Scaling Beyond the Trial

Rethinking Digital Health Growth Models from a VC perspective

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Strategic Overview: The Portfolio Logic for Scaling Digital Health startups

Digital health has moved beyond the limits of single-point solutions. Today, real scale comes from building coordinated systems of companies that work together across specific therapeutic areas. This white paper presents Allegory Capital's multi-layered portfolio strategy, designed to align scientific validation, user engagement, clinical delivery, and measurable revenue impact. Tailored for regulated markets and value-based systems, this model turns digital health into a powerful engine for both clinical outcomes and commercial success. It offers a practical framework for startups, investors, and corporate innovators to allocate capital effectively and drive lasting impact.

At Allegory Capital, we categorise Digital Health into various groups based on their direct or indirect impact on clinical pathways. Each tier enhances the others. Tier 1 establishes scientific validity. Tier 2 expands user reach and data flow. Tier 3 integrates into clinical workflows. Tier 4 enables adoption by aligning with payers, industry, or regulatory systems. The full stack forms a cohesive portfolio for a therapeutic area, capable of generating clinical evidence, stakeholder traction, and scalable revenue across regions, despite local specificities.

This model naturally adapts to market realities driven by reimbursement differences. In the United States, the system can support digital health operating costs and encourage rapid scale because of the difference in the budget allocated to reimburse drugs per patient. In Europe, market access depends on demonstrating economic value through cost containment.

Portfolios built with regional intelligence, shared data, and centralised regulatory design can succeed in both systems if they wisely choose their growth territory to absorb the first years of life of a digital health venture.

Artificial intelligence compounds these advantages. In Tier 1 and Tier 3, it powers predictive diagnostics and automated content. In Tier 2 and Tier 4, it enhances personalisation, compliance, and the capture of real-world evidence. We recommend, therefore, that companies not fall into the AI rat race and disrupt their product

roadmap, but instead distribute AI capabilities across ventures, reducing capital intensity and enhancing defensibility.

This offers clear advantages for each stakeholder:

- ➔ **Startups** operate with shared GTM models, reducing friction.
- ➔ **Corporations** gain access to validated, pipeline-aligned innovation with clinical and regulatory integration.
- ➔ **Investors** capture exposure to a diversified clinical vertical with visible exit pathways, capital discipline, and the potential for compounding data advantage.

Figure 1. Allegory Capital is participating in the Digital Health Panel organised by Reuters Pharma (2025)

1. Where Scale Breaks: Inside the Execution Gap of Digital Health

The evolution of digital health reveals two dominant startup archetypes: science-led ventures rooted in clinical systems and growth-led ventures shaped by digital-native teams. Each model captures a distinct slice of the healthcare innovation landscape, contributing complementary assets to the broader ecosystem. Yet, despite their promise, both often fall short of delivering sustained, system-level impact. The reason? An execution gap that widens as companies scale—not in product development, but in alignment with market, stakeholders, and care infrastructure.

Science-focused startups, such as Skinive or MyMee, typically emerge from academic, hospital, or regulated industry settings. Their core advantage is clinical credibility—deep expertise in therapeutic outcomes, validated evidence, and a product focus on unmet medical needs like diagnostic accuracy, treatment adherence, or specialised access. These ventures follow a rigorous validation pathway and are often supported by institutions, regulators, and scientific networks. But their precision often comes at the cost of agility: commercial strategy is delayed, user engagement can be secondary, and speed-to-market lags behind investor expectations or competitor benchmarks.

In contrast, growth-focused startups, such as Apricity or Clue, are built by teams with roots in SaaS, consumer tech, or performance marketing. These firms pursue category momentum over clinical depth, focusing on frictionless experiences in high-volume verticals like mental health, fertility, or general wellness. They scale quickly via intuitive onboarding, elegant interfaces, and data-driven engagement loops. Yet while they often gain early traction, they risk underinvesting in clinical validation, regulatory defensibility, or long-term reimbursement pathways—undermining adoption within formal healthcare systems.

What unites both archetypes is a partial playbook. One prioritises validation without scale. The other drives adoption without systemic integration. The next wave of winners in digital health may be those who can blend both: retaining scientific integrity while embedding scalable UX and commercial traction from day one.

Each approach brings forward clear strengths. Science-led companies produce validated outcomes and align with formal care. Growth-led ventures deliver access and generate user-driven datasets across large populations. However, challenges arise when either archetype attempts to cross into the other's domain. Scientific ventures often encounter lengthy sales cycles, budget constraints, and jurisdictional privacy limitations when expanding commercially. While successful in user acquisition, growth-led companies usually face complexity in navigating regulations, aligning with clinical needs, and monetising B2B relationships.

This divergence creates a structural gap. The industry increasingly relies on ventures that produce clinical-grade evidence and ventures that generate behavioural data, but these capabilities rarely coexist within a single company. Commercial scale, regulatory fluency, and clinical validation require different execution models, timelines, and funding strategies. Relying on a single team or product to meet all three requirements creates friction at scale.

What emerges is a pattern of role saturation. Science-led startups often evolve into project-based ventures, organised around a therapeutic milestone or academic partnership. Their momentum depends on research timelines and industry co-development cycles. Growth-led startups expand into large consumer bases but often operate outside reimbursement pathways, encountering limits in retention and defensibility. Each serves a piece of the healthcare puzzle but remains optimised for only part of the value chain.

