The airline industry often serves as the inspiration for healthcare's evolution. Airlines developed checklists to promote standardization and improve safety. Healthcare followed with Atul Gawande's Checklist Manifesto. Airplane captains moved from positions of unquestioned decision-making authority to more of an integral team player. Doctors find themselves in similar care team captain roles. From a technology and consumer engagement standpoint, airlines transitioned from travel agency bookings to self-service websites and fully-functional smartphone apps.

Unfortunately, healthcare lags in mirroring airlines' digital capabilities and toolsets. Yet, healthcare organizations are widely evaluating and pursuing digital technologies as an attempt to strengthen consumer relationships and experiences. Most recently, many organizations are particularly focused on the world of smartphone apps—driven by a sense that they should have an app, yet in many cases challenged by what exactly that app should do—and how to implement it effectively.

Neither a wait and see approach, nor a rushed reactive "App now!" approach is ideal. Providers can make their smartphone strategy smarter by better understanding the consumer application landscape and experience to date and answering some key questions to inform their app approach.

Integration.
There is one database that links booking a flight and payment processing. Health systems should fully integrate with their EHR as the single source of truth for consumers' clinical information and with revenue cycle to enable easier bill payment.

Identify and play to your strengths.
Airlines that have successfully evolved their apps' capabilities have been deliberate in rolling out functionality that plays to their strengths and considers implications for existing workflows, while addressing the most pressing consumer needs. Providers can take a similar approach. Identify your capabilities and play to those strengths.

Limit choices...at least initially.
Airline smartphone apps now allow you to link to your frequent traveler program, book and pay for a flight, check flight status, view upcoming flight information, check in, access digital ticketing and purchase value-added services. They did not start out that way. Initially, airline apps only allowed the user to see flight schedule timetables; then booking came along. They do not in real time allow you to communicate directly with the pilot, flight attendant and ground crew. So, start simply and expand with meaningful functionality.
The Case for Smartphone Apps

Smartphones hold the promise of consumer stickiness. Within most regions in the U.S. and especially in urban settings, many choices exist for healthcare. Everything from urgent care and stand-alone ambulatory surgery centers (ASCs) to wellness destinations and diagnostic centers compete for patients and other consumers. Traditionally, consumers have an affinity to certain health system brands—due to past experience, health professional referrals, independent research or personal recommendations. In today’s digital age, many industries have seen that consumer-centric smartphone apps can promote additional stickiness (share of wallet) and even drive incremental customer acquisition (share of market). It stands to reason that healthcare may see that same dynamic. A thoughtfully-conceived and well-designed smartphone app may also help maintain activation and engagement with consumers—ideally with the benefit of achieving better health as a result. Furthermore, apps can direct consumers to in-network primary care providers (PCPs), specialists, clinical and other health service offerings.

If We Build an App, Will They Come?

While smartphone applications are an essential part of everyday life, their broad applicability today for healthcare is questioned by many executives. Organizations struggle with what their consumer-facing presence on smartphones should be. It is all too common that health systems are reactively releasing apps in response to board prompts or competitor moves without careful analysis of the organization’s specific consumer wants/needs and alignment with their unique strategic imperatives. Many utilize their EHR vendor’s patient portal app and rebrand it “MyHealthSystem.” Unfortunately, many of these off-the-shelf apps are not consumer-friendly and have an underwhelming level of adoption. Some systems have released custom apps for consumers and employees with varying levels of success. Other systems are taking a wait and see approach, acknowledging that many of their high-value “frequent-flyer patients” are elderly and more likely to be smartphone naïve. Similarly, some systems question whether their target Baby Boomer demographic—the next generation to require significant acute care needs—will broadly use smartphone apps, and furthermore, are unsure if such an app will extend their market penetration to attract younger more tech-savvy users.

Whether it is health system-specific or a general healthcare smartphone app, the total number of health-related apps available today exceeds 325,000. While each may hold special value to the creator of the app, most will never have a following of devoted users. In 2017 there were an estimated 3.7 billion mHealth smartphone app downloads, but the majority have less than 5,000 downloads annually. Healthcare system-based smartphone apps may have a leg up on other mHealth app developers given a recent FDA warning to those companies regarding diagnoses being made by non-provider organizations. Despite this implied advantage, smartphone apps within the healthcare delivery field do not offer a “Field of Dreams” guarantee of “If you build it, they will come.”
A Smarter Smartphone Strategy

