

WHITE PAPER

# Leveraging Cross-Channel Design to Transform Physician Engagement

Taking a structured approach to building a truly unified experience across web, mobile and other digital channels



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## Changing Consumer Trends and the Impact on Healthcare

The last few years have been truly disruptive for consumer data and consumer technology across a number of industries such as banking, travel and online retail. Over this period, we have seen a seismic shift in consumer attitudes, motivations and the way they interact with technology, especially in these industries.

This shift in consumer behavior is defined by four key characteristics:

**Technology Innovation:** Driven by innovations in mobility, social media, embedded systems, cloud computing, geospatial systems, big data, analytics, the Internet of Things (IoT), etc., today's consumer is more sophisticated in his or her everyday interactions at home, outside the home, and even at the workplace (with

concepts such as Bring Your Own Device (BYOD) taking shape).

**Multi-Channel Engagement:** Consumers today expect to interact through a range of touchpoints like mobile apps, social platforms, wearable devices, as well as traditional channels like TV, print, point of sale, clinics, inpatient settings, etc.

**Personalization:** Organizations are able to provide highly personalized and contextual experiences to customers through digital media.

**Real-Time Information and Analytics:** With more and more powerful consumer devices at their disposal, consumers are able to process data and utilize advanced analytics to make better decisions anytime, anywhere.

### Highlights

- Ubiquitous access to computing - increasing number of channels, devices and applications
- Availability of abstract information
- Engagement and User Experience (UX) driven design
- New types of data – social, mobile, apps, sensors, wearable devices, biometric, etc.
- Demand for consistent user experience across devices and touchpoints
- Challenges around adoption of digital channels in healthcare

## The Impact on Healthcare

In recent years, healthcare has also been impacted by the consumer technology wave, albeit to a limited extent (in areas like emergency care, population health, care coordination, wellness and fitness management, etc.).

However, most of the movement has been consumer driven. Enterprises, given their conservative approach to technology investment over the years, are still struggling to piece together different parts of the healthcare IT ecosystem. As such, very few health systems have made any real effort toward building a comprehensive and cohesive ecosystem for quality consumer engagement. But now, with regulators taking a more stringent view of patient data sharing, consumer empowerment and patient self-management [Meaningful Use Stage 3, Accountable Care Organizations - 33, Patient Centered Medical Home, Value-

based Payments], organizations are making greater investments in physician and patient experience initiatives. And with greater collaboration in the healthcare industry, including health plan-provider integration, health systems will be under greater pressure moving forward to improve quality and cost metrics. Consumer engagement is likely to play an important role here.

Considering that consumers are quickly adopting technology for their everyday needs, and are likely to demand better engagement from their caregivers, high quality user experience may soon become a strategic need. The healthcare industry (including providers, payers, life sciences companies, device manufacturers, etc.) cannot afford to stay behind for much longer. It is clear that the next generation of healthcare IT will need to be more user-centric, allowing data to flow seamlessly between applications, helping providers and patients collaborate through online

**The next generation of healthcare will need to be more user centric.**

tools, and leveraging technology like big data and wearables. We are already seeing instances of mobile devices, sensors and biometric devices supporting the clinical workflow (e.g., care coordination, population health management, point of care decision support). The BYOD concept is rapidly gaining ground, with organizations allowing the use of personal mobile devices within the care setting, allowing physicians to access patient data in real time, and thereby improving quality and speed of decisions at the point of care.



## The Need for Cross-Channel Design in Healthcare

The evolving healthcare IT industry is driving physicians to build collaborative practices (with patients, other physicians, specialist care providers, diagnostic services, ancillary care providers, emergency care, analytics professionals, etc.) using patient information from a wide variety of sources across the care continuum. However, physicians face significant challenges in seamlessly managing patient information from diverse touchpoints, dealing with legacy user interfaces and sharing information with other stakeholders, leading to sub-optimal clinical outcomes.

Healthcare organizations not only need to provide physicians sophisticated tools, they also have to ensure seamless interaction with different applications, across devices, platforms and care settings, to enable

stronger physician engagement and management of patient data.

This is where cross-channel design plays a strategic role.

