



Assessing Digital Maturity: The DigiM™ Digital Maturity Model for Health Systems

Damo Consulting's DigiM™ Maturity Assessment has transformed how health system leaders view their progress with digital transformation. The assessment framework has guided health system leaders in prioritizing their investments based on a structured and objective benchmark of their progress against their peer group systems. This paper describes the DigiM™ Maturity Assessment Model and presents the assessment data for leading health systems. Health system leaders and their technology providers can gather valuable insights on the current state of digital maturity to guide their product development and program implementation priorities.

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Digital transformation in healthcare is no longer a choice but a necessity. DigiM™ maturity model helps you to assess where you are in your road towards transformation

Introduction

One of the key drivers of digital transformation is patients' expectations of online experiences at various engagement touchpoints in accessing and receiving healthcare services. Success with digital health programs requires patients, physicians, and caregivers to interact with each other at multiple online touchpoints facilitated by digital technology. It also involves transforming the IT infrastructure and investing in robust data management and advanced analytics capabilities.

The shift to virtual care models has also forced healthcare enterprises to review their organizational models to drive healthcare digital transformation in the post-COVID-19 era. Digital health is an IT-enabled capability; however, it is not necessarily IT-led. Digital transformation requires a

deep appreciation of consumer experience journeys, cross-functional collaboration to enable seamless workflows, and robust technology architecture to implement digital roadmaps and priorities. Healthcare enterprises are at varying levels of maturity today in their digital transformation journeys.

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The DigiM™ Model for Digital Maturity in Health Systems

Damo Consulting's DigiM™ Digital Maturity Model is a framework that describes the different stages of digital maturity in the specific context of health systems. The framework is supported by an online evaluation tool that scores individual health systems' digital programs and provides benchmarks to drive incremental investments and roadmap execution priorities.

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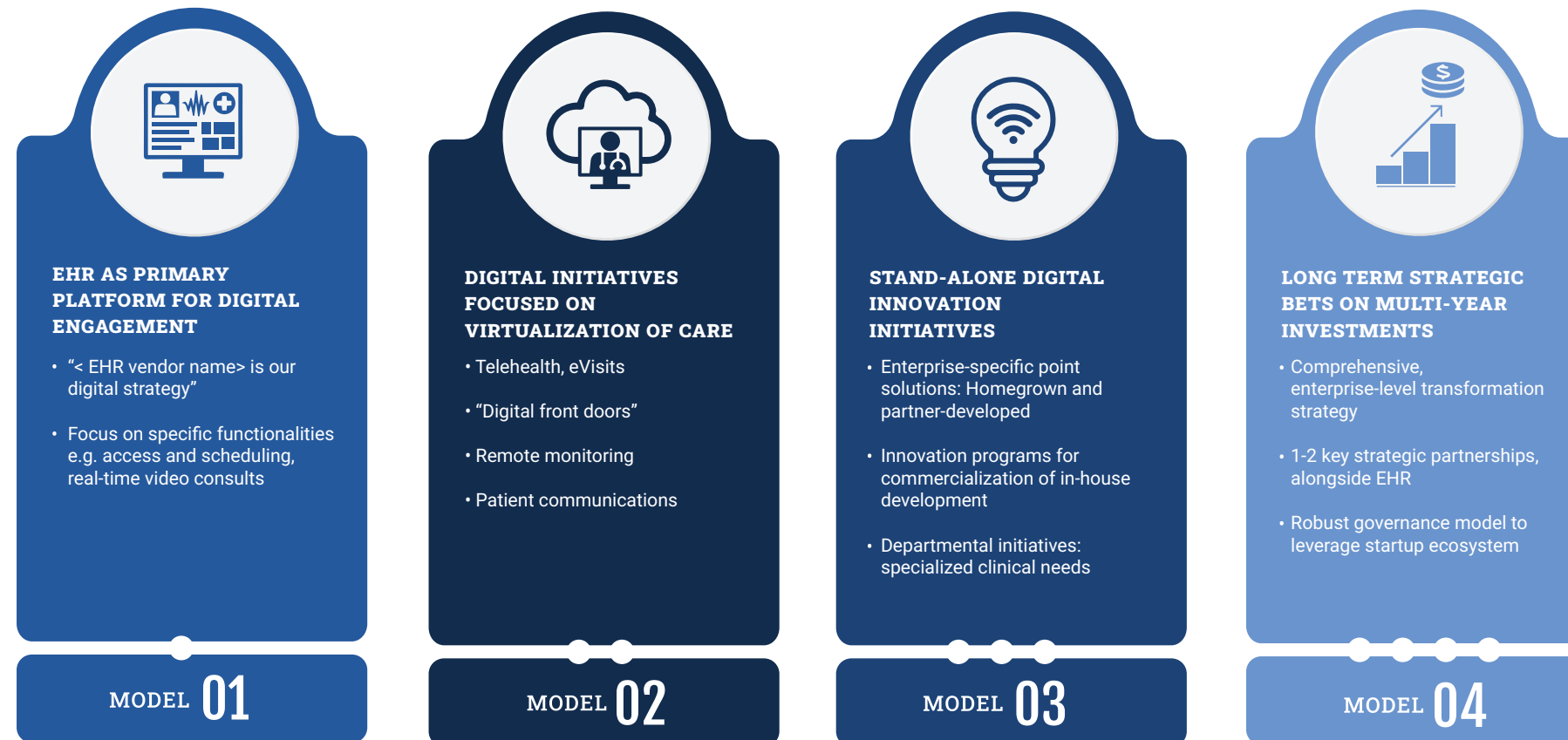