The solution lies in system-level architecture. Instead of stretching single companies across the entire complexity of clinical and market demands, digital health can scale through portfolios that distribute these capabilities. When science, engagement, workflow, and reimbursement functions are coordinated across purpose-built ventures within the same therapeutic area, the result is a modular, scalable infrastructure. This approach moves digital health from fragmented innovation to scalable health system transformation.

2. Designing for Scale: A Functional Blueprint for Therapeutic-Area Portfolios

Scaling digital health requires more than a breakthrough product. It demands a model that distributes complexity across ventures with distinct capabilities, all aligned around a common therapeutic focus. Rather than expecting a single startup to manage evidence generation, user engagement, professional integration, and systemic adoption, scale emerges when purpose-built companies working in coordination activate each layer of the healthcare value chain.

This layered model consists of four strategic tiers:

Tier	Functions	Capabilities
Tier 1	Clinical Outcome Engine	Diagnostic models, treatment planning, and AI-supported clinical tools
Tier 2	Consumer engagement platforms	Digital onboarding, behavioural data capture, self-assessment flows
Tier 3	HCP-enablement tools	Decision support, knowledge automation, and error prevention in clinical practice
Tier 4	Ecosystem integrators	Value-based pricing enablers, wellness platforms, and digital reimbursement scaffolding

Figure 2. Layered functional tiers across the healthcare value chain

When organised around a therapeutic area, these tiers function as a cohesive system. Tier 1 generates evidence; Tier 2 builds reach and context; Tier 3 drives activation at the point of care; and Tier 4 translates these inputs into market-wide adoption. Each venture executes independently but benefits from shared interoperable data and coordinated governance.

This addresses one of digital health's core tensions: the mismatch between the cost of clinical-grade validation and the economics of digital growth. For example, the acquisition cost of a user through digital channels in consumer health ranges from CHF 50 to CHF 150.

Recruiting a patient into a clinical trial, especially in fertility or oncology, often exceeds CHF 1,500 per individual. Sustaining acquisition and evidence generation within a single company creates capital pressure and operational dilution.

Layered portfolios absorb this pressure by distributing it across multiple components. A Tier 2 company optimises for engagement and intent capture. Tier 1 converts that intent into outcomes. Tier 3 ensures insights reach the clinician's workflow, and Tier 4 translates performance into reimbursable or recognised value. Each part is specialised; together, they enable scale with integrity of evidence.

This model becomes particularly effective in regulated markets. In the U.S., reimbursement systems offer sufficient margin to absorb growth costs for digital ventures that deliver clinical value. In Europe, market access requires demonstrated efficiency or cost containment, often linked to public health goals. A layered approach supports speed without sacrificing compliance or interoperability in both cases.

Recent policy momentum strengthens this structural logic. Governments are investing in precision medicine and shifting procurement toward value-based care. Real-world evidence is no longer optional—it is foundational. The ventures closest to the patient, whether through monitoring, adherence tracking, or behavioural feedback loops, are best positioned to generate this evidence. Digital platforms that integrate upstream and downstream insights can support differentiated labelling, protect exclusivity, and provide defensible economic arguments.

Companies that align with this logic gain an operational advantage. Rather than building from scratch, they plug into a coordinated infrastructure that reduces friction, accelerates experimentation, and distributes cost. Ventures serve one function but participate in a broader system that meets scientific, clinical, and commercial requirements simultaneously.

3. From Blueprint to Stack: Building the Operating System of Digital Health

Figure 3. Allegory Capital's participation in the Women's Health Summit in New York, hosted by the NYSE in 2023

Effective digital health portfolios benefit from a shared set of modular tools—from patient onboarding interfaces and secure data layers to clinical documentation modules and real-world evidence capture protocols. These shared components reduce the time and cost for startups to comply with medical-grade standards, while enabling investors to benefit from repeatable due diligence criteria. This validated module library is aligned with regulatory expectations and commercial use cases.

The second layer is data governance. Each venture within the portfolio retains control over its data but adheres to a framework

that enables ethical interoperability. Clinical data from Tier 1 ventures can be anonymised and structured for use by Tier 3 decision tools. Behavioural data from Tier 2 applications can enrich adherence tracking in Tier 1 or provide predictive triggers in Tier 4 pricing algorithms. This flow is never arbitrary—it follows data protection laws, cross-border constraints, and therapeutic relevance. The system is designed to support retrospective studies and prospective validation, creating an internal evidence pipeline that extends beyond any company.

The third layer is regional adaptation. In markets like the United States, high reimbursement levels allow digital health ventures to capture value directly from healthcare systems. This supports the cost of growth, funds product innovation, and enables independent distribution. In Europe, the model is inverted: reimbursement pressure forces startups to demonstrate cost efficiency and budget impact early. These systems do not reward app quality or design sophistication—they reward savings and measurable outcomes. Allegory adapts the portfolio composition accordingly: Tier 1 and Tier 4 ventures are emphasised in Europe to support outcomes reporting and payer integration. Tier 2 and Tier 3 ventures are more scalable in U.S.-based market entries.

