

Immersive Retail

Sector Innovation Series



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What is Immersive Retail?

In this report we will be looking at how retail channels can engage in new, innovative ways to provide immersive experiences to enhance traffic and develop more opportunities to increase revenue. The retail sector is undergoing a significant amount of disruption from many different forces, from technology to economics to demographics. Retail companies must respond to these challenges head on by turning these into opportunities to win new customers and transform how customers think about the shopping experience. Gone are the days when retail stores can rely solely on advertisements to bring in people to their stores.

Competitive price and service are baseline expectations from shoppers who have plenty of choices from where to make their purchases. Going to the store needs to be an experience – an experience that delights the shopper so that they have a reason to come back. In an immersive shopping experience, the customer feels like the store environment is one that is designed for them and can impact their quality of life in a very positive fashion.

Digital Gen Z and Millennials

One specific factor that is changing the way stores attract customers is the digital demographic. This is the Gen Z and Millennial population who have grown up fully digital and have largely done their shopping online. These consumers have lived an Internet lifestyle where digital experiences are the norm and also a measure of the level of engagement and brand loyalty. Retail environments must borrow from these online digital experiences and translate them into blended realities in stores.

Interactions Not Just Transactions

One of the key guiding design principles for immersive retail experiences is to shift from performing transactions to delivering interactions for shoppers. By designing interactive experiences, shoppers can engage in a two-way in-store dialog that envelops them in an immersive environment. Instead of merely browsing through shelves of products, the store comes to life with creative touchpoints where the shopper is invited to learn more about what may delight them inside.

Shopper's Journey

To begin designing these immersive experiences, consider the shopper's journey. What are the pain points in the current shopping visit to the store? Where are the opportunities to transform the journey into something completely new? "Key moments" is a phrase often used to describe designing digital online experiences. Analogously, key moments can be identified in the time that the shopper spends in the store. These key moments can be generated for different shopper profiles to add a metalevel of a personalized touch and immersive experiences.

Studies by the Capgemini Research Institute identified key moments and pain points in the shopper's journey. The illustration below depicts the retail in-store journey and indicates touchpoints where immersive experiences can be delivered.

The major phases of a shopper's journey can be described as follows¹:

- **Identification** – The point the shopper begins their journey in the store.
- **Product Information** – As the shopper browses, product information is presented.
- **Product Selection** – Make the best purchasing decisions.
- **Store Navigation** – Finding products can be a time-consuming part of the journey.
- **Self Check-Out** – One of the major pain points is waiting in check-out queues.
- **Payment** – The shopper completes the journey with the purchase.

In the next sections, we will present Minimum Lovable Product (MLP) innovation concepts to enable immersive experiences for customers in the shopper's journey. The concepts will address the pain points identified by Capgemini Research Institute as well as explore opportunities to deliver interactive touchpoints in-store. The research done by Capgemini has discovered that customers are more likely to return to the store when technology enhances their shopping experiences in-store.

To begin designing these **immersive experiences**, consider **the shopper's journey**.



A 59% majority of consumers indicated they would shift to a store that provides these types of positive, immersive experiences.²

The MLP concept architectures provide a blueprint for blue sky innovation for immersive retail. The concepts are organized into two major components:

- **Digital Shopper Assistant** – The Digital Shopper Assistant drives interactive engagement with the shopper. The Assistant is pervasive in-store as the shopper goes through their visit. For example, the Assistant takes the form of a digital mobile app and also an in-store display. The shopper has a seamless interaction between the two interfaces.
- **Smart Store Operations** – The backoffice operations in a smart store play an important role in enabling immersive experiences. The Smart Store MLP concept covers some ways to implement intelligent inventory and replenishment. One key factor in delivering immersive experiences is to preserve a continuous journey that is not disrupted by lack of product in-store. In addition, using backoffice machine learning can assist the shopper explore more meaningful product options and also make better selections.

Digital Shopper Assistant

The Digital Shopper Assistant is the customer's guide in the immersive retail experience. The Assistant provides new opportunities for a customer's interaction in the in-store environment by encapsulating context, intelligence and augmented reality in a unified, seamless digital persona. The Assistant develops a digital relationship with the customer learning about their preferences, their shopping habits and even becoming aware of special occasions that need extra attention. The Assistant is more than just a mobile app. The Assistant is an experience enabler that adapts to retail dynamics in-store and surfaces information to customers in a manner that creates more engagement and incentive to visit the store.

