WHERE WILL THE DIGITAL SERVICE DESIGN REVOLUTION TAKE YOU?

Discover the opportunities in healthcare and life sciences

What does the digital service design revolution actually look like? It’s a leap in patient care and health outcomes with physicians, specialists, nurses, the community of experts, the community of patients, and the patient’s family working alongside the patient to make treatment decisions easy and care personalized. It’s a boost to collaborative, supportive care. And it’s peace of mind for everybody involved, knowing that all health parameters are constantly monitored, preventive measures ensured, and timely action taken in a closed loop delivery of care. Here’s how.
Recently, we designed a digital service use case to enhance Multiple Myeloma (MM) patient engagement and outcome for a global research and development-driven pharmaceutical company. Typically, MM affects the elderly population. However, each patient is different with their own comorbidities, treatment concerns, and preferences. Here is Ben suffering from MM and diabetes. He takes radiation therapy at regular interventions for symptom control. On a day-to-day basis, Ben tracks his blood glucose level, takes insulin, and most likely, a few drugs such as iron supplement for anemia and aspirin or warfarin to prevent thrombosis. At a broader level, he might be seeing a general physician, an oncologist, a skilled nurse, a radiation therapist and other caregivers. Now let’s throw digital solutions into the mix: Ben may have an app to track his appointments, another to manage his diabetes, an e-prescription for medicine renewal and monitoring app, a fitness tracker, a digital diary to track his reports, and so on. For a chronic disease sufferer, managing these singular pieces are exceptionally overwhelming. Can we offer a holistic solution that empathizes with his needs and offers care collaboratively and intuitively across the user journey?

A digital service design for remote and personalized care for MM

MM stages

Unmet needs of patients and caregivers

- Deciding the treatment course
- Adhering to the treatment course
- Dealing with chemotherapy side effects
- Coming to terms with an uncertain future and long-term treatment
- Maintaining a good quality of life
- Keeping track of lab visits and reports, scheduling appointments, maintaining daily medication logs, and adhering to combination therapies
- Managing side effects
- Getting collaborative, supportive care, especially if very elderly
- Prescribing the right combination of medications and therapies while collecting data to predict patterns
How would digital service design impact the patient journey?

1. **Patient discharge from the hospital**
   - HCP (Healthcare Professional) prescribes home care plan
   - HCP service referral

2. **Patient enrollment and package selection**
   - Manual care plan logging
   - Package/device options
   - Payment modes
   - Service representative sends details
   - Patient selects home delivery of medications
   - Patient selects medications from local pharmacy

3. **Home therapy/care**
   - Therapist visits home, installs device, and trains the patient/caregiver
   - Patient makes cash payment
   - Next visit as per schedule, criticality
   - Clinical vitals recorded manually (device alarms, patient report on progress, device data, health data, patient report on progress)

4. **Device-related information**
   - Decision on the next visit and therapy

5. **360-degree, 24x7 data sharing with all stakeholders**
   - Medications delivery and test reports fed into the patient care plan and health records
   - Homecare center (HCC) physicians' feedback

6. **Back-end support**
   - **6a** Therapists upload device data onto cloud
   - Data shared with the HCC on demand through mail
   - HCC requests data for a particular patient

   - **6b** Homecare nurse uploads data manually onto the HCC system
   - HCC contact center
   - Patient helpline

   - HCC requests data for a particular patient
   - Homecare nurse uploads device data onto the HCC system
   - Homecare center (HCC) physicians' feedback
Digital service design opportunities
For the various stakeholders involved in delivering care

Onboard all stakeholders taking care of the patient on a single platform that provides access to the care plan to all and is updated in real-time.

For the patient

- Deliver medications at home
- Health tracking and monitoring through wearables, devices and apps
- Enable virtual consultation and appointment scheduling
- Enable homecare services with nurses and homecare teams visiting home to deliver care
- Capture of patient and device data for trend analysis
- Enable online payments, and service and supplies requests
- Enable diagnostic services at home
- Enable alerts and notifications
- Real-time delivery of care and assurance to patient that his/her health is in the hands of a high-quality care team

Digital solution components

Tablet app for oncologist
Wearable and mobile app for patient
Mobile apps for nurses and homecare providers
Contact center support
Web
Customer relationship management
Networks
Social media
Points of presence (hospitals, clinics, homes, and more)
Digital paid media
Chat, emails, SMSes, and more

Enabling holistic care

- High-quality care based on the prescribed care plan
- Patient is connected with the healthcare team who both monitor and provide care
- Therapy adherence and health progress as per the care plan/treatment protocol
- Eases patient travel
- Eases organizing and scheduling appointments and schedules, and obtaining medication
- Data for predicting patterns and trends to create personalized treatment plans

In compliance with HIPAA, information sharing is monitored and each stakeholder is paid based on the service rendered using a subscription-based payment model offered by life sciences enterprises. In this way, life sciences enterprises can monetize the service packages while providing holistic care to the patient.

Each stakeholder has the complete picture of the patient outcome based on his / her role in care delivery.

High-quality care based on the prescribed care plan
Patient is connected with the healthcare team who both monitor and provide care
Therapy adherence and health progress as per the care plan/treatment protocol
Eases patient travel
Eases organizing and scheduling appointments and schedules, and obtaining medication
Data for predicting patterns and trends to create personalized treatment plans
Discover the digital service design opportunity

For those who embrace the digital service design revolution, the dividends will certainly be high. Consider these – the connected health and wellness device market is projected to hit a whopping USD612 billion by 2024* and the virtual healthcare market is expected to reach USD3.5 billion by 2022.**

While there are several digital solutions available in the market today that offer standalone services to patient, a holistic solution is missing.

