

From pilot to scale

How to make digital health stick

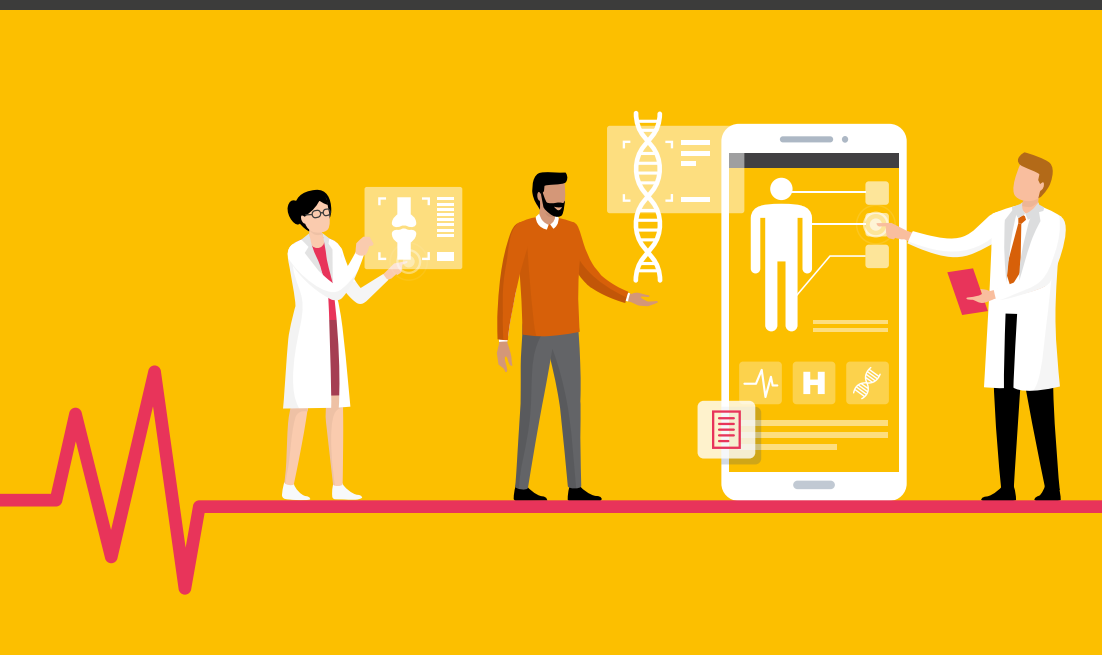


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Executive summary

In recent years, the range and number of digital health solutions entering the market has grown rapidly, a trend that has only accelerated due to the COVID-19 pandemic. As patients and care teams are increasingly likely to adopt digital health solutions, investors are also committing considerable funds to new entrants in the field. Digital health solutions are not only becoming powerful tools when used as standalone offerings, but also offer clear differentiation when combined with traditional pharma and medtech assets. So, while all the demand signals are strong and many businesses seek to launch innovative digital offerings, many pharma, medtech and startup companies find that their promising ideas are obstinately stuck in proof of concept or pilot phases. This is especially true for traditional business and well-established organisations, where expanding pilots into production at scale remains the exception rather than the rule.

So, while each novel digital health solution has its own characteristics and therapeutic focus, all face similar challenges when it comes to succeeding at scale. In some cases, the technology is not ready or patients aren't yet willing to accept new ways to monitor or address their health needs. Other initiatives fail to gain traction in the face of traditional corporate environments and processes, while some promising ideas are insufficiently integrated with the entire care pathway or reimbursement models aren't yet established to secure predictable revenues.

Our experience suggests that to overcome the challenges they face, pharma and medtech businesses need to think differently about their digital strategies and implementation efforts. In this first article, we build on a range of interviews with digital health stakeholders to explore three of those crucial steps that are likely to be pivotal to the successful scaling of a new digital product or service:

- **Move from standalone digital health solutions to an ecosystem approach.**

An ecosystem approach helps digital health players to provide a service offering that combines digital solutions with a wide range of other tools and services, including wearables, medical devices, drugs or even other digital solutions. There are several key benefits to this approach. First and foremost, it enables a differentiated value proposition aimed at specific patient needs that can help integrate any digital solutions into daily routines. Ecosystems can also be scaled and extended to other customers beyond the patient.



In addition, (and providing all the necessary security, privacy and consents are in place) ecosystems are potentially invaluable sources of patient data that can be harnessed to provide deep and actionable insights into behaviour. These insights can fuel the development and improvement of features, sharpen commercial campaigns and feed into R&D.