Retail Service Avatar

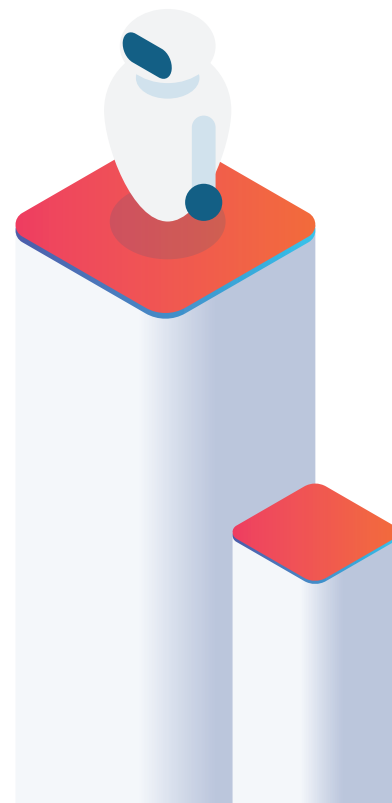
The first component of the Digital Shopping Assistant is the Retail Service Avatar. Avatars are a concept usually referred to in a digital context but avatars can also be a powerful agent in a hybrid environment where the physical world and digital channels converge into one.

The Retail Service Avatar is more than just a presentation, it is a digital being that is powered by AI and machine learning. The Retail Service Avatar uses AI to get a sense of the physical world and machine learning to develop deep insights about the retail data contexts that are the foundation for immersive experiences. The Retail Service Avatar Architecture is presented here and consists of elements to deliver immersive retail experiences. The architecture consists of three major layers, each with a specific set of responsibilities for making the Avatar come to life.

- The mobile presentation layer manages the surfacing of immersive interactions.
- The mobile middleware enables a responsive and intelligent Avatar.
- Cloud computing and data form an integration layer to synthesize information from a variety of sources, such as affiliates, at a high velocity and at scale.

The architecture features the following capabilities:

- Offline-first design to support disconnected scenarios.
- Event processing capabilities via publish/subscribe channels.
- Data synchronization for delivering context information reliably and at high velocity.
- AR overlays to present digital information layers while in-store.



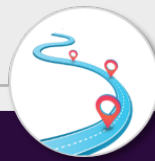
The **Retail Service Avatar** is more than just a presentation, it is a digital being that is powered by **AI and machine learning.**