Service design looks at things entirely from the user’s point of view: their goals, actions, constraints, and obstacles throughout the user journey. It then adopts a systematic and holistic approach to satisfy key user needs; in healthcare’s case, the patient’s need for access, control, value, convenience, and enjoyment. This is accomplished by strategically creating new and engaging experiences across multiple touchpoints – a touchpoint being any interaction between the user (patient) and other stakeholders (doctors, nurses, pharmacists, and family). In essence, service design looks at all touchpoints, not just as isolated experiences but collectively as a whole. Therefore, a service design is built around four core elements:

1. **It’s holistic:** Considers environments beyond the user device
2. **Entails co-creation:** Involves all actors/stakeholders in the service design process
3. **Employsequencing:** Visualizes the service as a series of interrelated actions
4. **Applies evidencing:** Visualizes intangible services in terms of physical artifacts

It involves all the stakeholders in the innovation process and creates value for everybody involved – the patient, the healthcare provider, the pharmacists, and the caregiver.

---

The service design process

<table>
<thead>
<tr>
<th>Assess existing touchpoints</th>
<th>Formulate service attributes</th>
<th>Develop service design blueprints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand and communicate existing service experiences</td>
<td>Strategically generate a differentiated experience across touchpoints</td>
<td>Prototype and validate services with internal and external users</td>
</tr>
<tr>
<td></td>
<td>Develop new service propositions</td>
<td>Downstream iterative development</td>
</tr>
</tbody>
</table>
Digital service design components

<table>
<thead>
<tr>
<th>Patient information</th>
<th>Record, track, share and research health information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient engagement</td>
<td>More focused and timely diagnosis and therapy by creating an ecosystem of partners, caregivers, healthcare professionals and patients</td>
</tr>
<tr>
<td>Remote monitoring</td>
<td>Devices that allow patients to self-monitor their health and relay the data to the physicians, who interpret the data and recommend a treatment course – the entire process is virtual</td>
</tr>
<tr>
<td>Patient adherence</td>
<td>Medication reminders with mechanism for 'glowing bottles or devices' to indicate it's time for medication, alerts to the physician and caregivers in case of failure to adhere to medication schedule, schedule appointments, e-visits, lab test reminders, prescription renewals</td>
</tr>
</tbody>
</table>

Touching every touchpoint

<table>
<thead>
<tr>
<th>Patient administration</th>
<th>Lab test order placed by physician</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis post the case history check</td>
<td>Second opinion / referrals</td>
<td>E-prescriptions to dispense medicines</td>
</tr>
</tbody>
</table>

Delivering service differently

Service design addresses the inherent industry challenges in healthcare and life sciences – being fragmented, disease-focused, reactive and episodic, disconnected and unintelligent. It offers an opportunity for them to become:

- **Democratized**: Full access to care and data
- **Real-time**: Care happens all the time and everywhere
- **Collaborative**: Anyone can be a care provider and everyone works together to provide care
- **Personalized**: Complete picture of the patient for individualized care solutions

For healthcare providers, it is an opportunity to:

- **Reduce healthcare costs**
  - Reduce healthcare costs
  - Accurately forecast hospital occupancy
  - Predict and reduce hospital readmission rates
  - Move care to lower cost settings, including homes
  - Ensure better patient adherence and treatment compliance

- **Enhance patient experiences**
  - Improve patient health literacy
  - Increase self-management
  - More proactive practitioners interventions

- **Improve healthcare outcomes**
  - Leverage automated and intelligent care solutions
  - Leverage remote closed-loop patient monitoring systems
  - Improve population screening, diagnosis, and literacy
  - Increase access to healthcare practitioners
  - Reduce medical errors through information transparency
  - Coordinate and integrate care
For life sciences, it is an opportunity to:

**Reduce healthcare costs**
- Foster faster and accurate clinical decisions
- Increase wellness management

**Enhance patient experiences**
- Improve patient health literacy
- Increase self-management
- Empower patients to participate in their own healthcare decisions

**Improve healthcare outcomes**
- Improve population screening, diagnosis, and literacy
- Incentivize and drive quality
- Introduce automated and intelligent care solutions
- Introduce remote closed-loop patient monitoring systems
- Enhance device features and capabilities
- Predict health conditions

See how the opportunities fall in place with Infosys
We begin at the fuzzy front-end in designing new service design solutions

<table>
<thead>
<tr>
<th>1</th>
<th>Disruptive insights</th>
<th>2</th>
<th>Future vision</th>
<th>3</th>
<th>Experience roadmap</th>
<th>4</th>
<th>Experience design</th>
<th>5</th>
<th>Continuous delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital experience strategy</td>
<td>Customer journey mapping</td>
<td>Design and development services</td>
<td>Channel experience</td>
<td>Usability research and testing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Stakeholder workshops
- Experience visioning
- Future user stories
- Ideal user journeys
- Service design
- Service blueprints
- Ethnographies
- Plotting user lifecycles
- Ideal and future user journey
- Voice of the user
- Voice of the brand
- Plotting the moments of joy, anxiety, frustrations and truth
- IA and PD
- Interactive prototypes
- Functional specifications
- Responsive design
- NPD
- Web applications
- Mobile applications
- Contact center guides
- Kiosk designs
- Wearables
- Social design
- Heuristic reviews
- Cognitive studies
- Remote testing
- Mobile device testing
- Mockup tests with users