Simply put, cross-channel design is about considering a wider array of touchpoints and a consistent narrative for your product, so that as your customers move through their life, they're seamlessly moving into and out of your product experience, not simply docking up to it from time to time. (Justin Davis, Cofounder: Madera Labs)

Key highlights for cross-channel design in the clinical workflow are:

- Creating a consistent user experience across different use cases and touchpoints
- Leveraging the power of ubiquitous

**Cross-channel design is about designing the user's journey through various tasks and availability of information in context of the channel and user ecosystem.**

computing and abstract information

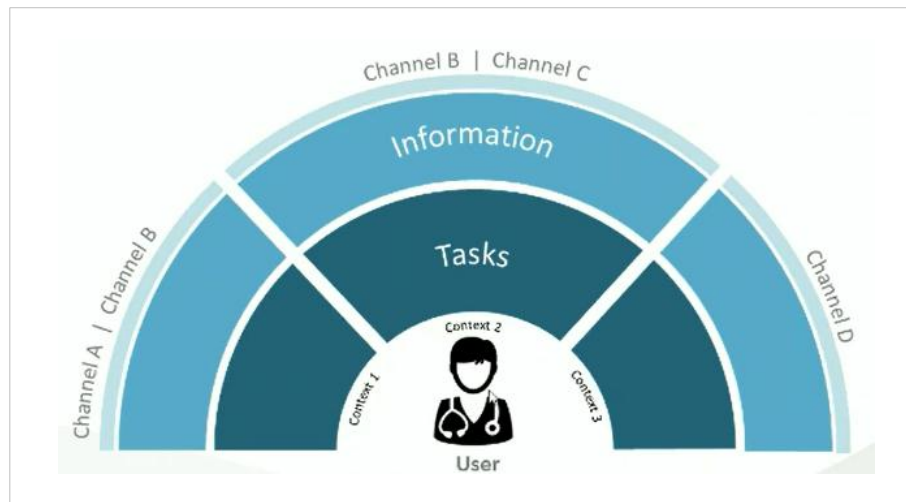
- Building simplicity and predictability in user interactions
- Addressing challenges around adoption of digital channels
- Taking a structured approach



## Cross-Channel Design in Healthcare: Taking a Structured Approach

### Building a Design Strategy

- **Users and Behavior:** One of the most important parts of any cross-channel design framework is understanding the end-users and the context in which they function.
- **Tasks:** We need to understand key tasks that users would perform and their motivations to perform a specific task.
- **Information:** User expectations of information depends largely on the task they need to accomplish.
- **Channels:** We also need to get a clear understanding of the various channels available to users to access this information and what their motivations are to use a specific channel.



Cross-Channel Design Strategy: Information, Tasks and Channels



## Users and Behavior

### Understanding your healthcare end-users

The first step in user-centered design involves applying user research techniques to get a deeper understanding of users' interaction with different systems, actors and the tasks they perform. We use all this information to create personas, that are detailed descriptions of a particular user group's demographics, behavioral patterns and preferences.

**Physician: Persona**

**Andrew Benson**

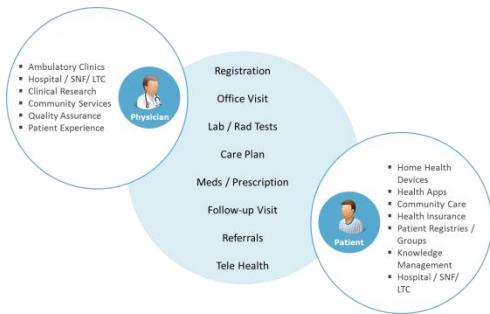
A boarder Physician at Glen Street Hospital, with a decade of clinical experience and mostly deals with acute and chronic diseases. He has contributed editorial to international journals on various chronic diseases and has presented several papers in international conferences in Europe and USA. He has also been to various national business week and family life.

<p><b>Demographics</b></p> <p>Age 42</p> <p>Occupation Physician</p> <p>Location LA</p>	<p><b>Important Tasks</b></p> <ul style="list-style-type: none"> <li>• Organizing preventative medical programmes for individual patients</li> <li>• Record patients' medical history</li> <li>• Meeting targets set by the government for specific treatments, such as blood immunizations</li> <li>• Discussing the development of new pharmaceutical products with pharmaceutical sales representatives</li> <li>• Observing and assessing the work of trainee GPs and medical students and teaching at medical schools or hospitals</li> </ul> <p><b>Frequent Tasks</b></p> <ul style="list-style-type: none"> <li>• Responding to medical/health problems presented by patients including diagnosis, investigation, treatment and referral as appropriate</li> <li>• Making rounds on daily basis</li> </ul> <p><b>Goals</b></p> <ul style="list-style-type: none"> <li>• Timely appointments to ease patient anxiety</li> <li>• Build relationships with patients</li> <li>• Balance work and family time</li> </ul>	<p><b>Challenges</b></p> <ul style="list-style-type: none"> <li>• Maintaining confidentiality and integrity</li> <li>• Keeping up to date with medical developments, new drugs, treatments and medications, including complementary medicine.</li> </ul>
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### Understanding the user's ecosystem