Store Dashboard



Store Catalog



Store Navigator



Store Checkout

Natural language processing

Computer Vision

Machine Learning

Event Processing

Offline Mode

AR Overlays

Data Sync

Pub/Sub



Cloud Computing

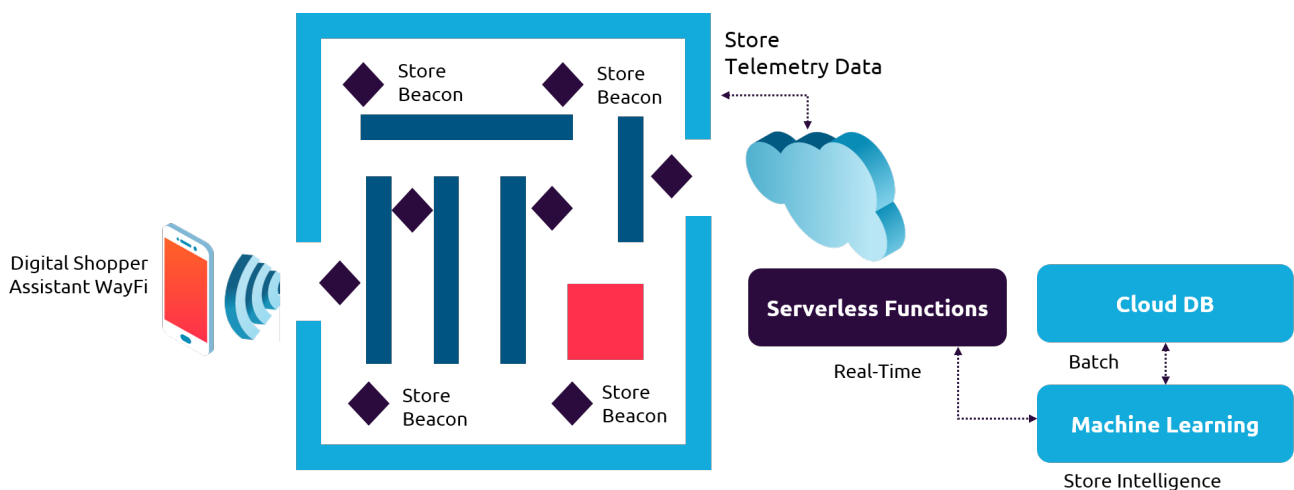


Cloud data

Retail WayFi

The second subsystem in the Digital Shopper Assistant is a wayfinding mechanism that uses a mesh network in-store to provide location-based experiences. The mesh network is comprised of Bluetooth Low Energy (BLE) beacons that broadcast location data to WayFi services running in the Digital Shopper Assistant. WayFi services can then use store map data to determine the location of the shopper and present store navigation details in the Assistant.

The data generated by WayFi can be used by the Avatar to render augmented reality overlays, such as wayfinding directions or product information overlays depending on where the shopper is in the store. The AR overlays provide a rich set of new possibilities for creating and delivering interactive immersive experiences that are location-based.³



The store telemetry produced with this mesh network can be aggregated via a gateway to provide data for shopper and store analytics. The telemetry can also potentially be used to deliver personalized guided store visits to shoppers based on their preferences, shopping history and store promotions. This personalization can maximize the value of the store visit for both the shopper and the retailer

Use Cases

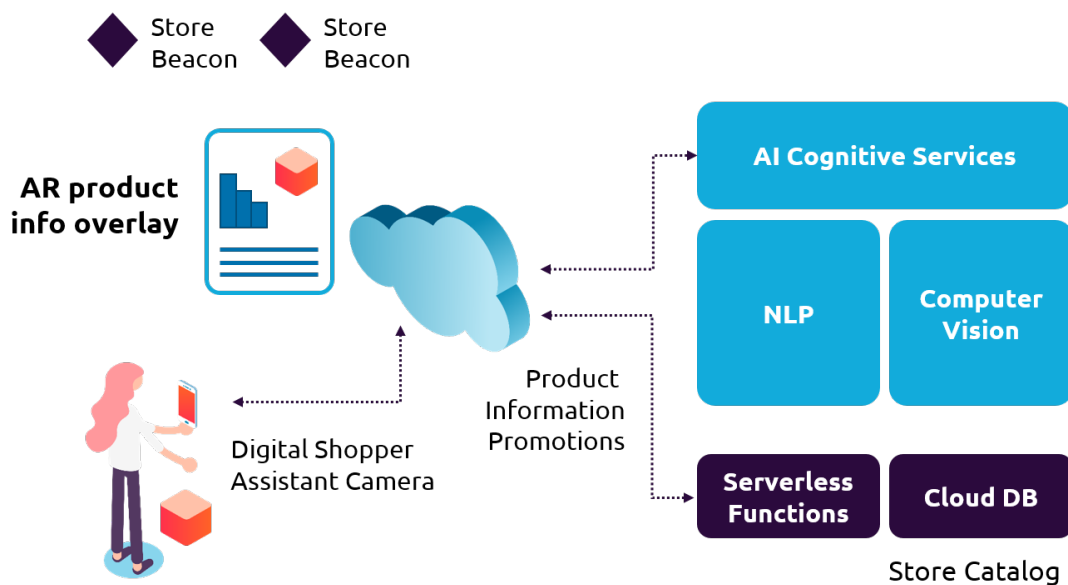
In this section several use cases are presented to illustrate how the Avatar and WayFi work together to deliver experiences in the Digital Shopper Assistant. These use cases are centered around the shopper's journey and the specific key moments that must be realized in order to eliminate friction, pain points and increase levels of immersion and delight. The general sequence between architecture components is described to get a sense for the implementation details that are involved.