AI is a horizontal enabler across tiers, but must be deployed with discipline. In Tier 1, AI augments scientific modelling and diagnostic support. In Tier 3, it enables context-aware content delivery and error prevention. These are stable, high-utility domains. In Tier 2 and Tier 4, however, the temptation to become “AI-first” can displace core product logic and accelerate capital burn. At our firm, we ensure that AI investments align with clinical value creation, rather than market signalling. Where startups require deep models, we enable shared algorithm development across ventures. Where speed-to-market matters, we focus on data labelling, signal extraction, and explainability. The goal is not to lead with AI but to use it to strengthen product defensibility and system coherence.

By combining infrastructure with compliance-ready data pathways and region-specific GTM strategy, you could convert the idea of a portfolio into a functioning healthcare system. Each startup delivers a focused product; together, they form a vertical that can contract,

validate, and scale with the same rigour as an integrated medical solution.

Markets regulate differently and go-to-market strategies vary, but the underlying medical need remains globally consistent. By structuring portfolios around clinical areas rather than geographies or product categories, you could connect innovation directly to business-line impact.

This positions corporate investors to act not as passive funders, but as orchestrators of value chains where data, care delivery, and commercial execution align. It also ensures that investments reinforce top-line performance, not just strategic intent.

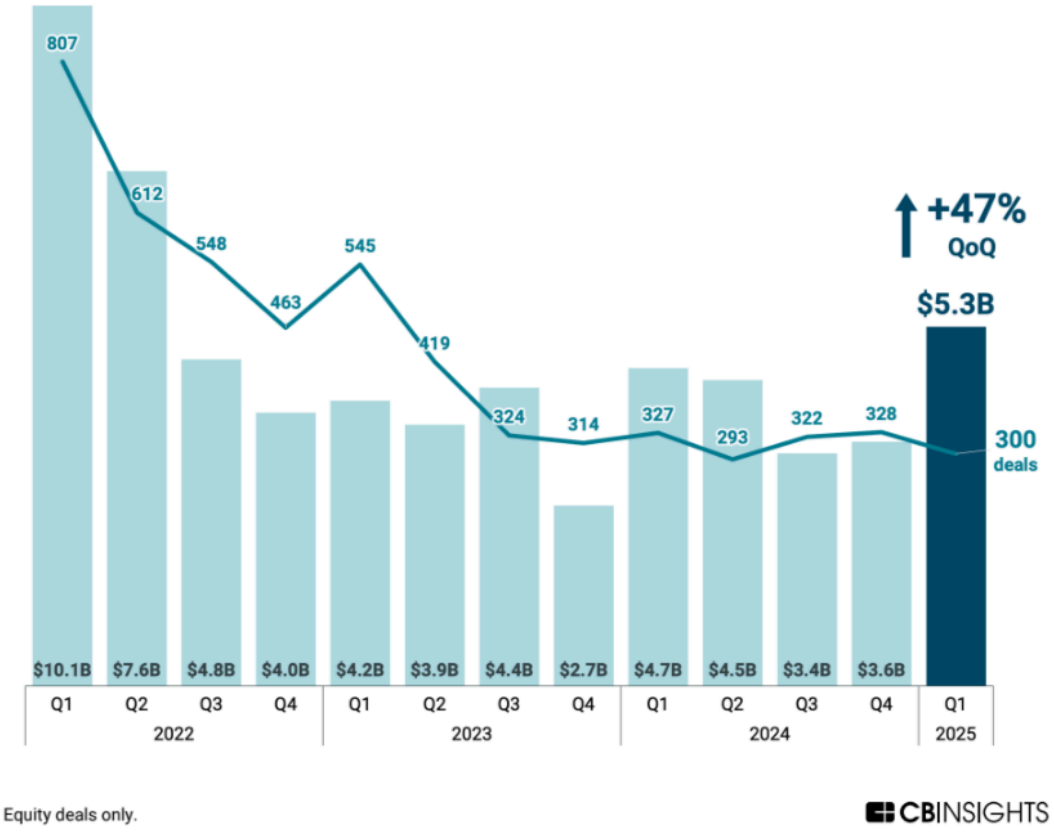

Figure 4. Digital health equity funding up 47% as investors concentrate capital (Source: CB Insights & Pitchbook)

4. Unlocking Value: Commercial Architecture and Exit Pathways

When companies contribute distinct roles within a system—rather than each trying to solve everything—the result is financial clarity. Ventures can be monetised based on their unique value at different points in the care journey. At the same time, investors and operators gain optionality across evidence generation, data licensing, and reimbursement-linked outcomes.

For startups, this enables business models that reflect their actual function. Companies focused on clinical validation can monetise through co-developed IP, licensing of predictive models, or prospective evidence engines. Ventures that generate user engagement and adherence insights gain value through longitudinal datasets and real-world usage metrics. Tools supporting clinicians—whether for guidance, content delivery, or decision-making—anchor their value in workflow efficiency and risk mitigation. System-level enablers, including those aligned with payers or regulators, create opportunities through value-based pricing or health economics integration.

When data is layered across companies with complementary roles, shared value emerges. A behaviour signal captured by one product can increase the predictive power of another. Clinical documentation tools can validate outcomes, enabling pricing strategies elsewhere. This generates intellectual property that is co-developed and commercially viable, whether as evidence packages, digital biomarkers, or treatment augmentation tools. Monetisation becomes repeatable because value is initially structured, not retrofitted after growth.