Figure 1: DigiM™ Digital Maturity Model for Health Systems

The DigiM™ framework is also a useful guide for health IT and digital health technology firms to segment their target markets and identify their target customers. The demand environment for healthcare services now favors "digital-first" enterprises. Based on the digital maturity scores and benchmarking analysis of the leading providers, health systems and their technology partners can accelerate digital transformation in the current competitive environment and position themselves for success in a digital future.

The DigiM™ Digital Maturity Model is a 4-stage model, with Model 4 being the highest level of maturity. It is important to note that each stage in the Maturity Model builds on the previous one. To illustrate the point, it would be tough for an entity to operate successfully in Model 2 if the foundational EHR platform is not adequately optimized to support and integrate seamlessly with standalone best-in-class digital health tools. The following section describes the DigiM™ framework and the core attributes of entities in each maturity model stage.

Model 1: Health systems in Model 1 are focused on maximizing the value of their EHR investments. An example is improving patient access through a simple scheduling functionality in an EHR system. Health systems that embrace this model also prefer to rely on their EHR vendor's product roadmap to guide their digital roadmaps. Many regional or community hospitals that rely primarily on core EHR platforms for digital health initiatives fall in Model 1.

Model 2: Health systems in this model have committed themselves to virtualize their care delivery through telehealth, remote monitoring, and online self-service tools. The key attribute for health systems in Model 2 is that they look beyond the core EHR platform to identify best-in-class standalone tools for digital enablement. Model 2 health systems design online experiences for healthcare consumers that increase convenience, improve the

overall experience, and offer multiple communication channels between patients and their caregivers. In the wake of the COVID-19 pandemic, health systems across the board have invested heavily in telehealth and digital front door initiatives, often tapping into emerging technologies such as voice and harnessing digital health innovation from big tech firms and startups. Model 2 health systems tend to drive digital initiatives as part of an IT or telehealth program within the enterprise.