- **Empower markets and set up for success.**

Digital health solutions will succeed or fail according to their success in engaging users and driving adoption. Empowering markets to make that happen is therefore critical. It's essential to achieve the right balance between global development and local implementation, ensuring that local customer-facing teams have clear plans and the right level of resources for supporting launches in their territories.

- **Prepare the back end.**

Launching at scale requires companies to change their operating model. Automated business processes supported by a robust IT platform or infrastructure are must-have components for the operating model to work at scale and sustain digital solutions in the market.

Each of these three areas are essential to develop, launch and operate successful digital health solutions at scale. Pharma and medtech businesses need to ensure they understand the role that each plays individually, as well as how they combine to create the best possible prospects for scaling a digital health solution. In this paper, we explore in detail how companies should address each of these three areas, drawing on our industry experience to highlight the critical success factors.

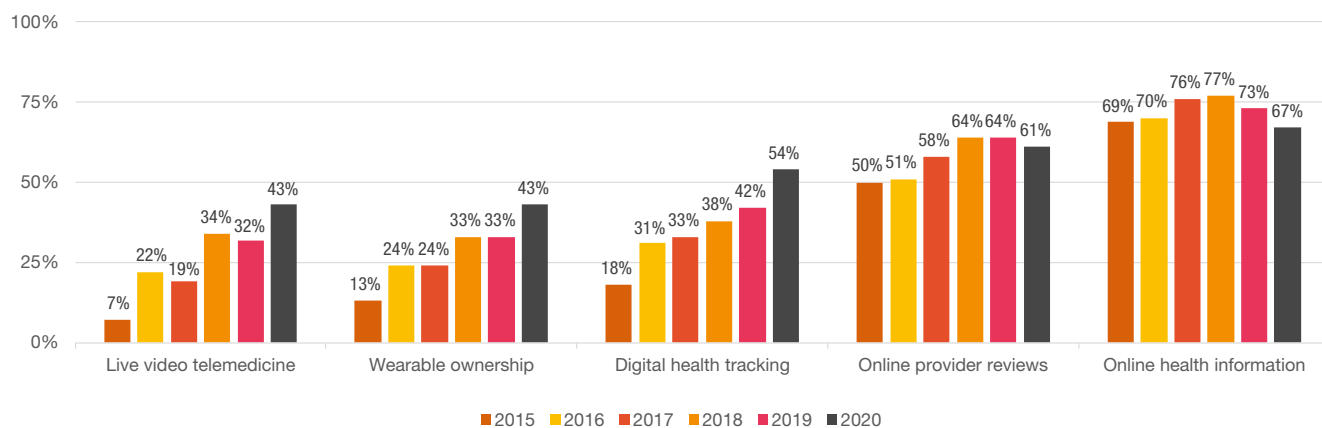


Introduction

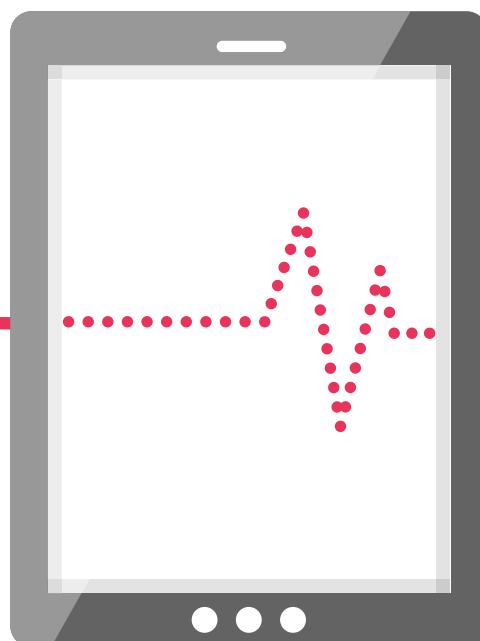
Since the start of the COVID-19 pandemic, digital health has boomed. As much of the world entered lockdowns from March 2020, the range of digital solutions expanded rapidly as patients and their healthcare professionals looked to avoid in-person consultations. Now, virtual appointments with doctors, remote monitoring devices and digitally-provided personal coaching services are all part of the new normal in healthcare.

Many of these digital solutions and services were already available in the market. But the shifts in behaviour that COVID forced have accelerated their adoption. As figure 1 below illustrates, the use of digital solutions such as telemedicine, remote monitoring and patient disease management has grown since the start of the pandemic in early 2020.

Figure 1: Overall adoption of digital health tools from a survey of 4000 consumers (source: Rockhealth)¹



Teladoc saw a 50% week-on-week increase in the use of its services in the US during 2020.