Product Information

In the first use case the shopper is visiting the store for the first time and has installed the Assistant before the visit. Not being familiar with the store layout, the shopper uses the Assistant to begin to understand where products of interest are located in the store. Even before the visit, the shopper may ask the Assistant about certain products and availability at a specific store. The Assistant can plan out the store visit and have location map data ready to speed up store navigation for the first-time visitor.

The Avatar and WayFi work together as the shopper enters the store to identify the shopper while preserving privacy using a token-based mechanism. The Avatar also uses information from WayFi to present augmented reality overlays to guide the shopper throughout the store. This can be a much more personalized and immersive approach to providing wayfinding in-store compared to digital signage, especially for larger environments.

As the shopper makes their way through the store and looks at products, the Assistant can provide AR overlays showing more interactive product information. The overlays may include more detailed information than is available via displays, such as sustainability data.



Store Navigation and Product Selection

Product selection is one of the most time-consuming activities in-store. It's also one of the biggest factors in the suspension of immersion for the retail shopper. The shopper has to spend cycles looking and filtering product information to make the right choice. With the Assistant, this product selection information is delivered and presented to the shopper in immersive experiences. For example, imagine the following interaction between the shopper and the Assistant while in-store⁴:

Shopper: I'm looking for a blue polo shirt that's made of 100% cotton.

Assistant: There are three selections available in the men's department. Would you like me to guide you?

Shopper: Yes but first can you give me a preview and price information?

Assistant: These are the options available. (The Avatar Store Catalog shows the options.)

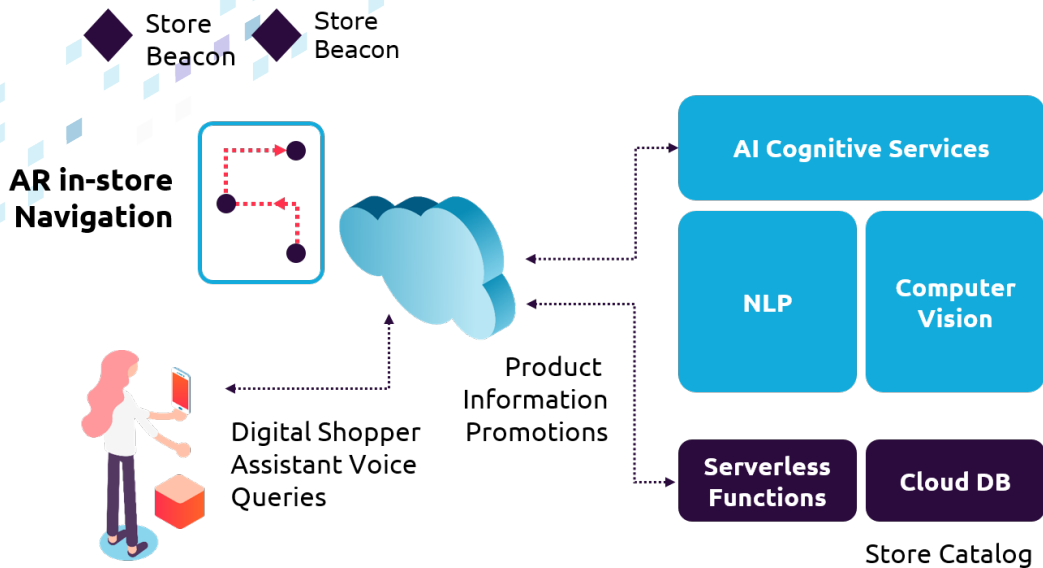
Shopper: Take me to Brand X first.

Assistant: Of course, my pleasure. (The Avatar starts an AR overlay showing visual wayfinding cues for the shopper to the Brand X polo shirt location in the store.)

Shopper: I really like this shirt. I also need some golf shorts.

Assistant: Check your dashboard, I've listed promotions on shorts that may be of interest. (Context-based promotion notifications are pushed via Avatar event processing.)

Assistant: Make your selection and I'll guide you to the location in the store.

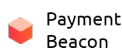
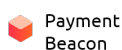


No-Touch Checkout and Payment

In the final part of the shopper's journey, the customer goes through the checkout process in-store. To preserve the immersion, the customer does not have to wait in a checkout queue. Instead, the customer walks through a checkout tunnel where sensor readers are picking up RFID tag signals from the shopper's merchandise. The Avatar Store Catalog performs a real-time price check on these items and synchronizes pricing data or discounts.