Model 3: Digital transformation programs are governed by a dedicated digital function in Model 3 entities. The digital function may be driven by individuals with additional responsibilities for other organizational functions. Digital leaders in Model 3 entities are often practicing clinicians focused primarily on the enablement of online access and communication for ambulatory care to improve utilization and broader telehealth adoption by patients and caregivers. Internal innovation groups drive digital initiatives in some health systems, responding to internal demand on a case-by-case basis. Digital executives in Model 3 entities typically do not have ownership for technology architecture

and infrastructure needs at the enterprise level. Instead, they tend to focus more on workflow, training, and user experience to increase the adoption of digital health tools.

Model 4: Health systems in Model 4 are the most mature enterprises in the DigiM™ framework. Health systems at this level have a comprehensive enterprise-level digital strategy that considers stakeholder priorities across functions and departments. Digital transformation leaders in Model 4 organizations look beyond standalone digital front door applications and consider digitalization opportunities across the front and back end functions, including administrative operations. They evaluate strategic IT enablers at the infrastructure and application levels needed to support digital health programs, all of which go into securing funding commitments for multi-year digital transformation roadmaps in line with enterprise priorities. Health systems in Model 4 typically commit to a handful of strategic technology platform partnerships in addition to EHR. They also have structured internal programs to evaluate and onboard innovative startups for driving enhanced experiences with digital health.



Healthcare technologies must be an interconnected ecosystem that is efficient, intuitive, and can take advantage of automation driven by data

Nick Patel, M.D.
Chief Digital Officer
Prisma Health

(From The Big Unlock Podcast)



Digital Maturity Assessment

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The DigiM™ Maturity Assessment tool is an online questionnaire tool that evaluates health systems based on responses to questions covering six dimensions as described below. Each answer is assigned a numerical score. There are multiple response choices for a question in some cases, with each option

Digital front doors

A well-executed digital front door strategy improves a patient's access to care with experiences like what they are already accustomed to in other industries like banking and travel. Digital front doors enable

digital patient journeys with tools such as online self-scheduling, find-a-doctor, chatbots, online registration and check-in, and more. The maturity assessment evaluates health systems based on the choice of tools. The tools can be native EHR