From an investment perspective, this setup enhances clarity at entry and flexibility at exit. Instead of backing companies that must achieve both scale and scientific credibility independently, investors support a portfolio that delivers both collectively. Returns are generated through traditional exits, IP transfers, carve-outs, licensing deals, or partnerships with life sciences companies. Each tier offers its logic for liquidity, while the whole system compounds long-term strategic value.

This format increases the deployability of digital health for healthcare systems and regulators. Therapeutic verticals that incorporate validated evidence, HCP support, and payer-aligned metrics enable selective adoption without requiring infrastructure overhaul. Governments focused on real-world evidence and value-based care can engage with ecosystems, not isolated pilots. This reduces procurement friction, increases interoperability, and supports sustainable transformation.

What unlocks monetisation is not scale alone—it's precision. Structuring digital health by therapeutic area enables companies to move more quickly toward reimbursement, integration, and real-world use. When innovation follows the logic of clinical pathways and economic value, every stakeholder—startup, funder, regulator, patient—gains more than a product. They gain outcomes that can be measured, priced, and scaled.

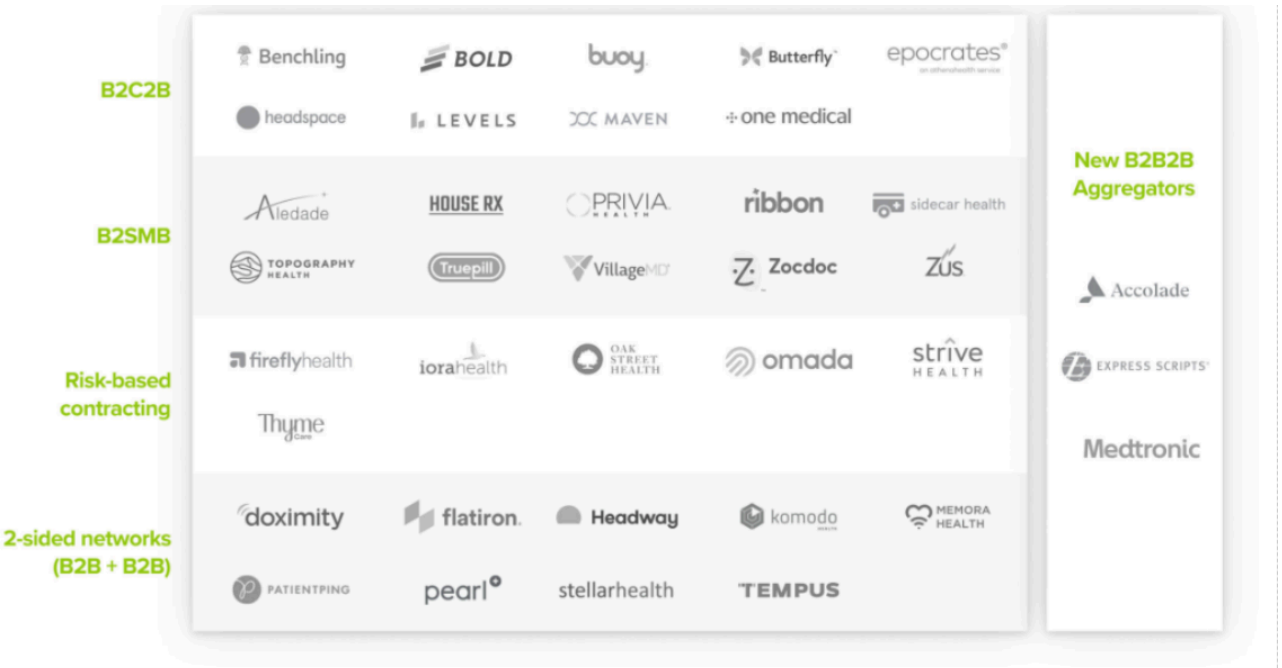

Figure 5. 5 new GTM approaches that are proven to work (Source: CB Insights & Pitchbook)

5. Therapeutic-Area Focus: The Organising Principle for Digital Health

Digital health becomes most effective when organised by therapeutic area rather than purely by function or geography. Organising ventures within a therapeutic vertical—such as fertility, oncology, or metabolic health—creates a natural alignment between science, practice, and commercial value.

When digital ventures align with this architecture, they can integrate into the core mechanics of care. Their evidence is more likely to support real-world adoption. Their products are easier to embed in existing distribution and reimbursement models. Their data gains clinical relevance.