With this context in mind, health systems may perceive that they need something in this app space—but it is not always clear what exactly they should pursue. Leaders can begin to bring focus to their smartphone application strategy by beginning with several key design-specific questions, including the following:

1. How do you decide if you need an app and who is your target audience?
2. What will differentiate your health system and your app from the competition?
3. What will your app need to do for patients and families to be frequently used?
4. How will you prioritize use cases aligned with your strategic priorities and specific capabilities?
5. How will it promote consumer engagement and system stickiness?
6. Will providers need to respond directly to consumers using the app?
7. What operational changes will need to be made to enable consumers to engage with their providers via the app?
8. How will direct consumer engagement affect physicians and other health professionals, and how will that impact burnout (positively or negatively) and productivity?
9. How will you drive adoption and measure success?
10. How will you respond to feedback from users to enhance capabilities over time, and what resources are required to do so?

Health systems also need to evaluate the how—specifically whether to build, buy or partner. While tight integration for clinical data is a must for patient-specific information, health systems may elect to use only a portion of their EHR as a widget for a custom-built system app. Partnering with advisory and/or technology firms, either start-ups or established, may infuse fresh ideas to catch consumers’ eyes. Buying existing technology from a well-established app developer which has created airline, hotel or other successful smartphone apps presents a third path when evolving the journey. There is a menu of options. The beauty of well-designed digital front doors—and specifically smartphone apps—is that they can be modular and over time, personalized to meet individual consumers needs.

The Chartis Group
Potential App Functionality

**INFORMATIONAL**

Find-A-Doctor
Physician look-up tool with links to provider-specific information beyond insurance accepted and specialty in isolation of particular sub-specialty (i.e., orthopedic surgeon who only operates on hands or hips).

Medication Lookup
Medication information and knowledge base for drug-drug interaction checking, side effect profiles and cost data.

**PATIENT/CONSUMER-SPECIFIC**

Integrated Digital Scheduling
Scheduling visits and procedures from many different locations (e.g., portal, app, kiosk, various health system websites, commercial websites like WebMD), all accessing the same database with a similar look and feel.

Virtual Pre-Registration
Simple online tool to save time and avoid potential embarrassment in the registration line.

Automated Lab Results
Once a lab is drawn/ordered, the results are sent to a portal, and the patient is automatically emailed that they are ready, or the results are sent directly to them.

Diagnosis Aid and Symptom Tracker
Ability to enter symptoms and narrow the possibilities of different diagnoses. Also, may contain tracking of symptoms to further define the exact problem and possible treatments.

Remote Patient Monitoring
Commercially-available as well as hospital-grade tools which enable home or away-from-home monitoring of everything from heart rate and rhythms to sleep patterns including aids to diagnose sleep apnea.

**OPERATIONAL**

Educational Material
Links to additional helpful resources for information such as disease and condition-specific content.

Way-Finding
Step-by-step directions or map-based view to the facilities’ parking and in-facility locations.

Automated, Out-of-Pocket Price Estimates
Price estimates that are not charge-based estimates but complete, out-of-pocket estimates for future encounters.

Wait-Time Tracker and Notification
Presents wait times in various locations (e.g., EDs, urgent cares, PCP or specialist offices, radiology or other diagnostic testing sites), tied to the EHR time stamp system or other rooming tools. It may also allow notification of patients via text or automated phone call if they are in the wait queue at a venue.

Customer-Driven Quality Reporting
Transparent reporting that provides additional metrics that are more meaningful to consumers (e.g., time until back to work, return to function).

Virtual Visits (Text, Email, Audio, Video, Chat)
Contemporaneous or asynchronous electronic advice, appointments or visits with a healthcare provider.

Prescription Renewal Requests
Tool for refill requests in addition to being notified based on patient’s prescription and appropriate adherence rate of need for refill.

Research Notification and Clinical Trial Matching and Enrollment
Tools which would enable identifying clinical trial offerings at your institution and matching them within a HIPAA-compliant manner with EHR data to present opportunities for enrollment.

Social Connectivity Groups
Hosted condition-specific apps to support individuals with condition via connection with others with similar conditions. May be monitored by health coach or provider for specific questions and direction for new treatments.