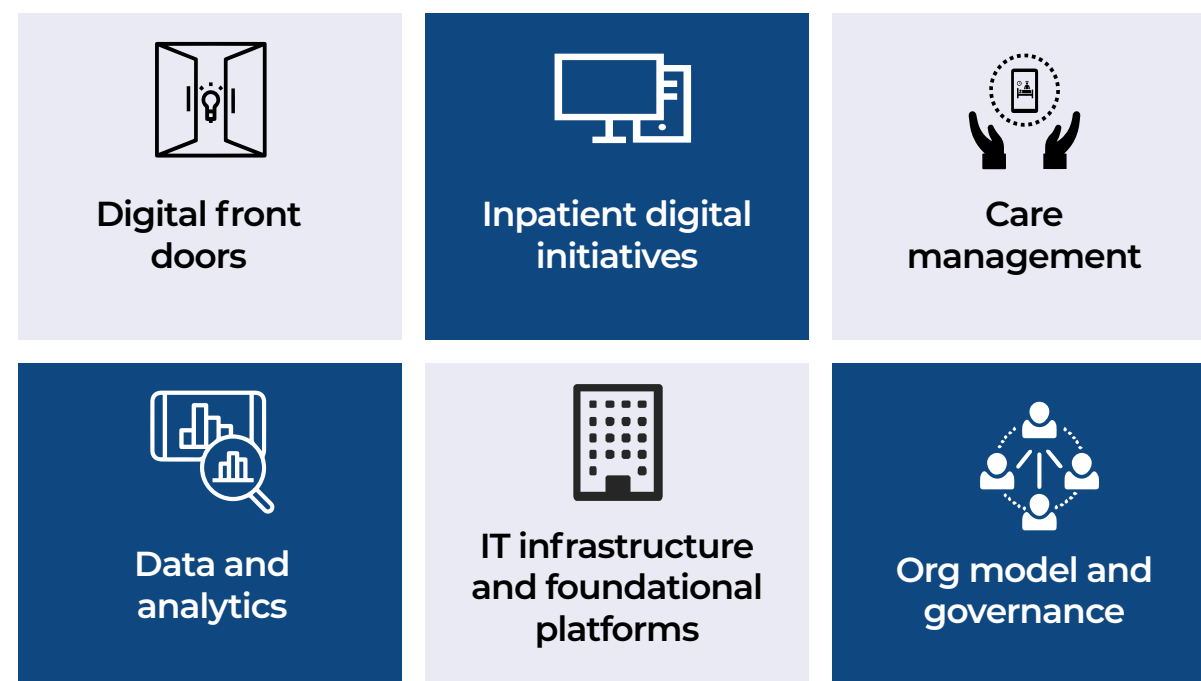


Figure 2: Key dimensions of DigiM™ Maturity Assessment Model

features or standalone platforms; often, health systems deploy multiple tools for the same functionality.

Maturity levels also consider whether the online experiences are seamless and integrated with other digital tools such as appointment reminders, payment gateways, and ride-sharing services. Health systems can also improve access by implementing tools such as slot utilization management to avoid revenue losses due to missed and canceled appointments. One major factor that defines the success of all digital front door applications is their integration into the overall workflows of the health system using standards such as FHIR.

Inpatient digital initiatives

Inpatient care has evolved over the years, with patients being offered specialized services from experts worldwide. Tele-ICU and Telestroke technologies allow for peer-to-peer communications between regional or community medical centers with experts anywhere. Many regional centers do not have neurologists on call available for emergency stroke management. Telestroke capabilities use the hub and spoke model to connect rural and urban centers to manage neurological emergencies. Similarly, a Tele-ICU can leverage advanced centers to communicate with patients in distant ICUs. With advanced cardiac telemetry devices, remote monitoring of cardiac patients becomes feasible. Some hospitals also use digital rounding applications to facilitate

physicians and nurses to enter orders or capture vitals at the bedside rather than entering them after returning to the nurse station after completing the rounds.

Other tools such as patient flow management allow for bed capacity management, managing the supply and demand of inpatient services (like phlebotomy, respiratory therapy), transfers to and from inpatient units, and coordinating case management. Though not directly related to a patient's clinical care, Wayfinding solutions help enhance the experience of the patient's family when visiting their loved ones.

Digitally mature health systems invest in telehealth programs for inpatient care that improve caregiver productivity and patient experience and outcomes.

Care management

As the virtualization of health care accelerates, health systems are looking at digital tools for routine care management. Remote patient monitoring (RPM) programs and multi-channel patient communication through SMS/Chat/mobile are among the high-impact initiatives in this area. Chronic disease management is a significant component of healthcare services. Leading healthcare facilities have invested in structured programs and tools to enable remote care for patients with chronic conditions, often involving patients directly in their care management initiatives.

Data and analytics

The most mature health systems make significant investments in data management for patient 360 profiles and build an API management layer to expose the underlying data in EHR and transactional platforms for digital health applications. These data repositories also drive population health management with advanced analytics and AI/ML programs that are increasingly deployed in clinical and administrative areas. Symptom triage, prescription auditing, automated alerts, reminders, and communications are some of the examples of artificial intelligence applications in use today. Advanced medical imaging solutions, sepsis prediction, risk management, and disease stratification are being powered with AI in clinical areas.

IT infrastructure and foundational platforms

In addition to core transactional platforms such as EHR and ERP, mature health systems are investing in CRM, ITSM, and cloud to create a robust foundation for driving digital health initiatives. Following the last two decades of regulatory compliance norms, more than 85% of the country's hospitals use a CCHIT certified EHR, which means that EHRs implemented are equipped with HL7 or FHIR compliant APIs. Many health systems are still way behind in integrating the other best in class tools with the EHRs. An API platform helps to orchestrate multiple tools with the EHR

and ensure seamless workflows. Similarly, the last few years have seen a gradual shift from on-premise application suites to cloud hosting. The advanced health systems have upgraded their IT infrastructure to include the latest technologies that consolidate patient portals, EHR, ERP, CRM, and others with healthcare standard protocols to give both providers and patients a seamless experience. Many health systems use robotic process automation (RPA) tools to manage routine operational tasks.

