation

- Verify CRM, ERP, billing, and contract-management readiness.
- Build usage-to-invoice workflows and automated reporting logic.
- Manual billing cannot handle large building portfolios at scale.

05

Digitalisation, data, & performance

- Make the promised outcome measurable, auditable, and manageable.
- Build KPI dashboards, BMS integration, energy reporting flows.
- The digital backbone must be in place before the first invoice.

06

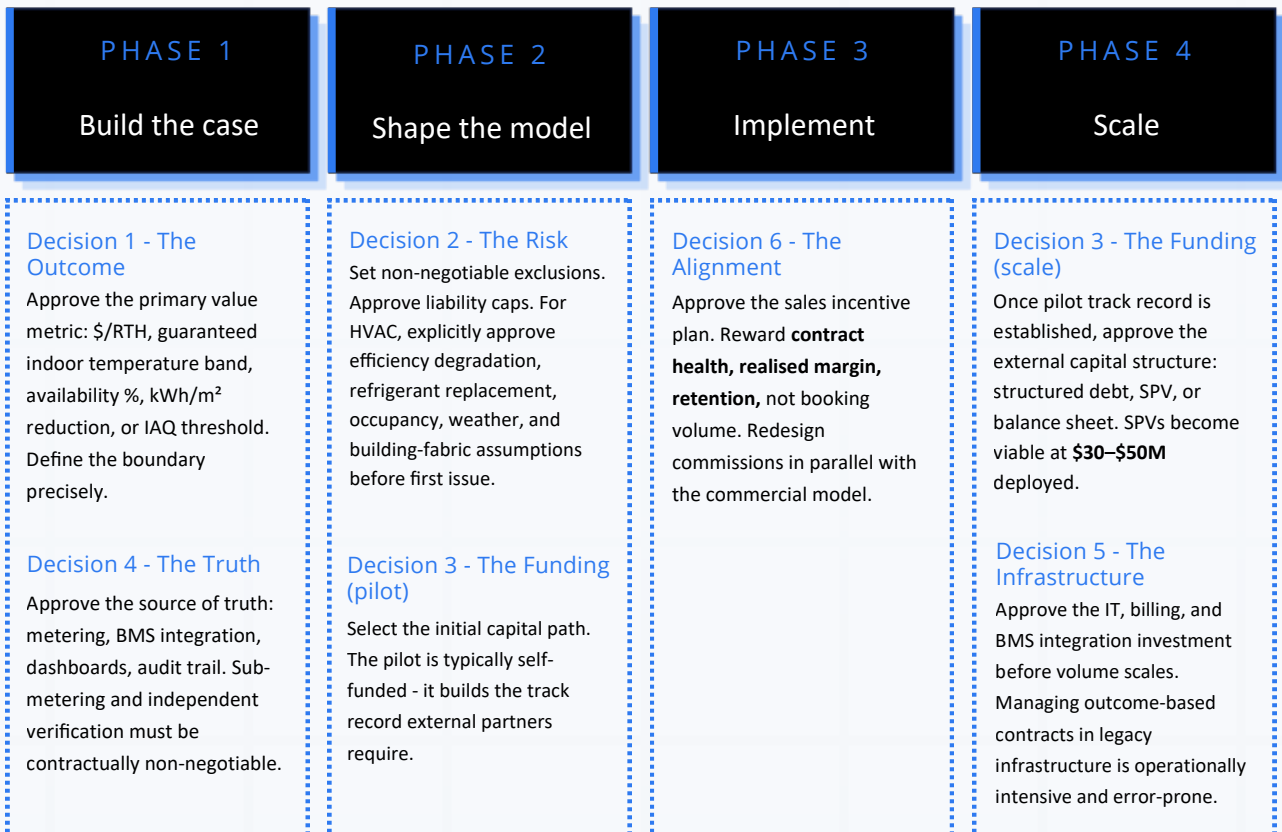
SEQUENCING GUIDANCE

Dimensions 1, 2, and 4 (Value proposition, Legal governance, Sales incentives) are non-negotiable prerequisites - addressed before the first contract is signed. **Dimension 3** (Financing) starts self-funded; external debt or SPVs come at scale. **Dimension 5** (IT & billing) must be validated before the first renewal cycle. **Dimension 6** (Digital backbone) is built in parallel with the pilot. *Retrofitting any of these after scale creates exactly the operational and margin problems the model was designed to avoid.*

For the financing architecture that supports this transition, the Fish Model cash-flow profile and the three proven financing paths from pilot to scale, see the Appendix.

From first deal to full scale

Four phases. Six CEO-level decisions that cannot be delegated. The sequence matters as much as the decisions.



BEFORE SCALING, THE CEO SHOULD BE ABLE TO CONFIRM ALL FIVE

- ☐ We can measure the promised climate outcome reliably and continuously.
- ☐ We control enough of the delivery chain to influence the result.
- ☐ We have priced the technical risk rather than assumed it away.
- ☐ Our financing matches the contract and asset-life reality.
- ☐ Our systems and incentives can scale the model without hidden margin leakage.

How P2S helps

Four types of support - available at any stage. Not sequential. You may need several at once.

Educate

Build understanding across the organisation. Executive briefings on HVAC and Building System As-a-Service models, industry playbooks, and readiness assessments - grounded in real case data from **more than 500 industrial transitions**, not theory.

When your leadership team needs to understand what outcome-based HVAC models really require before committing.

Advocate

Create internal conviction and stakeholder alignment. Frame the investment case for the board, map decision-makers across commercial, technical, and finance functions, and build cross-functional consensus around the model.