¹ Digital Health Consumer Adoption Report 2020. www.rockhealth.com/insights/digital-health-consumer-adoption-report-2020



Significant market growth

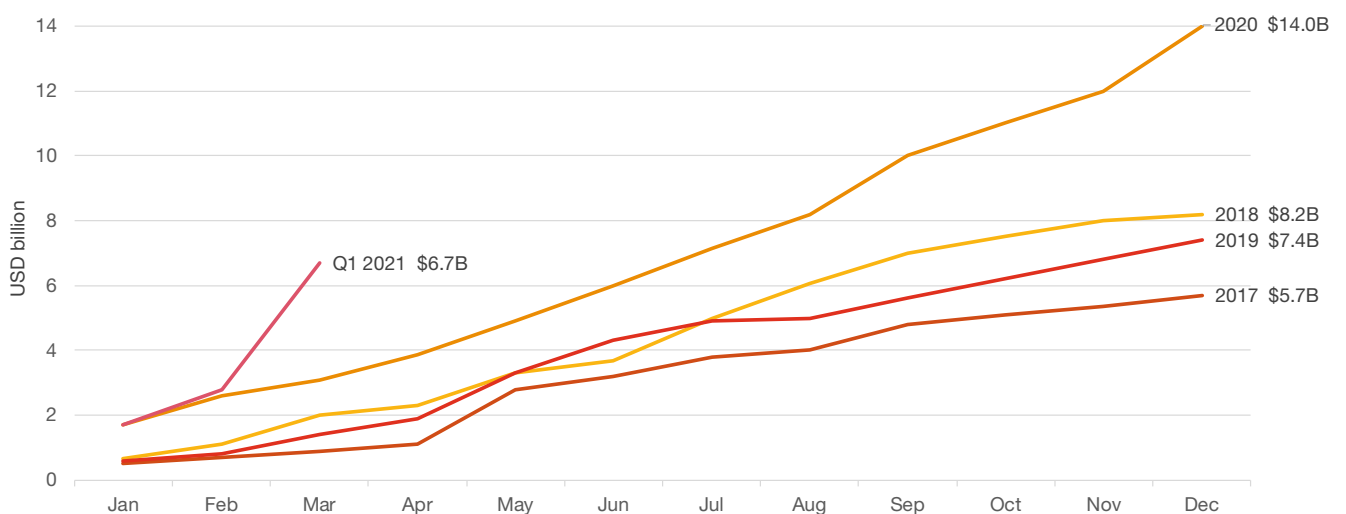
There are plenty of successful innovations that have seen substantial growth as a result of the pandemic. One of the major leaders in the telemedicine space, Teladoc, saw a 50% week-on-week increase in the use of its services in the US during 2020.² Another, Doctor on Demand, offers differentiated services that enable patients to tag doctors in their favourites, as well as integrate with laboratory tests. The service saw 139% growth in patient appointments³ during 2020. Overall, the global market for remote patient monitoring is expected to grow by 18% over the next five years, exceeding \$645 million by 2025.⁴

Other examples of health innovations that have become prominent during COVID include LifeSignals that increased

production of its wireless medical biosensors to monitor COVID patients outside hospital settings. Another is digital therapeutics company Akili. It uses tablets and smartphones to provide a video-gaming experience to help children with cognitive disabilities. Akili is now investigating how that approach could alleviate the inability to concentrate, from which many long COVID-19 patients suffer.

In line with these developments, investments in digital health have significantly increased since the start of the pandemic, with a steady growth in the number of major IPOs and high-value deals demonstrating the attractiveness of this market (see figure 2 below).

Figure 2: Rising digital health funding (source: Rockhealth)⁵



² Teladoc March 2020 press release. <https://ir.teladochealth.com/news-and-events/investor-news/press-release-details/2020/Teladoc-Health-Sees-Daily-Virtual-Medical-Visits-Up-50-in-Past-Week/default.aspx>

³ Forbes article July 2020. www.forbes.com/sites/leahrosenbaum/2020/07/08/exclusive-telemedicine-company-doctor-on-demand-raises-75-million-to-expand-during-the-covid-19-pandemic

⁴ GlobalData December 2020. www.globaldata.com/remoted-patient-monitoring-market-set-surpass-645m-2025-covid-19-pandemic-drives-growth

⁵ Rockhealth Q1 2021 funding report: Digital health is all grown up. www.rockhealth.com/insights/q1-2021-funding-report-digital-health-is-all-grown-up

A growing and increasingly crowded market

Despite the momentum created by the pandemic and the rise in digital health investments, many pharma and medtech business are struggling to move digital health solutions beyond the pilot stage. In fact, 64% of those digital health stakeholders interviewed thought only 0-20% of their digital solution had scaled from the pilot phase. We believe that there are a number of barriers to scale:

The technology isn't ready

When tested in a clinical setting, new solutions are sometimes less effective than existing ones and patients' and prescribers' high expectations aren't met. This was the case for the Glucose Monitoring Lens jointly developed by Novartis and Google. The project, which began in 2014, aimed to develop a contact lens that could measure glucose levels for individuals with diabetes. However, clinical trials revealed that the technology wasn't accurate enough to obtain reliable tear glucose readings to support the requirement of a medical device.