Org model and governance

An essential factor in success with digital transformation is how a health system is set up to implement digital initiatives. The DigiM™ Maturity Assessment tool considers various indicators such as a dedicated Chief Digital Officer role, a separately allocated budget for digital initiatives, and a documented approach to implementing enterprise digital roadmaps. Some health systems are setting up digital transformation offices (DTO) to drive enterprise-wide digital transformation initiatives. A DTO is distinct from a Chief Digital Officer role in that it is a standalone function tasked with actively enabling healthcare digital transformation initiatives across the enterprise. A senior leader typically leads the DTO in the organization with significant influence across functions and the authority and empowerment to make critical decisions related to investment priorities, among other things.



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Digital front door is a way for us to not only more heavily engage with our patients, but also open up that engagement and that access to our consumers

Craig Richardville

*Chief Information and Digital Officer,
SCL Health*

(From The Big Unlock Podcast)

Digital Maturity – Analysis of Select Health systems

Several leading healthcare systems have leveraged the DigiM™ Maturity Assessment tool to assess their digital maturity. The tool evaluates the relative maturity of select health systems in the U.S. by assigning numerical scores to individual digital programs implemented by health systems. There is a significant variation in the scores of the health systems, as is to

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be expected. The larger health systems have invested more in foundational IT infrastructure and data/analytics, suggesting a more comprehensive approach to transformation that positions them better for building seamless digital experiences for consumers. Smaller health systems have focused more on enabling digital front doors to address near-term priorities. In the longer term, entities that do not invest in IT modernization and adopting emerging technologies such as the cloud may find themselves at a competitive disadvantage. Very few health systems covered in our assessment are at Model 4

maturity level, indicating that most health systems are yet to develop or implement a comprehensive transformation.

A review of digital front door initiatives of 10 health systems selected as a representative sample from our database indicates the variations in how each health system is approaching technology implementation choices for digital patient engagement. While many health systems have implemented digital front doors using native features in their EHR platforms, several health systems have implemented standalone solutions with out-of-the-box FHIR/HL7 integration capabilities. Interestingly, there are significant gaps in the digital front door strategy, indicated in red as “not implemented,” which guides digital leaders on where they could lag behind their peers. Here, we note that the sample of health systems in the heat map above represent very large health systems and smaller systems with under \$1 billion in revenue. Therefore, what may seem a strategic priority for one health system may be relatively unimportant for another.