When the idea exists but lacks executive buy-in or cross-functional support to move forward.

Facilitate

Design, build, and launch the model. We *co-create* the offer, pricing structure, contracts, delivery logic, and financing path for HVAC and Building System As-a-Service models - and close the first deal alongside your team.

When you are ready to move from concept to reality and need hands-on execution support.

Professionalise

Transfer knowledge, build internal tools and methods, train commercial and operational teams, and create a **repeatable playbook** for independent scaling across your HVAC or building systems portfolio.

When the model works but your organisation needs to own it, replicate it, and scale it independently.

Let's talk about your *outcome-based* model.

In a world where resource scarcity is becoming a structural reality, we believe the shift from *ownership to usership* helps optimise resource utilisation and support more resilient industrial systems. In that context, western industrial firms must accelerate their transition towards service-driven and more circular business models. **P2S exists to support industrial firms in that transition.**

BOOK A CONVERSATION

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Financing the *transition.*

Appendix

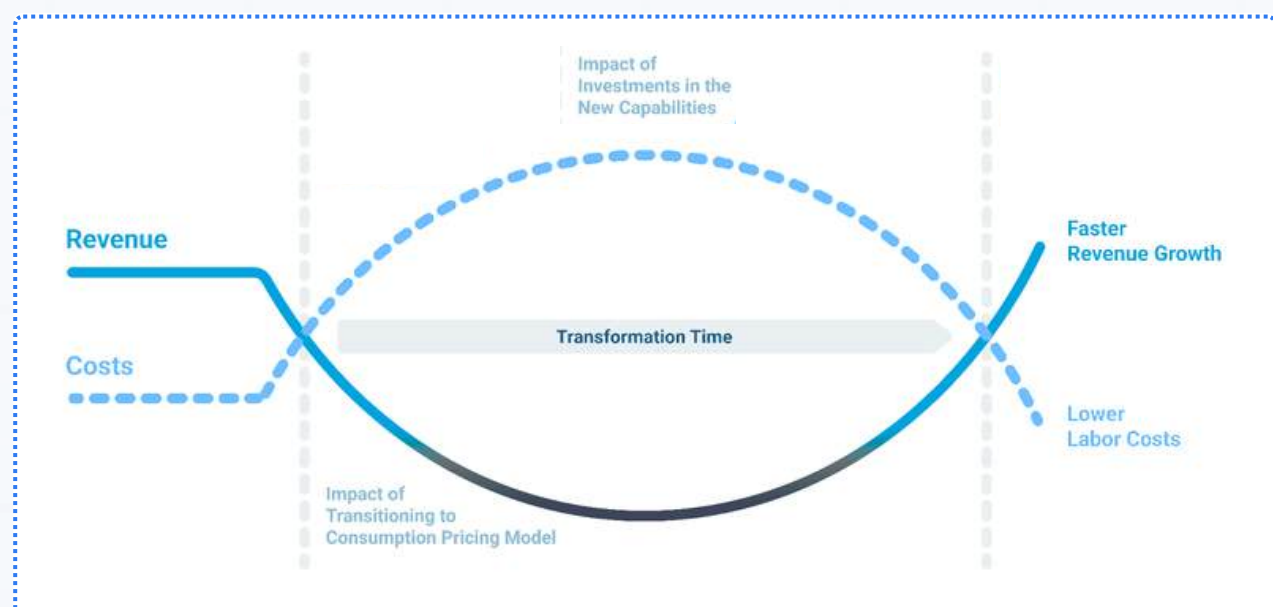
Financing the transition

The shift from CAPEX sales to outcome-based contracts changes the provider's cash flow profile materially. This appendix sets out the cash-flow pattern (the Fish Model) and the three financing paths that have proven viable in moving from pilot to scale.

A CAPEX transaction delivers a large upfront booking with limited recurring revenue. An outcome-based contract requires upfront investment in asset financing and operational infrastructure, with recurring revenue that builds over time.

This cash flow pattern is known as the Fish Model - originally developed by the Technology & Services Industry Association to describe the transition from transactional to recurring business models. The initial dip below the CAPEX baseline - the body of the fish - is temporary, but the recurring revenue tail that follows is structurally more durable and valuable than any single transaction.

THE FISH MODEL · REVENUE & COST TRANSFORMATION¹



Source: Technology-as-a-Service Playbook 2016 (TSIA), adapted. Crossover point depends on contract size, financing structure, and cost-to-serve efficiency. Providers with tighter governance and lower augmentation risk reach crossover earlier.

The **crossover point** - where cumulative outcome-based revenue exceeds the equivalent CAPEX stream - typically occurs **between four and seven years**, depending on contract size, financing structure, and cost-to-serve efficiency. The Fish Model shape is manageable - not a reason to avoid the transition, but a **financing design challenge to solve**.

Financing the transition

01 Self-funding Self-funding the first 3–5 projects builds the operational track record that external financing partners require before committing capital.	02 Structured external debt Accessible once the track record exists and contract revenue is <i>demonstrably predictable</i>. HVAC lifecycles of 15–25 years require matching long-tenor debt.	03 Special purpose vehicle Ring-fences contract portfolios off the main balance sheet. Viable at \$30 to \$50M of deployed assets.
WHEN · PILOT PHASE	WHEN · EARLY SCALE	WHEN · FULL SCALE

DESIGN PRINCIPLE

Capital structure follows contract structure, not the other way around. A subscription business financed like a product business destroys the crossover year. The right path unlocks each one in turn.