Upon confirming purchases and subtotal, the Avatar Store Checkout determines if any rewards can be applied to the purchased items. If rewards are available, the Assistant can present the amount that can be applied and asks the shopper how many rewards, if any, should be applied to the checkout total. Payment is finally made for the total on the purchase from the Avatar Store Checkout component and a payment beacon. This seamless, continuous checkout flow is a critical completion step in the immersive retail experience.

RFID Readers



RFID Readers

Touchless Checkout

Smart Store Operations

To support delivering immersive experiences, smart store operations can provide the responsiveness required for real-time contexts in-store. Smart store operations increase the velocity with which data can be leveraged for creating personalized touchpoints as well as spotting trends happening in-store throughout the sales cycle. The smart store is a dynamic environment in which the shopper can expect a different, unique experience on every visit which increases the motivation for shopping again. A shopper surprised with an unexpected offer enhances the delight on each visit.

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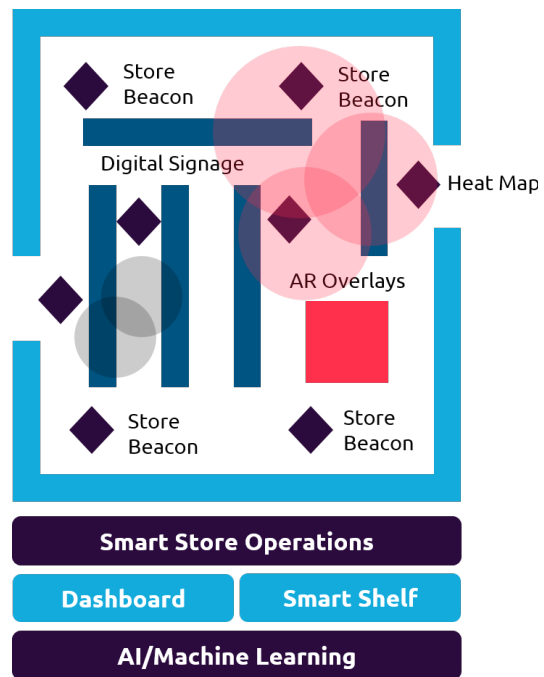
The backoffice processes for a smart store also anticipate and even predict behaviors to better capitalize on the time shoppers spend in the store. This lookahead capability also contributes to immersive experiences since shoppers will feel like the store is somehow knowing their future. The capability is not so much a result of some magic but the more powerful leverage of data and machine learning to anticipate shopper behavior as well as demand for products. Making this data and backoffice processing available to in-store automation represents a significant opportunity to compete with digital, online shopping channels. In fact, retailers with smart stores will integrate their digital channels with in-store experiences to deliver omni-channel shopper journeys.

Smart Store Dashboard

The smart store dashboard is the command central for managing and delivering immersive in-store experiences. The dashboard enables store operations to have a visual, dynamic view of the store environment over time. The dashboard raises alerts to trends in the store that represent an opportunity for a promotion that would maximize that day's revenue potential. One of the mechanisms smart stores use to support this capability are heat maps. Heat maps are generated by incorporating data collected via WayFi and the Avatar to present visualizations of what is happening in the store.

For example, heat maps may show that a certain area of the store is receiving a significant amount of traffic. In that scenario, smart store operations would adapt immersive experiences to better capitalize on that dynamic. Perhaps AR overlays could be updated to indicate new offers on products located in that part of the store. Digital signage on smart shelves in the store could also reflect the shopper activity to show media that is designed to draw attention for specific products or offers in proximity.

AI and machine learning are two key enablers for smart store operations. Machine learning can be used to predict, classify and detect patterns and present those outcomes in visualizations on the dashboard. Working together, smart store operations and machine learning can make better real-time decisions to adapt to store activity and maximize value potential on a daily basis.