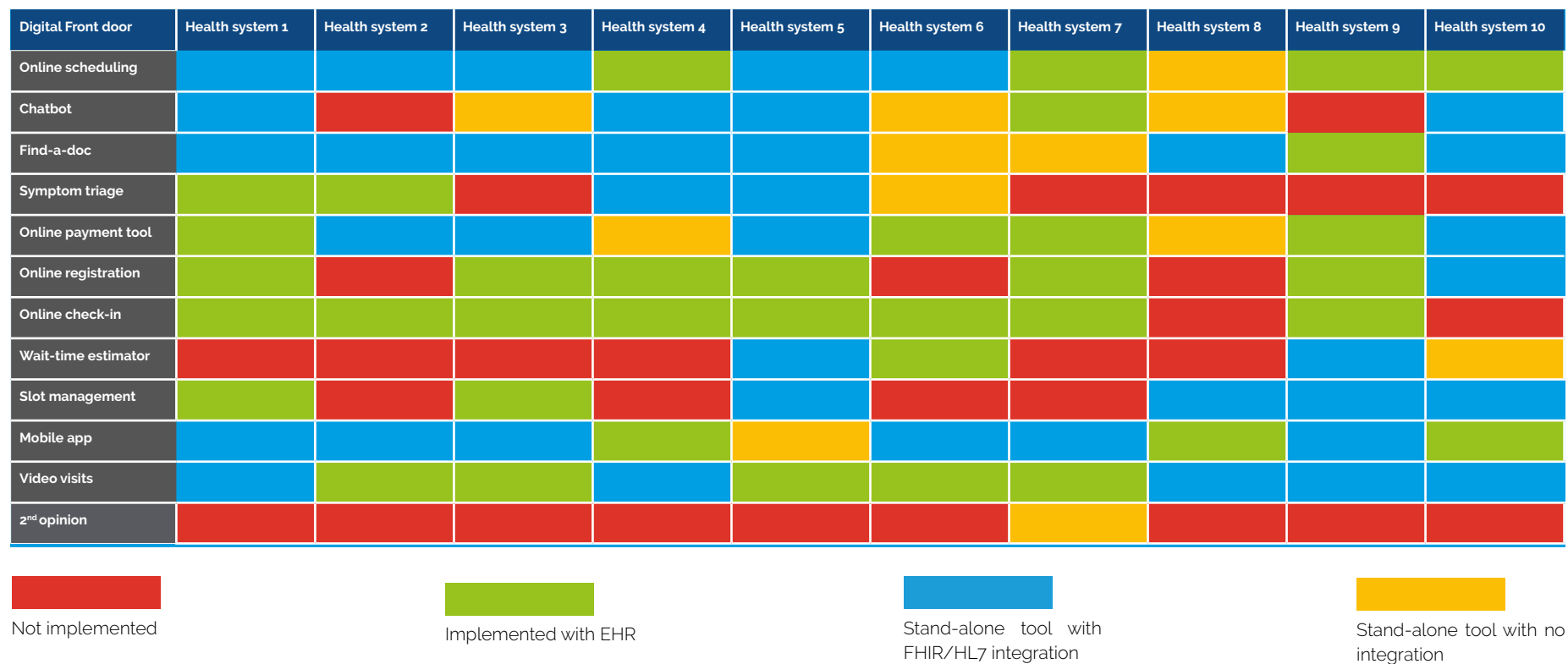


Figure 3: DigiM™ Maturity Momentum™ – Digital Front Door Initiatives of Select Health Systems

Our conversations with health systems leaders, who have taken the DigiM™ Maturity Assessment Survey, have served to help those executives review and revisit their investment priorities for their enterprise in a rapidly maturing marketplace. At one health system in New York, our analysis has

informed their near and medium priorities for digital enablement in their highly competitive markets.

The DigiM™ Maturity Assessment Survey responses also guide our views on the relative maturity of an organization's vision

and execution, indicated in the DigiM™ Maturity Momentum™ visual above. We notice that health systems are not evenly distributed on their relative maturity of vision and execution. Many health systems have made significant progress in executing digital health programs but lack a comprehensive enterprise-level digital

transformation strategy. In some of these organizations, the digital leader is often not a C-suite executive or may hold dual responsibilities. Such organizations also do not have a multi-year roadmap commitment and follow an annual budgeting cycle to prioritize investments. Conversely, some health systems have a strong vision but are lagging in execution for various reasons, including the absence of dedicated and conflicting near-term priorities.

The maturity level of individual health systems on the chart needs to be viewed alongside the scale and scope of the transformation program. Larger entities tend to be more complex, with multiple senior-level executives driving digital transformation. In such entities, driving change requires a higher level of organizational effort and tighter coordination among senior executives. We often see teams of executives collectively driving transformation under the overall sponsorship and guidance of the CEO and the board.