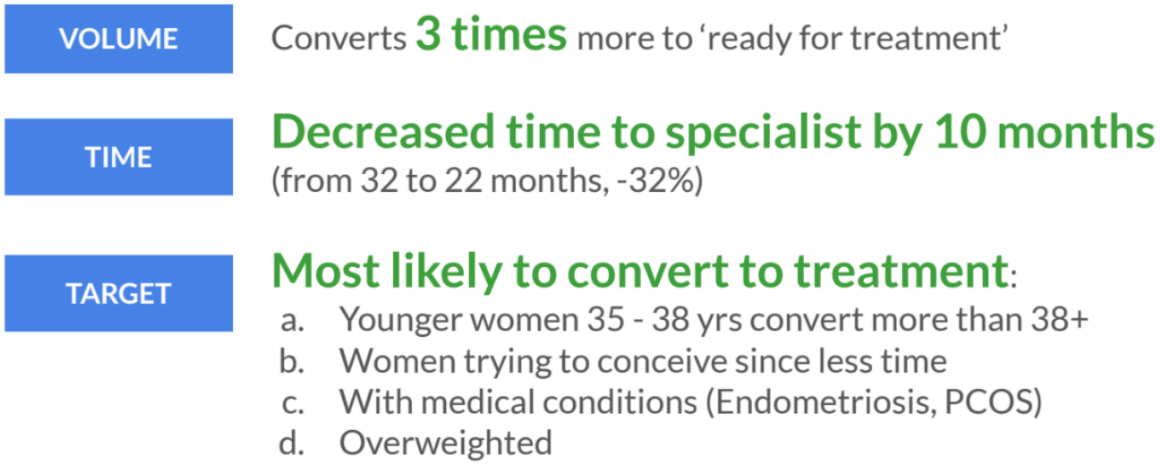

Figure 6. Woom and Ferring partnered to stimulate the market and increase awareness of fertility challenges. The result: more diagnosed patients, and severe patients treated faster, with direct impact on revenues for the company as they are a market leader with sometimesa 60% market share

This lens also simplifies complexity. Functional segmentation—such as "AI in healthcare" or "patient engagement platforms"—often produces portfolios with fragmented impact and disconnected outcomes. While practical for regulatory reasons, geographic segmentation usually overlooks the global nature of clinical practice, particularly among healthcare professionals who share knowledge through international congresses, publications, and

standards. By contrast, therapeutic-area segmentation enables coherence: multiple ventures, each focused on different parts of the stack, contribute to a shared clinical and commercial objective.

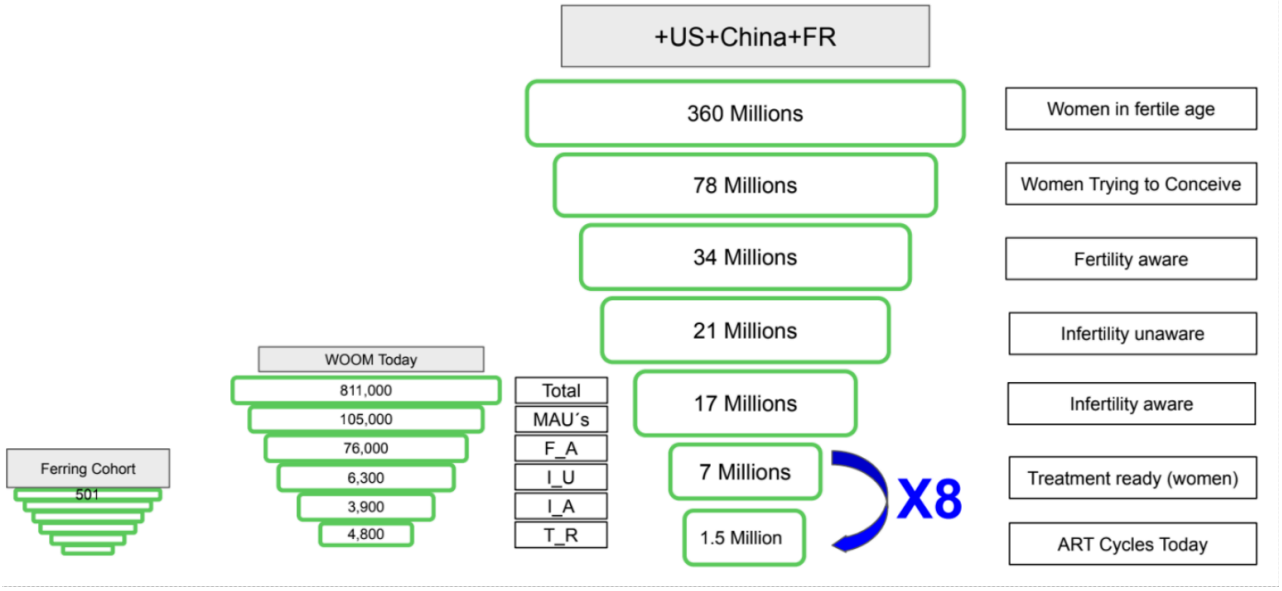

Figure 7. Through this partnership, Woom and Ferring demonstrated the thesis explained earlier. By reducing the risks of startups focused on growth, a market leader can both positively impact the market and generate a positive impact. Market reimbursement models limit the scale.

It also enhances capital efficiency. When ventures share a therapeutic focus, they can benefit from centralised medical advisory boards, unified regulatory strategies, and interoperable data schemas. This reduces redundancy, accelerates learning, and strengthens defensibility. For corporate partners, it enables external innovation to align with internal portfolio logic. For health systems, it creates verticals where digital solutions reinforce each other and respond to pressing population needs.

The therapeutic-area lens reflects a shift in maturity in how digital health is integrated. No longer a generic “health tech” category, it functions as an operating system for precision healthcare, organised by real clinical value. Building around therapeutic areas ensures that innovation connects to the business line, contributes to top-line growth, and supports the science behind improved patient outcomes.