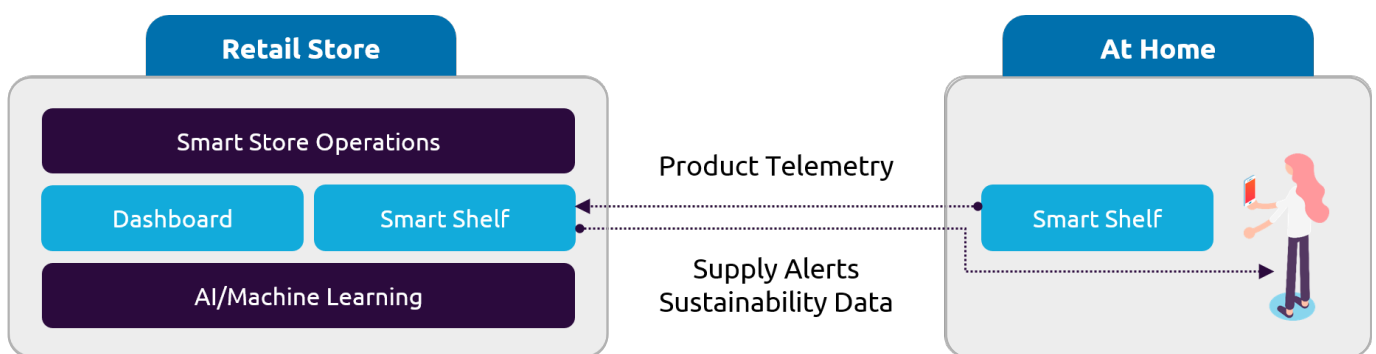
Smart Shelf

The Smart Shelf is an extension of the smart store. In fact, the Smart Shelf does not need to be limited to store placement. Smart stores can offer customers a service that helps to manage supplies and orders for products that need to be replenished, such as most consumable household goods. The Smart Shelf can even predict when replenishment needs to take place for a given customer based on previous consuming behaviors of a particular product. Smart Shelf also relies on an intelligent machine learning capability to make these personalized replenishment recommendations. The Smart Shelf can even communicate with the Avatar to raise alerts on the Digital Assistant to let the customer know that they are running low on a given product. The customer can then decide whether or not to order a resupply.⁵

In this way, the Smart Shelf expands the immersive experiences possible for retail environments. The device

enhances the relationship and trust between the physical store and the customer. The customer can walk in to the store with confidence that their resupply of their product is waiting for them. The immersive experience in this case has extended beyond the walls of the retail store.

Another important way the Smart Shelf service can build a relationship with customers is to share sustainability data on the products being used. Alternatives may be provided to give the customer options in choosing products that are better suited for sustainability. They can view this information in Smart Shelves in-store as well as Smart Shelf devices customers have at home. Having the sustainability data available readily on the Smart Shelf device avoids the need to open a separate app to evaluate the options. In research done by Capgemini Research Institute, sustainability is becoming increasingly important in brand promises to customers. Retail environments that make this information easily accessible to customers will win not only trust but also valuable relationships with those that care about sustainability.⁶