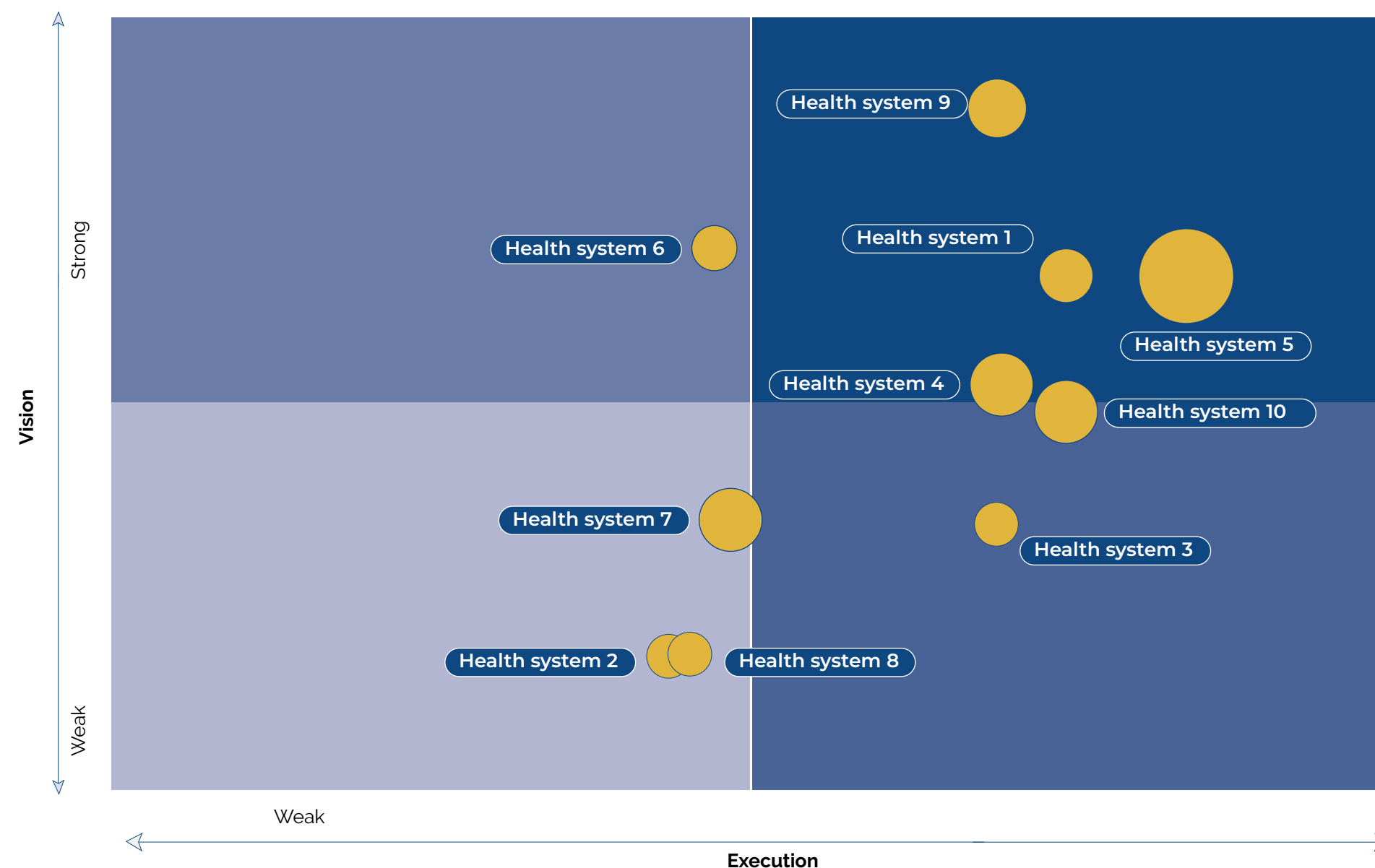


Figure 4: DigiM™ Maturity Momentum™ – Select Health Systems

Note: Size of bubble indicates relative size of the organization in the sample

Please hover over the circles to see the details

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In any healthcare organization, integration of third-party apps with your digital solutions can either make or break you.