Right technology, wrong patient group

In some cases it's the patients that don't accept the technology. A solution's user-friendliness is a crucial consideration and understanding patients' sensitivities is critical to drive adoption – especially when a change in behaviour is required. For example, the launch of a digital pill (Abilify Mycite by Proteus and Ostuka) was met with resistance generated by consumers' concerns about swallowing a sensor.

Right solutions, wrong corporate environment

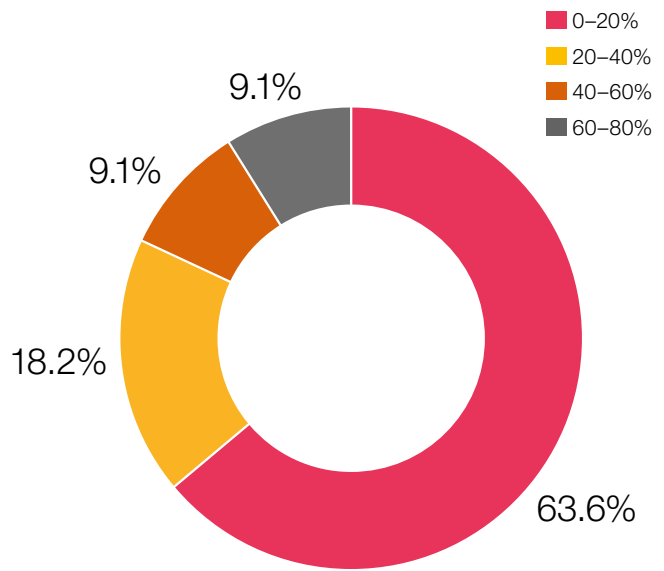
Some very promising solutions have failed to make it in the face of established pharma operating procedures, processes and business models. So, while some major pharma and life sciences businesses have tried to establish digital incubators to launch new digital solutions, these have often failed to deliver. The systems, processes and mindset of a digital health organisation often prove to be incompatible with the traditional corporate world.

Lack of integration in care pathways

Making sure that a technology works with other patient/payer processes is essential. For example, a home diagnostic technology may provide excellent results, but lacks the ability to integrate data with chronic condition management tools and reimbursement policies.

In addition to the common barriers above, there are other factors blocking the production and adoption of digital health solutions at scale. One key obstacle is the lack of reimbursement models. This arises from the fact that payers have limited experience of digital solutions.

Figure 3: Percentage of digital solutions that have scaled up within the entire digital solution portfolio and is not part of a pilot anymore



Source: Interview with 12 digital health experts across the LifeScience space in Q2 2021



As a result, pharma and medtech companies are deploying high-cost digital solutions without the security that these will be reimbursed by any healthcare payer. This was further backed up by our interviews where 100% of our respondents didn't see their digital solutions as profitable.

Success at scale

Some companies have achieved successful solutions at scale and established themselves long-term by pursuing disruptive and patient-driven approaches. For example, Telavongo (an initiative between Teladoc and Livongo) has achieved a scalable business model. It's established the largest virtual care company in the world that integrates virtual visits, remote patient monitoring, chatbots, algorithms and analytics to provide an end-to-end offering for patients and doctors. By making use of Teladoc's footprint in 175 countries, the new company will be able to quickly scale the capabilities brought by Livongo. 23andMe has expanded its genetic testing capabilities around the globe, aiming to reflect as much of global human diversity as possible.

Hims & Hers is a multi-specialty telehealth platform that connects consumers to licensed healthcare professionals, enabling them to access high-quality medical care for numerous conditions. As well as providing traditional healthcare services, the company also provides more holistic wellness services such as access to mental health support groups and connecting customers to information about their health and wellness needs.

What these businesses have solved is the key question of how to move successfully from pilot stage to scale solutions. As they achieve scale, they generate returns that can be reinvested in new digital health solutions. That creates value for pharma and medtech companies, and for patients who gain a wider choice of digital solutions. In the next sections, we'll examine the key strategic considerations that businesses need to address as they seek to move to digital solutions at scale.



Case study

PwC recently worked with a global pharmaceutical company to develop a business case for a digital solution in oncology. Our approach built scalability into the methodology, with multiple pilots across markets and drug types to ensure insights could be applied across the whole portfolio. Involving drug and market teams in the business case development ensured the product would fit the unique needs of their drug, market and patients. We identified vendors whose skills could deliver value to specific parts of the programme. Overall, the holistic case we developed establishes the project to grow organically and meet the varied demands of different products and markets.