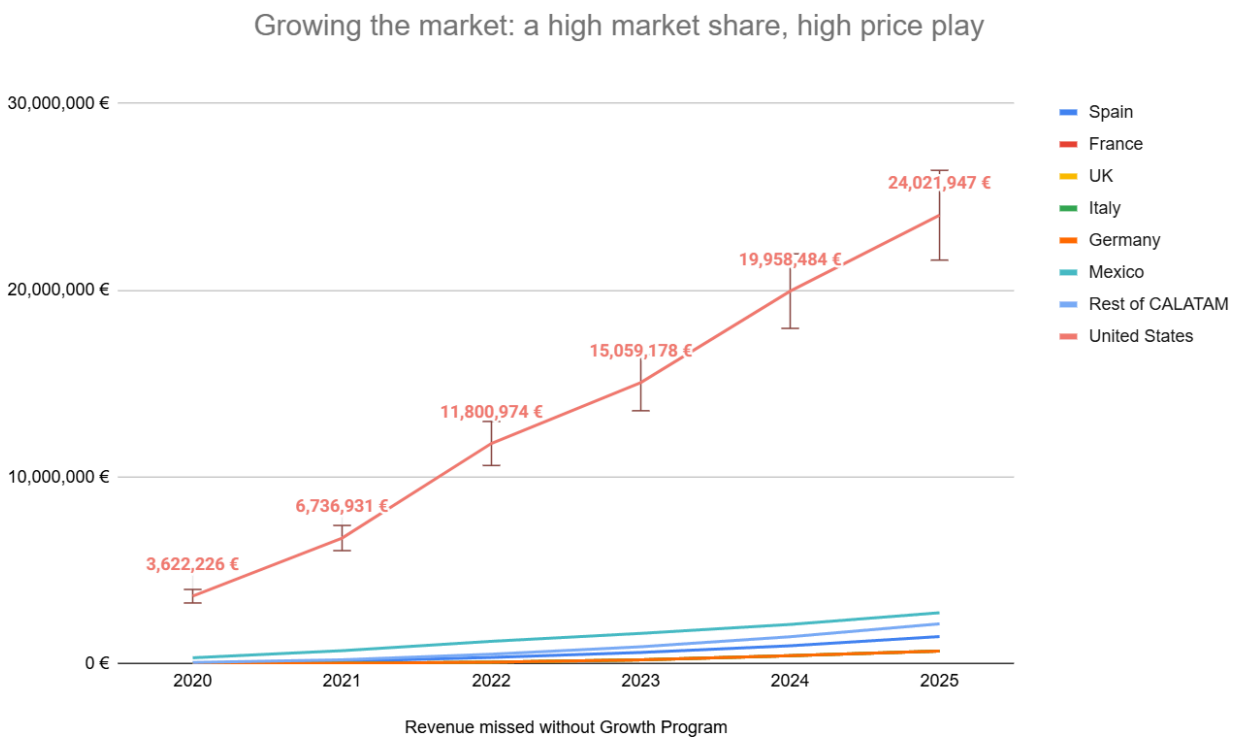

Figure 8. As a data-driven VC, Allegory Capital modelled the impact on growth per TA and region. In this case, with Woom and Ferring, investing in Digital Health can be fruitful for the commercial franchise and the scientific play, but only the US could afford it.

6. Operationalising the Stack: Capital Discipline Through Structure

A vertically integrated portfolio, anchored in a specific clinical space—such as reproductive health, respiratory care, or oncology—creates operational relevance. It allows data, evidence, and stakeholder engagement to compound across ventures. Each company may serve a distinct role (diagnosis, engagement, reimbursement, workflow). Still, together they respond to the same unmet need, participate in the same evidence ecosystem, and build upon each other's momentum.

Execution relies on three enablers:

- **Shared Infrastructure:** Interoperable data standards, common regulatory assets, and centralised compliance frameworks reduce friction. Startups gain acceleration without sacrificing quality or independence. These foundations also reduce cost duplication and increase speed to market.
- **Complementary Business Models:** Ventures are selected or designed to deliver at different price points, sales cycles, and buyer types. A Tier 1 clinical engine may rely on B2B partnerships, while Tier 2 platforms may scale through DTC or affiliate models. These variations create resilience and increase monetisation coverage across the care continuum.
- **Evidence-Oriented Governance**: Strategic priorities are framed around data generation, clinical relevance, and scalability. Ventures contribute to shared KPIs—not only for commercial traction, but also for scientific credibility and regulatory readiness. This ensures alignment with stakeholders and opens exit pathways.

Geographic expansion follows the same logic. While regulation varies, the burden of adapting to new markets is distributed among various stakeholders. Tier 3 and Tier 4 companies often scale across borders more efficiently, especially in domains such as provider workflow or value-based analytics, where healthcare societies and standards transcend national boundaries. Conversely, Tier 1 companies gain regional access through clinical trials or academic partnerships, while Tier 2 ventures adjust for consumer behaviour and language without requiring new regulatory approvals.

This design creates a repeatable design. Ventures specialise and remain lean. The portfolio, however, behaves like a vertical stack—adaptive, defensible, and engineered for clinical and commercial relevance.