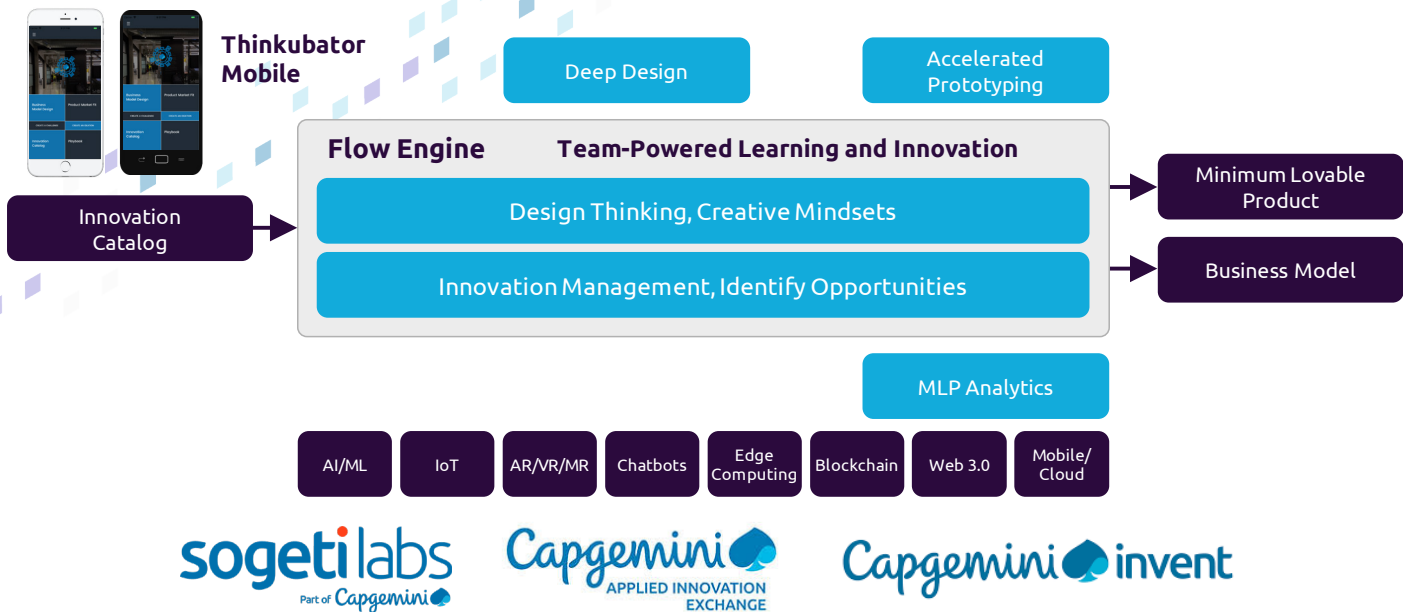


Thinkubator Business for Immersive Retail

Immersive Retail ventures require an assembly of the right talent, the right technologies and a repeatable, high-velocity approach to innovation. Whether it be to develop internal innovation capabilities, seeking to develop a partner ecosystem or launch entirely new brands, Immersive Retail ventures need to be supported by a robust enterprise innovation platform that enables radical market-centric collaboration. SogetiLabs developed the Thinkubator Business enterprise innovation platform and services to partner with innovative ventures seeking these capabilities. Ventures can leverage the Capgemini innovation ecosystem to accelerate time-to-value creation.

Thinkubator Business is a design-oriented corporate accelerator which applies a scalable and sustainable operating model for enterprise innovation that delivers rapid business value in the form of innovative Immersive Retail products, services and solutions. Thinkubator Business:

- Enables individuals with innovation techniques and mindsets.
- Empowers teams through a learning and innovation platform.
- Deploys innovation pipelines directly into the enterprise.



Thinkubator Business Platform and Ecosystem for Immersive Retail Innovation

Thinkubator Business is powered by a highly customizable team-based enterprise innovation platform with

- An artificial intelligence and machine learning toolkit for deep design,
- Software factory automation for accelerated prototyping,
- And an integrated innovation flow engine to deliver value fast.

Thinkubator Business combines design thinking with innovation management to align creative production with strategic growth opportunities to achieve real business impact. With innovation management, new Immersive Retail ventures can:

- Apply techniques for creating vision,
- Develop strategies to accelerate product/market fit,
- Incorporate proven methods for designing innovative business models,
- Implement innovation monitoring and tracking mechanisms.

Thinkubator Business can bring together the talent from the Capgemini innovation ecosystem to successfully meet the challenges and opportunities of the new Immersive Retail venture.

- **SogetiLabs** – Sogeti consulting and engineering think tank for applying innovation and leveraging disruptive technologies to deliver business value.
- **Capgemini Invent** – Capgemini strategy and business design firm with deep and broad sector-based experience.
- **Applied Innovation Exchange** – Capgemini innovation ecosystem that facilitates connections with startups, universities, sector experts and technology partners across a global network of locations.