How to move from pilot to scale



There can be any number of reasons why promising ideas aren't able to achieve success at scale. But our work in the sector suggests all successful digital health solutions share some common factors. Below, we highlight three key areas where companies need to focus in order to maximise their chances of success.

Moving from standalone solutions to an ecosystem approach

Our work with various pharma and medtech clients highlights the strategic importance of new digital health solutions as a key differentiator in a highly-competitive market. For example, we've seen pharma companies creating brand-agnostic apps with the aim of building a reputation for patient-centricity. In other cases, companies are combining a drug with a new patient app seeking to provide a differentiated patient experience. Efforts like these are encouraging, and demonstrate the desire to offer patients distinctive new services and experiences. But they aren't yet truly moving the needle to achieve long-term scale. To do that requires an understanding of the value that digital solutions can bring to a whole existing portfolio. Achieving that goal requires an ecosystem approach.

Building an ecosystem for scale

In our experience, establishing a scalable ecosystem requires taking into account a few key considerations, as detailed below.

Laser focus

It's recommended to initially define the ecosystem for one specific therapeutic area. Focus is important, even at scale. But once that single therapeutic area is managed well, it's possible to extend it to another. The ecosystem has to act as the single destination for all digital solutions already in play, as well as those in the pipeline. Assessing which assets – e.g. digital solutions, wearables, services, therapies – are relevant to the specific therapeutic area is crucial. A higher number of assets in the ecosystem makes it possible to offer each patient more tailored value.

It's also important to map out the assets that are intended to be in the ecosystem against the patient pathway. This can help to identify any gaps in a solution and plug them to create an end-to-end offering that creates the maximum patient value. If the ability to plug gaps isn't available 'in-house', consider partnerships and open innovation approaches.

Think scale upfront

The ability to scale has to be an early consideration for ecosystem design and capacity planning. Too often, pilots take a narrow approach that doesn't take into account the likely complexities of expanding across markets or disease types. Limited understanding of which promising markets to pilot in to reach scale quickly will obstruct a clear path forward. Ensuring that at least two different markets are in scope for the pilot will ensure that not only are the right decisions taken to make the pilot a success, but also what a future solution will require (e.g. data collection and storage, commercial model approach, user flow, integration with care pathways – including EMR/EHR interoperability) are taken into account.

Think ahead regarding your data storage and processing needs in order to select the right ecosystem or infrastructure model. The data requirements for a pilot are unlikely to be the same as for a solution at scale. Having the right capacity to accommodate rapid expansion of users is essential.

A siloed approach focussed on a specific business need and not on an end-to-end approach was ranked as the top barrier to scale of digital solutions in our survey.

Take a modular approach

An ecosystem approach helps digital health players to provide a service offering that combines digital solutions with a wide range of other tools and services, including a wearable, a medical device, a drug or even another digital health solution. One good example of this is in the treatment of diabetes. In this space, Livongo provides modular programmes to diabetes patients for personalised and integrated disease management. It leverages mobile apps with medical devices such as continuous blood-glucose monitoring, together with on-demand doctor scheduling and real-time coaching.



82% of digital health stakeholders interviewed ranked 'gathering better insights and data on the patient journey' as a reason to pursue digital health solutions.

There are several key benefits to this approach. First and foremost, it provides a differentiated value proposition aimed at specific patient needs that can help integrate any digital solutions into daily routines. The ecosystem can also be scaled and extended to other customers beyond the patient. That might mean a caregiver or healthcare professional (HCP), but could also include payers, especially as digital solutions can be connected to target several customers simultaneously.

Bring a cross-functional team together

Excessive focus on a long-term vision can lead to a solution in search of a problem, while focusing too heavily on short or mid-term needs can result in a solution that isn't fit for purpose in the long term, or is insufficiently ambitious to gather momentum to scale.

To achieve this balance requires a cross-functional project team with senior support and funding for an ambitious solution that aligns to the company's strategic direction. This needs to be balanced with team members who possess

deep understanding of patient needs and HCPs' requirements, along with asset teams that understand, for example, side effects that may limit the duration of therapy; the need for seamless integration into HCP workflows or patients requiring holistic support beyond their therapy.

Be clear about data collection

Providing all the necessary security, privacy and consents are in place, ecosystems are an invaluable source of patient data. These can be harnessed to provide deep and actionable insights into behaviour that can, in turn, fuel the development and improvement of features, sharpen commercial campaigns and feed into R&D. Being clear about which data points to collect will be key. Usually, we recommend going beyond simple usage metrics, as these will provide little information about how users behave when using the solution or what outcomes are achieved. But data about the user experience of the solution is essential to enhance and improve content and features, and inform further upgrades of the app and capture future needs.