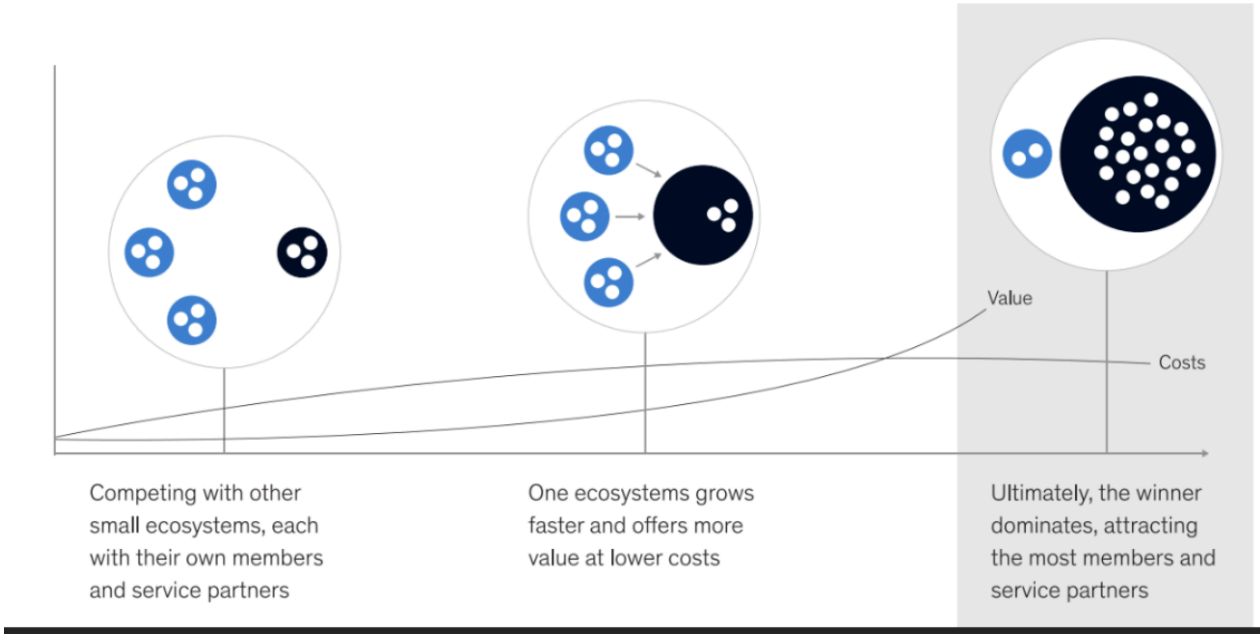

Figure 6. A winner is usually the final model observed by a given TA.

7. From Capital to Impact: Engineering Resilient Systems

Digital health investment has transitioned from a phase of rapid expansion to one that demands capital discipline. In 2021, U.S. digital health startups secured a record $29.1 billion in funding. However, this figure declined to $15.3 billion in 2022 and $10.7 billion in 2023, marking the lowest annual total since 2019[1]. This contraction has recalibrated expectations across limited partners, fund managers, and corporate venture arms.

Internal rate of return (IRR) performance has also diverged. Funds concentrating on single-point solutions, consumer-first apps, or unvalidated AI platforms have encountered extended time-to-revenue, weak buyer logic, and limited exit optionality. Meanwhile, once active in digital health, large acquirers have grown cautious, prioritising integrated systems, therapeutic relevance, and reimbursement-linked value. Exit dynamics have elongated, and mid-stage funding has become selective, compressing the traditional venture cycle.

Scale cannot rely on breakout apps or category leaders alone in this context. Capital efficiency improves when portfolios are framed as clinical systems—focused on a therapeutic area, diversified across functional tiers, and designed to share infrastructure and resources. This approach requires the industry player leaders in their TAs to act in digital health, not for show, but for structural change. Like Visa or Mastercard shaped the finance industry with clear roles and responsibilities, building for good or bad a duopoly, it has helped a generation of fintech companies to disrupt the way we share money. Yet, we still struggle to share our patient data for a second opinion.

Early tiers generate measurable revenues through B2C onboarding, professional SaaS, or ecosystem services. Mid-to-late tiers build scientific evidence, real-world data, or algorithmic IP that supports regulatory partnerships or medical distribution—valuation compounds not through isolated traction, but through the interaction of ventures within a defined clinical architecture.

This model unlocks differentiated return logic for each stakeholder:

- ➔ **Startups** can reduce capital burn and reach the market faster by leveraging shared compliance assets, go-to-market architecture, or referral systems.
- ➔ **Corporate partners** engage earlier through co-development and evidence frameworks aligned with their product lifecycle and geographic footprint.
- ➔ **Investors** secure multiple monetisation paths, including royalties, asset-light exits, and shared algorithms or data product licensing.
- ➔ **Policy-aligned buyers** gain access to real-world evidence generation, which supports value-based care reimbursement, public health mandates, and pharmacy protection strategies.

Therapeutic area portfolios also unlock exit scenarios across different value chain layers. Consumer-centric ventures in Tier 2 attract platform acquirers or strategic media and health integrations. Tier 3 workflow enablers align with electronic medical record vendors or hospital systems. Tier 1 clinical engines and Tier 4 value enablers generate interest from pharmaceutical firms, insurers, or private equity funds.

