Customer understanding and compassion were center-stage for organizations during the height of the COVID-19 pandemic. That’s because they were forced to look at things differently. And the need to rethink how companies treat customers has not — will not — go away; buying habits have changed.

Executive leaders can respond by extending the concept of “digital twins,” common in manufacturing, to drive revenue, engagement and loyalty, increasing efficiency while also feeding insights into new product and service development.

A Digital Twin of a Customer Predicts the Best Consumer Experience
by Michelle Duerst, Christine Colborne and Alfonso Velosa

Automakers use the Internet of Things to collect data and apply artificial intelligence — including machine learning — to model what is likely to happen in the future. Just as a digital twin of an engine can be used by engineers for predictive maintenance, a digital twin of a customer can be used by different departments within an organization (e.g., product management or customer experience teams) to simulate and anticipate customer behavior (see Figure 1).
A digital twin of a customer is more than the concept, familiar to marketing executives, of a "persona." Instead of merely collecting data points, it provides context and predictions of future behaviors. A digital twin of a customer is more than the concept, familiar to marketing executives, of a "persona." Instead of merely collecting data points, it provides context and predictions of future behaviors. It uses both online and physical interactions and it’s dynamic, updating as new information comes in and recognizing that a single person can exemplify more than one persona ... and those personas may shift over time. The twin collects enough data to accurately simulate the customer experience — moving them to more positive consumer-business relationship stages by fulfilling expectations and providing unexpected moments of delight.

An impressive 80% of Netflix’s stream time is achieved through its recommender system.³ Netflix also creates a user experience to improve retention rate, which translates to savings on customer acquisition (estimated $1 billion per year as of 2016).

But you don’t have to be a Netflix or a Google to improve consumer experience — and, digital twins of customers can apply to many more situations and industries.

With notable shifts in how people want to spend their money (global e-commerce hit $26.7 trillion in May 2021⁴) alongside in-person experiences (e.g., a visit to a store), your company must build an understanding of your customers’ evolving motivations.

- How do they feel about their relationship with your organization?
- How have their expectations changed?
- How do they want to buy products and services?

Meet the Digital Twin of a Customer

Consumer confidence is key for many industries.⁵ And it’s not just about someone having confidence in a brand but having confidence in themselves as consumers. A digital twin can help businesses improve that experience and retain loyalty while also identifying the friction points that lead customers to defect to competitors.
Some may think it’s just marketing but there’s more to it than that: The concept builds on the capabilities of the CX (customer experience) CORE (customer, organization, relationship, experience) model, which creates lasting and valuable relationships with people and groups. This is combined with a business strategy, total experience (TX), for creating superior shared customer and employee experiences.

- **CX CORE** creates a persona for an individual, group or machine to provide more insight into the “right” TX for the persona.
- **TX** maps out a superior shared experience journey for customers and employees, moving them to better relationship stages.

The digital twin synchronizes with its physical representation using real-time data inputs and event-stream processing, where action is taken on a series of data points originating from a system that continuously creates data (see Figure 2). This virtuous cycle informs and affects the CX CORE persona and TX strategy.

**Dynamic Customer Relationships and Superior Shared Experiences**

The CX CORE (see Figure 3) acts as an organizing principle for whatever role-based or functional technologies (examples include digital commerce and location-based services) that you may use to manage your customer relationships for their entire life cycle. Here’s how it works:

- The customer in the center is surrounded by the different stages (forward, backward, start, stop) of their relationship with an organization, which frame the experience — helping you understand what’s happening with the customer and providing information about what actions to take.
- The experience membrane uses customer insights to drive the interaction principles (etiquette) that govern the two-way relationship. Sources come from social media, contact preferences, prior behavior and other relevant data.
- The intelligent coordination, using principles from the experience membrane, delivers the customer experience (digital plus physical interactions) across the organization.
- Critically, it’s a partnership between people and technology, as not all experiences are automated, nor entirely informed by analytical insights.
- The supporting base of capabilities provides people, processes and technology enablers for customer understanding, the experience membrane and intelligent coordination.

In the CX CORE model, intelligent coordination bridges functional silos to deliver a relevant set of products and services — people and digital, in a coordinated fashion, designed for whatever stage of the relationship the customer is at — in as close to real time as is feasible. Traditionally, customer data is not meaningfully shared and coordinated across organizations. The digital twin of a customer fits into the analysis and modeling of the information continuously, and, crucially, it’s visible to the organization and the consumer.
Figure 2. Customer Insights Cycle

CX CORE

Total Experience

Digital Twin of a Customer

Source: Gartner
**How Dynamic Personas Map Trigger Events**

CX CORE defines the “who” and the “why” behind dynamic personas. These personas identify “trigger events” that would cause a customer to have negative, neutral or positive experiences during their interactions with a business. They also help you create customer-journey roadmaps (see Figures 4, 5 and 6).

**Connecting Total Experience to CX CORE**

Total experience (TX) interlinks CX CORE persona insights with these experience disciplines:

- **Customer experience (CX)** understands several dimensions (wants, needs, expectations, beliefs, feelings and past experiences).
- **Employee experience (EX)** increases job satisfaction, retention, skill level and productivity.
- **User experience (UX)** combines business objectives, user needs and best-practice design to optimize digital products.
- **Multiexperience (MX)** interacts across multiple touchpoints (mobile apps, web, augmented reality/virtual reality, wearables).