Top down or bottom up – the opportunity of empowering local teams

Digital health solutions will succeed or fail according to their success in engaging users and driving adoption. Empowering markets to make that happen is therefore critical.

Developing and deploying digital solutions can be achieved relatively quickly, especially when taking an MVP (minimum viable product) approach. However, positioning them to HCPs can prove to be a challenge for customer-facing teams. Through the work we've carried out with pharma and medtech clients, we often see a gap between the digital solution development at a global level and subsequent launches in key markets. Below are some of the lessons we've learned and the recommendations that flow from them.

Clear roles for global and local teams

Clarity of roles and responsibilities between global and local teams is vital. To enable scale, we believe that digital solution design, development and deployment (i.e. defining the launch plan at scale) should be owned and orchestrated by a global team. At best, a global launch team should be appointed once the digital solution is technically ready so that the optimal level of launch support can be provided to markets. The local team would therefore be responsible for securing resources to launch the digital solution locally while driving local promotional activities. Ideally, at least one local resource should be dedicated to the digital solution for a successful launch and overseeing maintenance activities.

Funding the digital solution design, development and deployment should all be driven by the global team. Achieving scale can only be driven by a strong push from the centre of the organisation.

Guide and incentivise local teams

To maximise the chances of a successful launch, provide local teams with a detailed playbook. This should cover the resources and budget required for the launch, what a local launch plan typically contains and information about engaging key internal and external stakeholders.

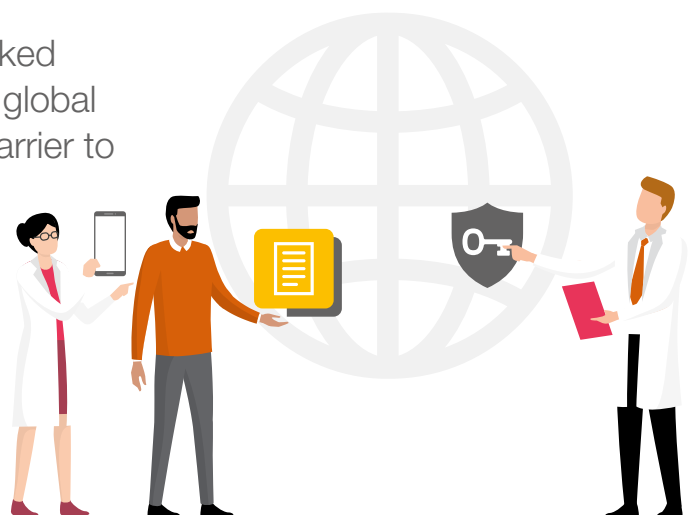
It's also important to think beyond the launch, and provide guidance about activities to maintain the solution, localisation of digital content and continuous sales activities. These are often overlooked, and that can result in low market adoption of the digital solution.

Incentivising customer-facing teams to promote the digital solution locally is also important. KPIs for the digital solution should be defined in terms of value generated for customers and the degree of their satisfaction. Crucially, these KPIs should be discrete from traditional sales targets so that countries don't have to make a trade-off between selling legacy products or digital solutions.

Generic global commercial models can help provide options for how a digital solution could be positioned to customers. This would mean defining how the digital solution could be sold to customers in combination with a core offering from the company, for example a medical device or a drug. Ensure that customer-facing teams receive training together with those predefined global commercial models, so that they are empowered to have the right conversations.

Unclear value proposition for digital solutions was ranked as the third biggest barrier to scaling digital solutions in our survey of digital health stakeholders.

46% of our respondents ranked misalignment between global and local teams as a barrier to scale digital solutions.