Portfolio architecture delivers resilience. It creates exit diversity, reduces reliance on late-stage financing, and positions each venture to contribute to a repeatable system. This does not require overcapitalization. It involves alignment between clinical impact, regulatory readiness, monetisation logic, and buyer behaviour. Capital becomes a multiplier.

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The Allegory Portfolio Thesis in Action

Digital health is now at a pivotal moment. The early promise of consumer-scale adoption and AI-driven disruption has collided with the complex demands of regulated markets, reimbursement logic, and clinical credibility. In response, a new investment model is emerging—one designed not around singular breakout companies but around therapeutic ecosystems engineered for coordination, validation, and expansion.

The Allegory Thesis delivers this model through a portfolio architecture divided by therapeutic area. Rather than asking any startup to master the entire value chain, this approach aligns complementary companies, each focused on a precise layer of the clinical and commercial stack. Tier 1 ventures generate validated outcomes. Tier 2 builds user interfaces and behavioural signals. Tier 3 enables healthcare professionals in real time. Tier 4 integrates with systems, payers, and the public health system. Together, they form modular, clinically aligned systems ready to scale.

This translates directly into investment resilience. Funding environments in the U.S., Europe, and China vary significantly, each with different tolerances for CAPEX, regulatory friction, and time-to-revenue. A layered, portfolio-driven model absorbs these variations. It allows for early monetisation through B2C or B2B2C models, while preserving the clinical integrity required for late-stage industry engagement and exit. Capital is applied precisely, and IRR is supported by multiple monetisation and acquisition pathways within the same therapeutic scope.

The same model aligns with shifting government priorities. As real-world evidence and value-based care become conditions for market access, therapeutic-area portfolios offer the most straightforward path to generating defensible data across patient populations. This creates opportunities for strategic distribution, reimbursement protection, and lifecycle extension—whether by pairing a molecule with a validated digital adherence module or co-developing clinical algorithms that drive adoption.

The benefits are practical and immediate for startups. Shared compliance assets, regulatory, and coordinated GTM architecture

reduce burn and accelerate market access. Each venture remains focused and independent while drawing strength from the surrounding system.

This framework provides more than access for strategic partners—it offers alignment. Companies looking to embed data-driven services into their core franchises gain a way to evaluate, integrate, and scale innovation across multiple markets and product lines. The therapeutic-area lens connects innovation to impact on revenue, outcomes, and system performance.

This replaces fragmentation with strategy. It connects venture creation with industry adoption, aligns funding logic with regulatory rhythm, and transforms isolated solutions into healthcare systems. The next decade of digital health will not be built app by app—it will be built system by system. And the systems that succeed will be those designed from the start to operate as intelligent, clinical, and capital-efficient ecosystems.

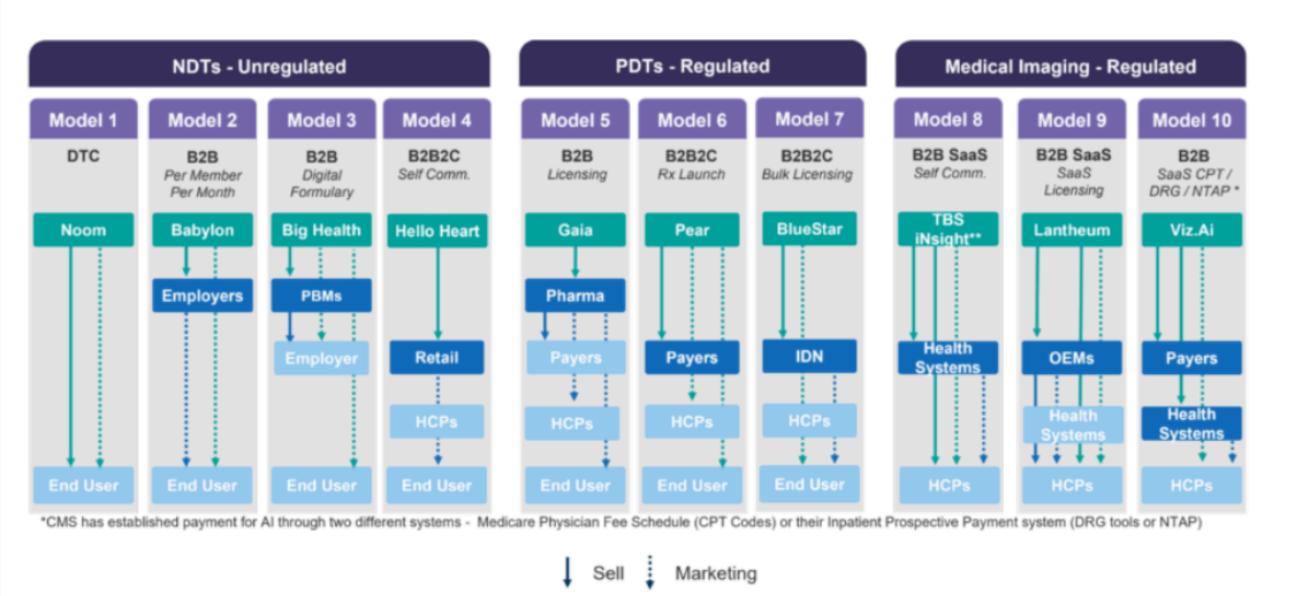

Figure 7. Identify the transfer of values at different scales of the product

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