Ray Lowe

*SVP and Chief Information Officer
AltaMed Health Services*

(From The Big Unlock Podcast)



How to Use the DigiM™ Maturity Assessment

Health systems executives may use the DigiM™ Maturity Assessment in a couple of ways:

- Compare and benchmark their maturity relative to competitors in their markets. Our analysis of the highly competitive New York City market for one of our clients enabled them to develop a highly focused roadmap with a clear set of near-term priorities.
- Engage in further discovery and exploration to validate their relative maturity levels and accelerate their transformation journey with focused investments and technology partnerships.

Research and client interviews conducted by Damo Consulting suggest that there are very few health systems at Model 4 maturity today. Our research indicates that half or more of the roughly 5500 hospitals in the U.S. are today in Model 1. Many of these systems are moving to Model 2, which is where a large majority of mid-tier health systems exist. In these systems, digital investments are guided by departmental or functional priorities and implemented

under a CIO's leadership. Health systems in Model 3 are taking the next step towards providing the required focus for digital initiatives by appointing a dedicated leader to the role.

Organization models for digital transformation are evolving. In some cases, the leader is a clinician with additional responsibilities; in others, it is an individual with responsibilities for marketing and patient communications. Many CIOs are de facto digital leaders in their organizations today. However, among the more mature health systems, the front and back end of digital transformation is led by separate leaders.

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The DigiM™ Digital Maturity Model is a starting point that provides an objective assessment of the current state. Health systems will benefit from an additional validation of internal priorities to develop a roadmap for achieving their digital transformation goals.

Paddy Padmanabhan

CEO

Damo Consulting Inc.



Turning Insights to Actionable Roadmaps

The DigiM™ Digital Maturity Model is a starting point for a careful benchmarking of a health system in its competitive landscape and against the industry's overall state. The scoring ranges, and the detailed commentary accompanying the scores, provide individual data points from which the health system can help reprioritize investments and accelerate progress.

The DigiM™ Maturity Assessment tool emphasizes the importance of online access or digital front doors in a health system's digital transformation roadmap, a high priority area of focus today. Health systems leaders can use the assessment scores to identify gaps in their roadmaps and prioritize/reprioritize investments as necessary.

Since the scores are based on self-assessment, health systems leaders will benefit from an additional level of validation that explores the degree of progress with individual initiatives and compares it with the progress made by other health systems. Damo Consulting offers a 6–8-week consulting offering that can turn the

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maturity assessment scores into actionable inputs and will achieve the following:

1. Validate self-assessment based on detailed benchmark data and further evaluation of ongoing initiatives.
2. Discover organizational needs with internal surveys, focus groups, and 1:1 leadership interviews to identify priorities and dependencies.
3. Benchmark the DigiM™ score against industry peers at the level of individual digital health programs.
4. Develop competitive intelligence and use it to drive investment priorities and partner selection.
5. Identify key technology partnerships to achieve digital objectives using our one-of-a-kind DamoIntel™ database of digital health initiatives across health systems and technology partners, enabling the programs.

Damo Consulting has vast expertise in developing digital roadmaps for some of the nation's largest health systems. We have helped health systems direct hundreds of millions of dollars in digital health investments using a structured playbook for digital transformation. Our approach has saved tens of millions of dollars, helped digital leaders make the right partner decisions, and accelerate their transformation journeys.

Take the DigiM™ Digital Maturity Assessment

Turning insights into action - a 5-step process



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Damo Consulting provides digital transformation advisory services to enable healthcare organizations navigate the technology-enabled transition to telehealth and virtual care. We bring deep industry knowledge, market insights and technology skills to help develop and implement enterprise digital roadmaps. We work with healthcare IT and digital health firms to develop and execute market growth strategies.