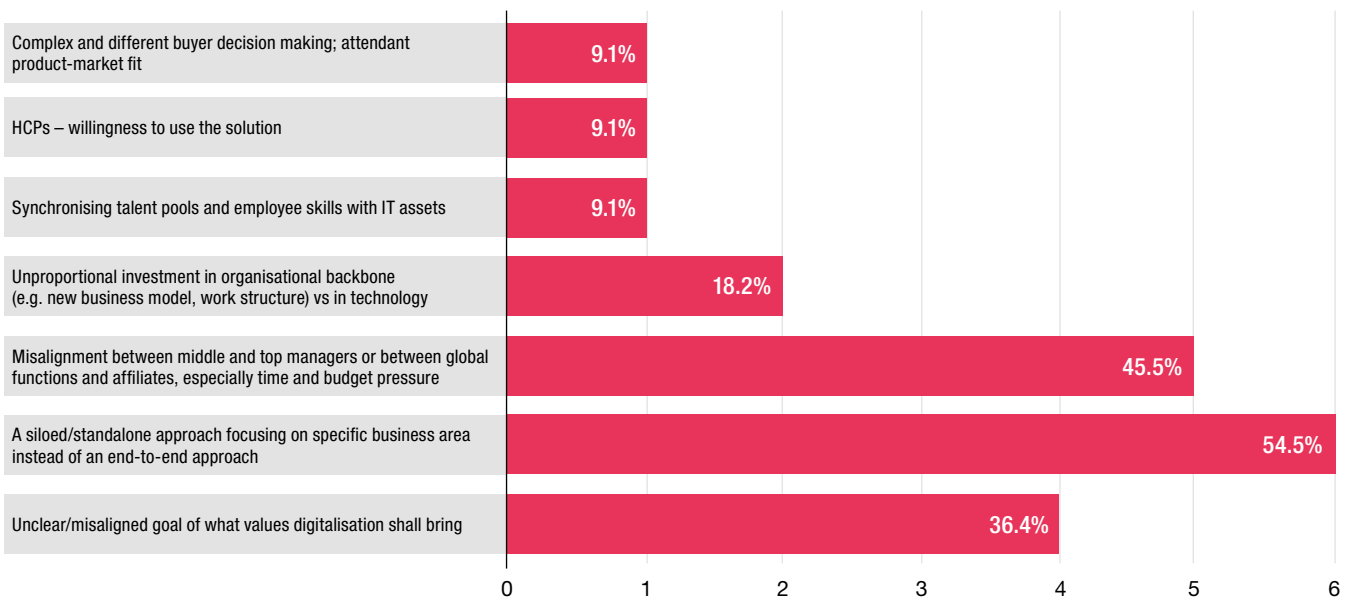
“Digital solutions should be linked with KPIs that are tied to customer value beyond revenue.”

Manuel Puig, Global Head of Digital Solutions & Ecosystem at Roche Diabetes Care

Find the right markets

Another driver to ensure pilots don't lose momentum is to identify suitable markets for them. A diverse range of markets should be selected, depending on the goal of the pilot. For instance, a market – e.g. Israel or Sweden – known to be receptive to digital assets will provide insights about user uptake, user flows and shape the solution itself. However, it's also important to demonstrate the feasibility of the solution in markets of a similar size, such as Germany, the USA or Japan.

Figure 4: What are the top 3 barriers that prevent digital services/solutions from scaling up in your company/in the healthcare industry?



No impactful front end without a well prepared back-end

Launching at scale requires companies to change their operating model. In pilot mode, manual workarounds are feasible, as it's relatively easy to plan capacity owing to the limited adoption of the solution. However, once digital solutions are launched at scale, these workarounds are no longer practicable – performing them will massively increase the resources required. As a result, automated business processes supported by a robust IT platform or infrastructure are must-have components for the operating model to work at scale and sustain digital solutions in the market. Our recent project experiences suggest that the following are all critical considerations.

API-powered flexible architecture

Assuming that a digital solution is connecting several modules in order to offer a tailored value proposition for patients, a flexible IT architecture will be required with the use of APIs instead of point-to-point interfaces. This will enable the solution to offer open connectivity that enables the inclusion of further modules onto the solution, whether from internal development, external partnerships or even from the competition.

Partner to build a cloud solution

Establish the digital solution architecture in partnership with a third-party provider for the cloud-based solution. Self-building a cloud platform is time consuming, and often requires external resources as a result of in-house skills scarcity. A third-party provider offers the full range of services for a cloud-based platform, platform design and deployment through the compliance fulfilment of GDPR and HIPAA regulations.

Review business processes and automate where possible

Review existing business processes to spot where workarounds are, and work with an IT architect to enable automation as much as possible. Launching digital solutions can have an impact in many different areas and it's important to understand which business processes and systems to review. Some of these will not be immediately obvious, for example supply chain requirements for the inventory of digital solutions. Starting with the order-to-cash process helps to identify the main changes upfront and link them with supporting sub-business processes. Automating legacy systems is often challenging, so it's important to identify required changes early in the pilot phase.