These techniques drive greater customer and employee confidence, satisfaction, loyalty and advocacy. (See Figure 7).

Traditionally, each experience is strategized, created and maintained in silos. TX changes this approach: It does not make one experience better — instead it continuously refines customer experiences.

Sydney’s persona can be tracked and evaluated (tools she uses, stylist she engages with, frequency of buying habits).
Figure 4. Sydney’s Dynamic Persona (Example)

<table>
<thead>
<tr>
<th>Persona Story</th>
<th>Name</th>
<th>Sydney</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Biography</td>
<td>Gen-Z, Millennial budget and trend-conscious</td>
<td></td>
</tr>
<tr>
<td>Hypothesized Jobs</td>
<td>Wants to stay current on hair/beauty trends</td>
<td></td>
</tr>
<tr>
<td>Persona Details</td>
<td>Age, Income, Education</td>
<td>19, college student, follower of major influencers</td>
</tr>
<tr>
<td></td>
<td>Daily Responsibilities</td>
<td>Student, part-time work in community</td>
</tr>
<tr>
<td></td>
<td>Preferences</td>
<td>Social proof from other buyers</td>
</tr>
<tr>
<td></td>
<td>Key Attributes</td>
<td>Looking for expert advice</td>
</tr>
<tr>
<td></td>
<td>Functional and Emotional Needs</td>
<td>Concerned about quality, but needs to be budget-conscious</td>
</tr>
<tr>
<td></td>
<td>Key Challenges</td>
<td>Wants to visualize what she would look like before she commits to a trend</td>
</tr>
</tbody>
</table>

Source: Gartner

Figure 5. Sydney’s Trigger Events (Example)

<table>
<thead>
<tr>
<th>Negative</th>
<th>Neutral</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Breach of trust</td>
<td>• Confidence</td>
<td>• Proactive protection</td>
</tr>
<tr>
<td>• Unfulfilled expectations</td>
<td>• Fulfilled expectations</td>
<td>• Concierge support</td>
</tr>
<tr>
<td>• High effort/friction</td>
<td>• Low effort/friction</td>
<td>• No to minimal effort</td>
</tr>
<tr>
<td>• Low perceived value</td>
<td>• Perceived value</td>
<td>• High value</td>
</tr>
</tbody>
</table>

Source: Gartner

Figure 6. Sydney’s Journey Roadmap (Example)

Sydney cannot find products that will help her get her latest trend looks
Provide AI tools to show what she would look like with new color
Provide 1:1 consultation with a hair stylist

Source: Gartner
A marketing campaign is triggered based on events, e.g., her last purchase. A digital twin of a customer goes further and looks at what relationship stages she has and what additional products and services should be offered to move her to a more positive customer experience:

- **Negative stage (color didn’t work for her):** She could book an appointment with a stylist who can identify how to correct the issue and explain each step of the coloring process.

- **Neutral/meeting expectations:** She could buy a personalized colored conditioner to extend the color.

- **Positive/exceeding expectations:** She could receive a personalized update on latest trends and how to achieve them based on her past interactions/purchases.

The result? Sydney benefits from the use of a digital twin, while the business gains additional customer-satisfaction insight.
Next Level: Digital Twin of a Customer Extends CX CORE

This is a cycle: The digital twin of a customer shapes how the organization should interact with the customer (CX CORE’s membrane) and creates/refines a new TX strategy while continuing to learn from the actual TX interaction history.

Trust Is Vital to Success

The concept is not just about accumulating data points. Transparency about what is being collected and how it will be used are essential elements to maintain customer trust. Privacy-by-default should be a best-practice approach:

- **Absolute transparency:** Accessible, understandable notices, statements, communications.
- **Choice:** Modern consent and preference management.
- **Access level:** Select from a variety of privacy rights.

How to Develop a Digital Twin of a Customer

<table>
<thead>
<tr>
<th>Immediate Action</th>
<th>Short-Term Planning</th>
<th>Long-Term Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT should audit your customer data quality and sources of customer insight.</td>
<td>Build a profile of customer behavior and model what their next actions could be for a particular customer journey.</td>
<td>Create a digital twin of a customer “tiger team” to discuss the implications of this concept on operational processes and the business model.</td>
</tr>
<tr>
<td>Extend CX CORE personas by using a digital twin of a customer to represent models for individual customers based on the personas.</td>
<td>Speak to your customers about data transparency and develop an understanding of what physical and digital interactions they need from your organization.</td>
<td>Regularly speak to your team about privacy regulations and laws and work through how to track dynamic personas and their relationship stages.</td>
</tr>
<tr>
<td>Use TX interactions to populate the digital twin of a customer and use evolving models to shape future interactions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify the value a digital twin brings for the customer, not just for the organization.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Gartner

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1. Life Reimagined: Mapping the Motivations That Matter for Today’s Consumers, Accenture
2. Cheat sheet: What is Digital Twin?, IBM
3. Deep Dive into Netflix's Recommender System, Towards Data Science
4. Global e-commerce jumps to $26.7 trillion, COVID-19 boosts online sales, UNCTAD
5. Consumer Confidence: A Killer Statistic, Investopedia
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