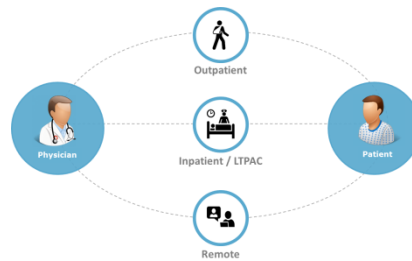
Then we develop a deeper understanding of the user's ecosystem. For example, physicians may perform a wide variety of tasks in a hospital, in community services or as part of a clinical study, but when they interact with patients, they perform very specific tasks, e.g., patient registration, lab tests, prescriptions, referrals, follow-ups, tele health, etc.



### Understanding user behavior across different care settings

Physician-patient interaction happens in different care settings and each setting entails differences in user behavior.

For example when physicians are dealing with patients at their clinic, they are more likely to be relaxed as compared to remote situations, where they are likely to be distracted and have a short attention span.





## Tasks, Information and Channels

### Tasks

Different care settings demand for different tasks. Though the overall aim is to assess the patient's health and provide treatment, the frequent and important tasks change across channels. For example, an outpatient setting demands for quick analysis of overall health, prescribing medicine and updating the EHR. In an inpatient setting, the focus is on current health status and response to the treatment. A remote setting requires monitoring of adherence to the prescribed health routine.

	<b>Out Patient – Consulting Room</b>	<b>Relaxed</b>	<ul style="list-style-type: none"> <li>Identify Patient, understand the symptoms and diagnose the condition</li> <li>Look for relevant info and/or reports from medical history</li> <li>Prescribe medication</li> <li>Update the EHR</li> </ul>
	<b>In Patient – On Rounds</b>	<b>Focused, Attentive</b>	<ul style="list-style-type: none"> <li>Analyse patient's current health status and response to the treatment for which the patient is admitted</li> <li>Provide updates to the treatment</li> </ul>
	<b>Remote</b>	<b>Short attention span</b>	<ul style="list-style-type: none"> <li>May not be in hospital / clinic</li> <li>Could be in completely different environment; with family, home, travelling, etc.</li> <li>Ensure patients are taking their medications and following the routine prescribed to them</li> </ul>

### Information

To perform tasks effectively, physicians need access to information such as vitals, medications, lab reports, social history, etc. However, the flavor of information changes with every care setting. While an outpatient setting needs current and historic information of vitals, an inpatient setting demands for latest information and their pattern since admission. A remote setting requires a physician to know whether patient's latest vitals have been captured and updated in the system.

	Patient Vitals	Medications	Reports
	Out Patient – Consulting Room Current and historic information on vitals	Current medications, History of medications & allergies	Historical information of all related reports with the latest first
	In Patient – On Rounds Latest information, and pattern since admission Focus on most critical information	Latest dosage of current medication	Latest lab / rad results pre and post operation
	Remote Latest vitals and are they updated	Medication adherence Actual medicines may not be priority information	Status update for an expected exam

### Channels

While the physician performs various tasks using the available information through multiple devices that they have access to, there are a few devices that let them execute the tasks more effectively. Of all the devices available in a specific care setting, it is important to identify the ones that the physician would prefer and optimize the design, considering selected devices as the primary channel of information delivery and task execution.

	Laptop	Monitor	Tablet	Smartphone	Smartwatch
	●		●		
		●		●	●
				●	●





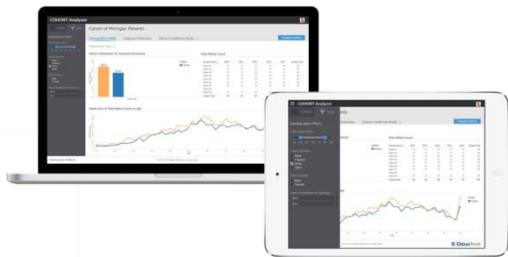
## Successfully Executing your Cross-Channel Design Strategy

### Building consistency

Cross platform consistency for visual design, functionality, interactions and overall tone of voice regardless of channel results in:

- Building trust
- Reducing the learning curve
- Efficient usage and better productivity

An analytics tool on a tablet needs to have consistent behavior with the desktop version to reduce the learning curve.