Embedded Care Management and Digital Therapeutics
Toolset which helps to track status of focused individual initiatives, progress to goals and provides feedback from support group or health coach (e.g., obesity management, smoking cessation, diabetes mellitus).
Seize the Moment

Neither a wait and see approach, nor a rushed reactive “App now!” approach is ideal. Instead, it is essential to seize the moment, define your app strategy and develop this key aspect of your digital front door. In doing so, here are five key success factors to consider:

- **Tie to your strategic imperatives.** Tightly align with the mission, vision and goals of the organization and advance the organization toward its overall enterprise, as well as its digital, strategic objectives.

- **Dedicate sufficient resources and define explicit ROI metrics.** Too many healthcare digital initiatives never gain material traction, and as a result, utilization is anemic. Dedicating resources to identify impediments to adoption and measuring the value of their efforts is essential.

- **Coordinate with operations.** This is essential, especially for clinical workflows and ensuring the continuum of care among the care team end-users.

- **Reflect the wants/needs of your consumers.** Conduct market research to identify your patient/consumer groups’ desires from wellness choices to chronic disease management. Apply Agile techniques to optimize development costs.

- **Integrate with the EHR and other technology back-end data.** This feature delivers value to your patients’ unique-to-provider-sponsored apps. Today only a provider-based or sponsored app can link to the patient’s own medical records. Over time, this architecture can integrate additional data sources such as consumer data and social determinants to allow for more sophisticated management of your consumer and business strategy.

Smartphone apps have become the personal digital assistant for airlines (even as air travel often remains a grumble-worthy experience). It is time healthcare leapfrogged the airline industry to deliver smartphone apps with personal digital assistant abilities focused on helping patients/consumers and their families achieve the best health with as little hassle as possible. At the same time, the application development process presents an opportunity to improve the performance of health systems in aggregate by tightly aligning smartphone app functions with the system’s mission, vision and strategy. Ultimately, this can yield a truly personalized experience that promotes deep customer loyalty in ways that health systems have not yet experienced.
Sources

About the Authors

G. Daniel Martich, MD
Principal, Informatics & Technology
412.721.0441
dmartich@chartis.com

G. Daniel Martich, MD, a Principal with The Chartis Group, is a proven physician executive with excellent leadership, organizational and interpersonal skills with over 30 years of experience in the industry serving across academic medical centers, large integrated health systems and population health companies. He has a strong background as a research leader in clinical informatics, with a focus on patient engagement and consumerism. His leadership efforts have resulted in organizational efficiency gains, standardization, and improved quality and operational design. Dr. Martich has served as Chief Medical Information Officer (CMIO), Vice President of Physician Relations and Enterprise Chief Medical Officer (CMO). His efforts have resulted in being recognized as one of the Top 25 CMIOs in the US. Dr. Martich is a nationally and internationally-recognized speaker on patient safety, quality improvement, organizational effectiveness and information systems. Prior to joining The Chartis Group, Dr. Martich served as Interim CMIO for PeaceHealth Medical Group; Chief Medical Officer for WVU Medicine and CMIO for UPMC.

Ryan Bertram
Principal,
Chartis Digital
847.909.7416
rbertram@chartis.com

Ryan Bertram is a Principal at The Chartis Group within Chartis Digital. In his 10+ years as a management consultant, Mr. Bertram has served leading organizations across the country as they navigate the changing healthcare environment. He has significant experience in strategic planning, organizational alignment, M&A, go-to-market and commercialization strategy, and value-based care, along with a keen interest in the transformative power digital solutions will have on the new health economy. Notable recent engagements include strategic diligence for a buy-side PE firm’s bid on a large health services enterprise, business planning and launch of a population health management company, and enterprise strategic planning for a leading West Coast academic health system.

Shawna Schueller
I&T Practice Manager
612.850.0825
sschueller@chartis.com

Shawna Schueller is a Senior Practice Manager for The Chartis Group. She is a leader in the Informatics and Technology practice area focused on helping healthcare organizations leverage the power of informatics and technology to advance market position and move the needle on care cost, quality, outcomes and experience. Ms. Schueller is a HIMSS Fellow and has been honored nationally with both the HIMSS Chapter Leader of the Year and Advocacy Liaison Roundtable Advocate of the Year awards.
About The Chartis Group

The Chartis Group® (Chartis) provides comprehensive advisory services and analytics to the healthcare industry. With an unparalleled depth of expertise in strategic planning, performance excellence, informatics and technology, and health analytics, Chartis helps leading academic medical centers, integrated delivery networks, children’s hospitals and healthcare service organizations achieve transformative results. Chartis has offices in Atlanta, Boston, Chicago, New York, Minneapolis and San Francisco. For more information, visit www.chartis.com.