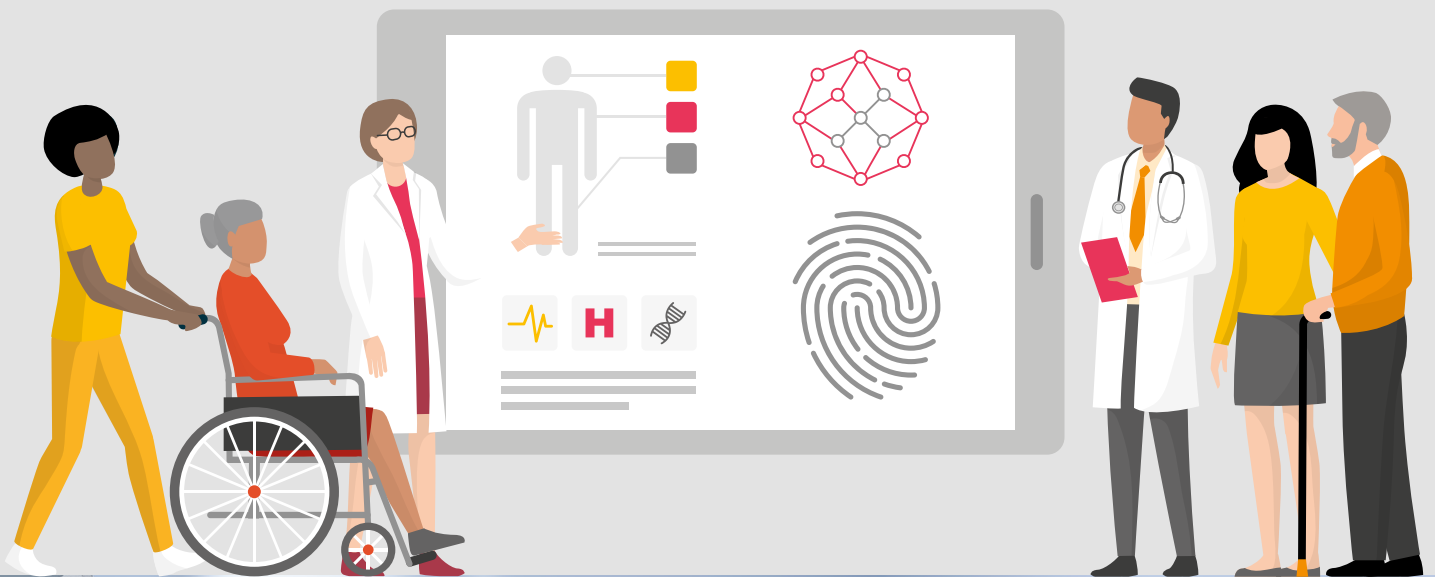
Test before scaling

Involving pilot countries in testing enables changes in the back-end to ensure technical readiness before scaling. Avoiding excessive post-scale phase changes is advisable, as these will require more resources and time to adjust later on. Consider working with pilot countries to run user acceptance testing of back-end changes before the scaling phase.

Ensure the digital solution can integrate with the right part of the care pathway e.g. a hospital's workflow, so that customers have a seamless experience. A smooth integration within the customer's workflow will increase the adoption of the digital solution as well as help the company to continue iterating on the solution together with its customers, and therefore continue to develop the product.

“Integrating the solution with hospitals is crucial to help the co-creation with customers and deliver a product that is fit for purpose.”

Michael Coffey, Global Enterprise Data Leader, Data Solutions at Dexcom





Conclusion

The fast-growing demand for digital health solutions accelerated by the experience of the pandemic has created new possibilities for pharma and medtech companies. But to take advantage, businesses must think beyond the initial stages of innovation and factor in scaling from the start. That means paying close attention to three key areas: moving from standalone to ecosystem approach; empowering markets and preparing the back-end.

- The most successful digital health solutions are part of an ecosystem that focuses on value across a portfolio rather than a single device or service. Ecosystems enable integrated services and experiences that meet the needs of many different patients.
- Digital health solutions, however innovative, will only prosper if they find favour with users. To achieve that requires a balance between global solution development and its successful launch in local markets. Clarity of respective roles is key, as is the collection of data that can be used to enhance product features and drive adoption.
- Scaled solutions must be supported by effective back-end processes and technology. Flexible API-based architectures, the right cloud platform and automation are all important to enable effective operations at scale.

Our experience also suggests a number of other lessons that companies should absorb as they plan their digital health solutions. Co-creating with customers, both HCPs and patients, is essential to glean insights into market needs. Learning from existing digital health players is also recommended, as is early engagement with markets during solution development to ensure that specific environments, challenges and requirements are all taken into account. Understanding these in detail can help manage expectations about a solution's feasibility and commercial potential.

Having a value proposition that provides a clear benefit to patients, HCPs and the organisation, as well as the impact on investments and returns, is vital to secure leadership engagement. With leadership engaged, it's essential to prepare a rigorous plan for commercialisation, with clarity about both the data required to drive adoption by patients and HCPs, as well as for pricing and reimbursement.



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