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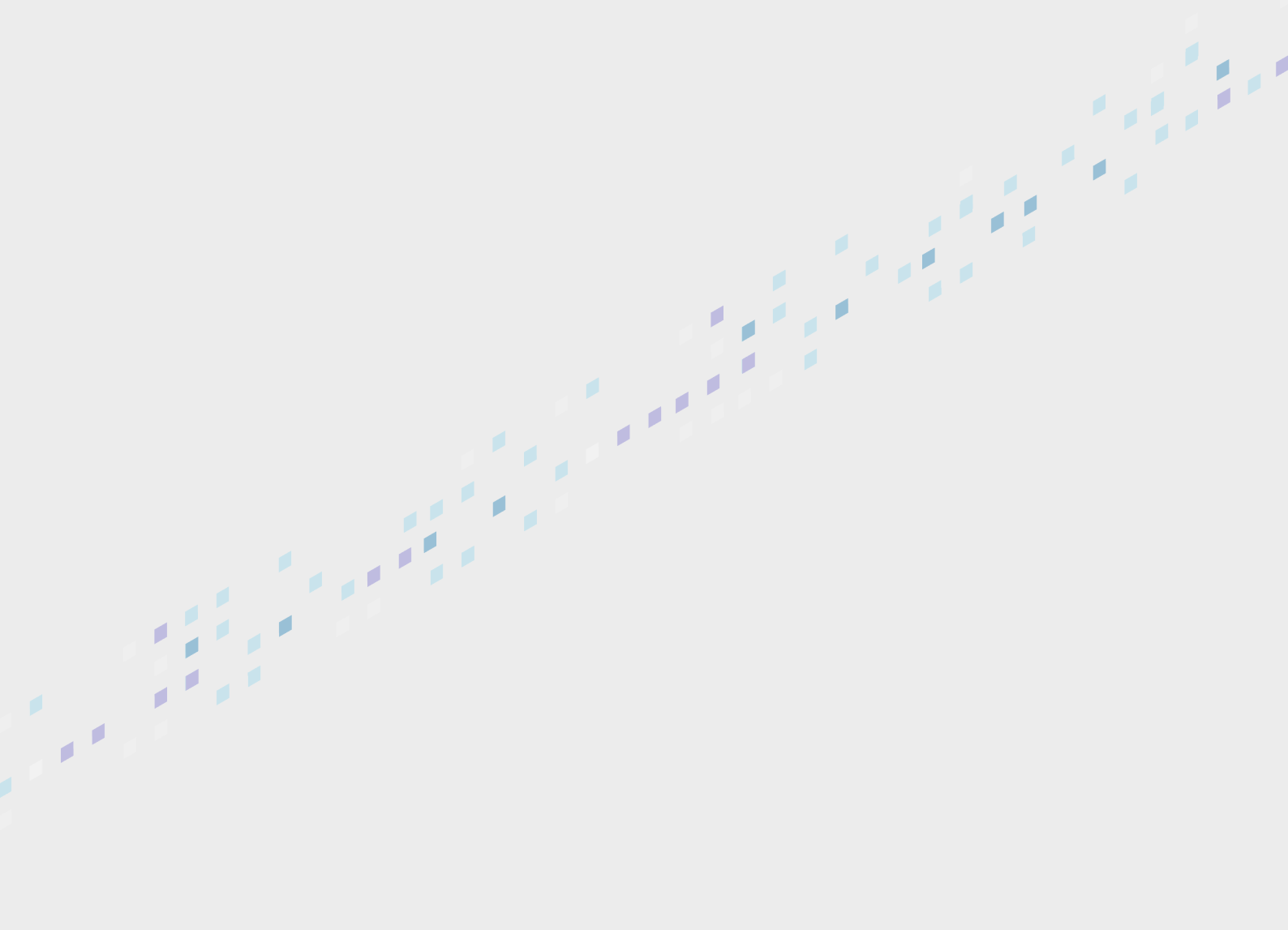
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Footnote Index

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About SogetiLabs

SogetiLabs is a network of technology leaders from Sogeti worldwide. SogetiLabs covers a wide range of digital technology expertise: from embedded software, cybersecurity, AI, simulation, and cloud to business information management, mobile apps, analytics, testing, and the Internet of Things. The focus is always on leveraging technologies, systems and applications in actual business situations to maximize results. SogetiLabs also provides insight, research, and inspiration through reports, articles, presentations, and videos that can be accessed on the SogetiLabs website www.labs.sogeti.com

About Sogeti

Part of the Capgemini Group, Sogeti operates in more than 100 locations globally. Working closely with clients and partners to take full advantage of the opportunities of technology, Sogeti combines agility and speed of implementation to tailor innovative future-focused solutions in Digital Assurance and Testing, Cloud and Cybersecurity, all fueled by AI and automation. With its hands-on 'value in the making' approach and passion for technology, Sogeti helps organizations implement their digital journeys at speed. www.sogeti.com