### Ensuring availability

Users may choose one channel over another at any given time. Systems should be designed in a way that users can complete tasks on any channel.

Design has to ensure availability of all relevant tasks but limit the functionalities to those that are operationally feasible for a channel. Detailed diagnostic functionalities for images are not relevant to mobile devices.



### Creating a seamless experience

Often users do not complete a task in a single go. This could be due to interruptions, long and complex tasks or channel limitations.

Population health workers use multiple channels to do a member's (patient) health risk assessment.

Good design ensures that the experience is seamless and continuity is maintained when the user switches channels.





## Case Study: Cross-Channel Design to Enhance PHM

### Client

A leading population health management company in the U.S.

### Target Application

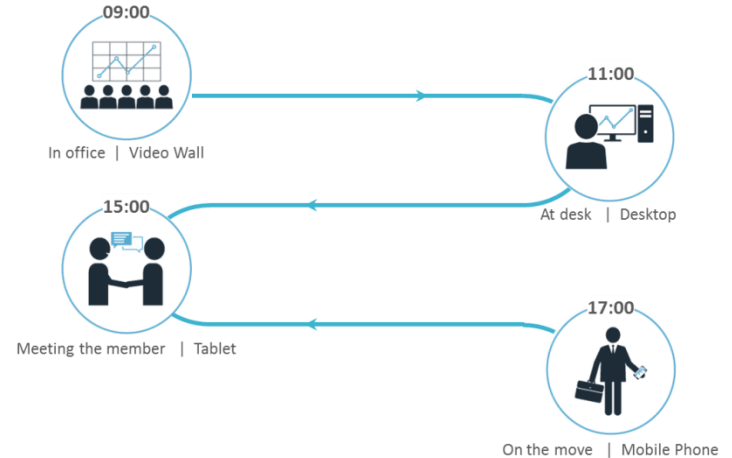
An application to manage population health by tracking gaps in care of members belonging to health plans. The application would also allow for enrolling the members into various disease management programs.

### Challenge

Medical practitioners were used to the legacy systems with manual processes. UX challenge was to migrate the users to digital channels and match the simplicity of pen and paper as an interface.

### Solution

Medical Practitioners Day In the Life Of (DILO): The cross-channel app allows medical practitioners to understand the population status during their morning meeting and plan their strategy to address the challenges. They meet the members to understand the health risk and keep in touch with the members enrolled into the disease management program.



### Value Delivered

Designed a cross-channel app ecosystem that would enable the medical practitioners to do all their day-to-day activities through digital channels like video wall, desktop/laptop, tablets and mobile devices

## Conclusion

The healthcare industry is ripe with physician and consumer engagement challenges that can greatly benefit from cross-channel design. However, in the absence of a structured approach and an underlying framework, effective cross-channel design is very challenging, especially in healthcare, where users need to handle highly complex and varied data to perform their tasks.

Any structured approach to cross channel design must include:

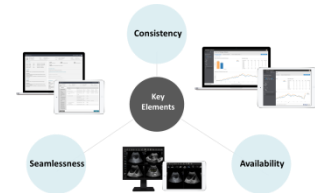
- Understanding your users;
- Understanding their needs for information, tasks and optimal channels based on the context; and
- Implementing the design using key elements of consistency, availability and seamlessness.

### Design Strategy Framework



- Understand user's context, behavior and key tasks.
- Identify devices available in each context.
- Understand users' expectations from information based on context and device.

### Design Execution: Key Elements



- Provide consistency in the User Interface (UI) across all devices.
- Identify the key tasks for the product and make them available across all the channels.
- Identify the tasks that user may start on one channel and complete on another. Ensure seamless translation of information and tasks.
- Optimize the UI for interactions on the device and leverage the hardware capabilities.

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## About CitiusTech

CitiusTech is a specialist provider of healthcare technology services and solutions to medical technology companies, providers, payers and life sciences organizations. CitiusTech's services and solutions include healthcare software development, healthcare interoperability, regulatory compliance, BI/analytics, consumer engagement, care coordination and population health management.

CitiusTech helps customers accelerate innovation in healthcare through a number of solutions and accelerators for clinical quality reporting, big data, cloud computing, mobile health and predictive analytics. With cutting-edge technology expertise, world-class service quality and a global resource base, CitiusTech consistently delivers best-in-class solutions and an unmatched cost advantage to healthcare clients.

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