

**Globant** ▶

The delightful world of

**Invisible**

*experiences*



# Introduction

In today's world, our eyes are perpetually fixed on screens—smartphones, computers, and televisions pave the pathways to our digital engagements. This constant connection has led to new ways of interacting with technology.

Some of these methods draw us even deeper into screen-based environments, offering immersive experiences. Others, however, free us from looking at screens altogether, enabling us to interact with technology in a seamlessly unobtrusive manner, which can be described as “**Invisible Experiences**”, erasing the boundaries between the digital and physical worlds.





## Agustin Huerta

SVP Digital Innovation  
at Globant

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In an era where digital and physical realities merge, we're moving towards a future where our thoughts alone can command the digital world, transforming overt actions into seamless, invisible experiences.



# *What are* **invisible** **experiences?**

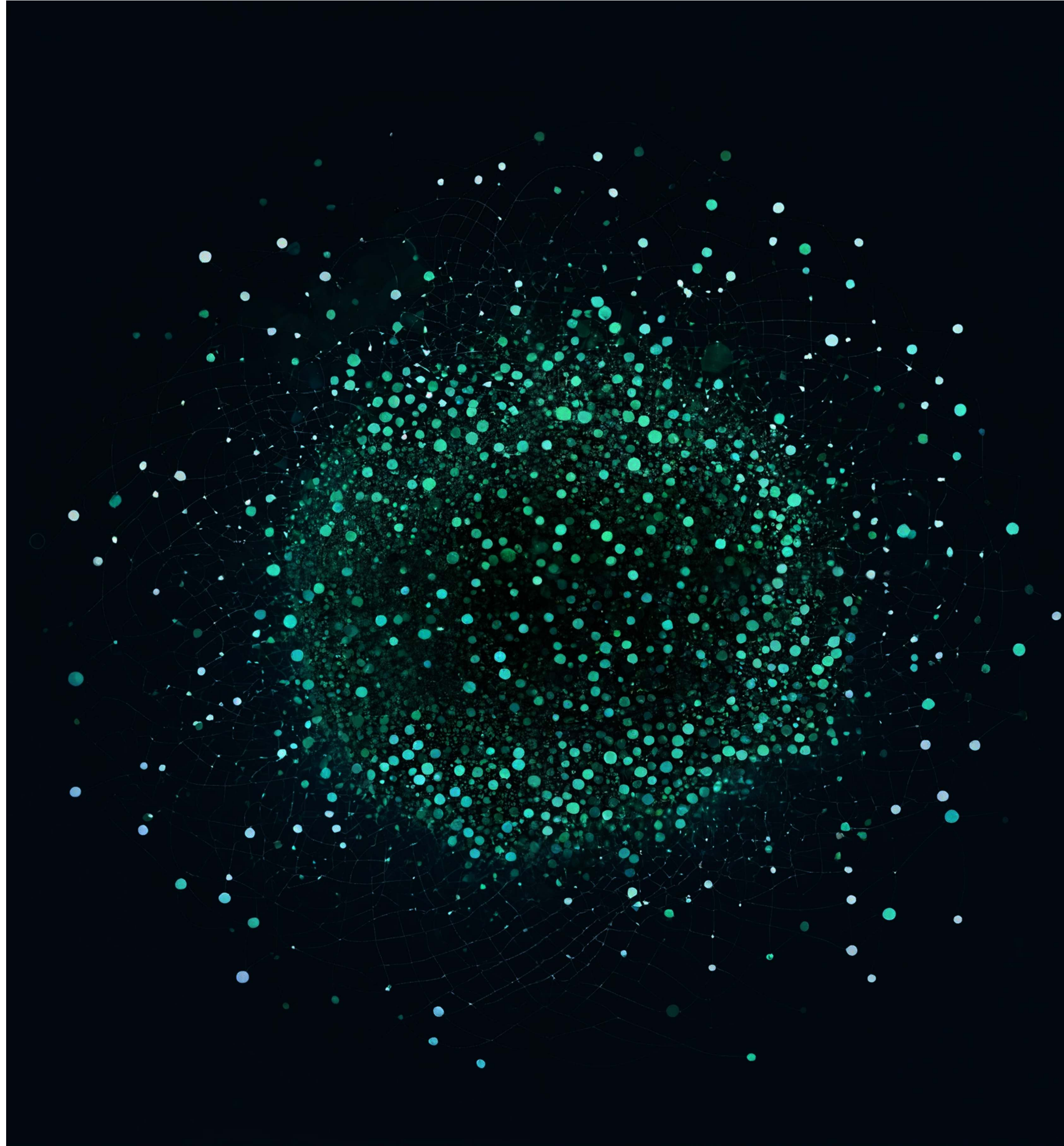
Invisible experiences are **seamless and frictionless interactions with technology** that effortlessly anticipate what users need, delivering relevant assistance directly.

These experiences **emphasize convenience, personalization, and minimizing explicit user interaction**. They allow us to stay connected without needing to be plugged into devices, embodying the essence of being “**connected but unplugged.**” This shift towards human-centered AI prioritizes intuitive, natural communication between humans and machines, ensuring technology serves us without demanding constant attention.

*Immersive and invisible experiences form a continuum,*

bridging the gap between the apparent digital interactions and those that fade into the backdrop of our lives. Together, they create a spectrum of engagement that allows us to choose how deeply we dive into the digital or how effortlessly it blends into our physical world.



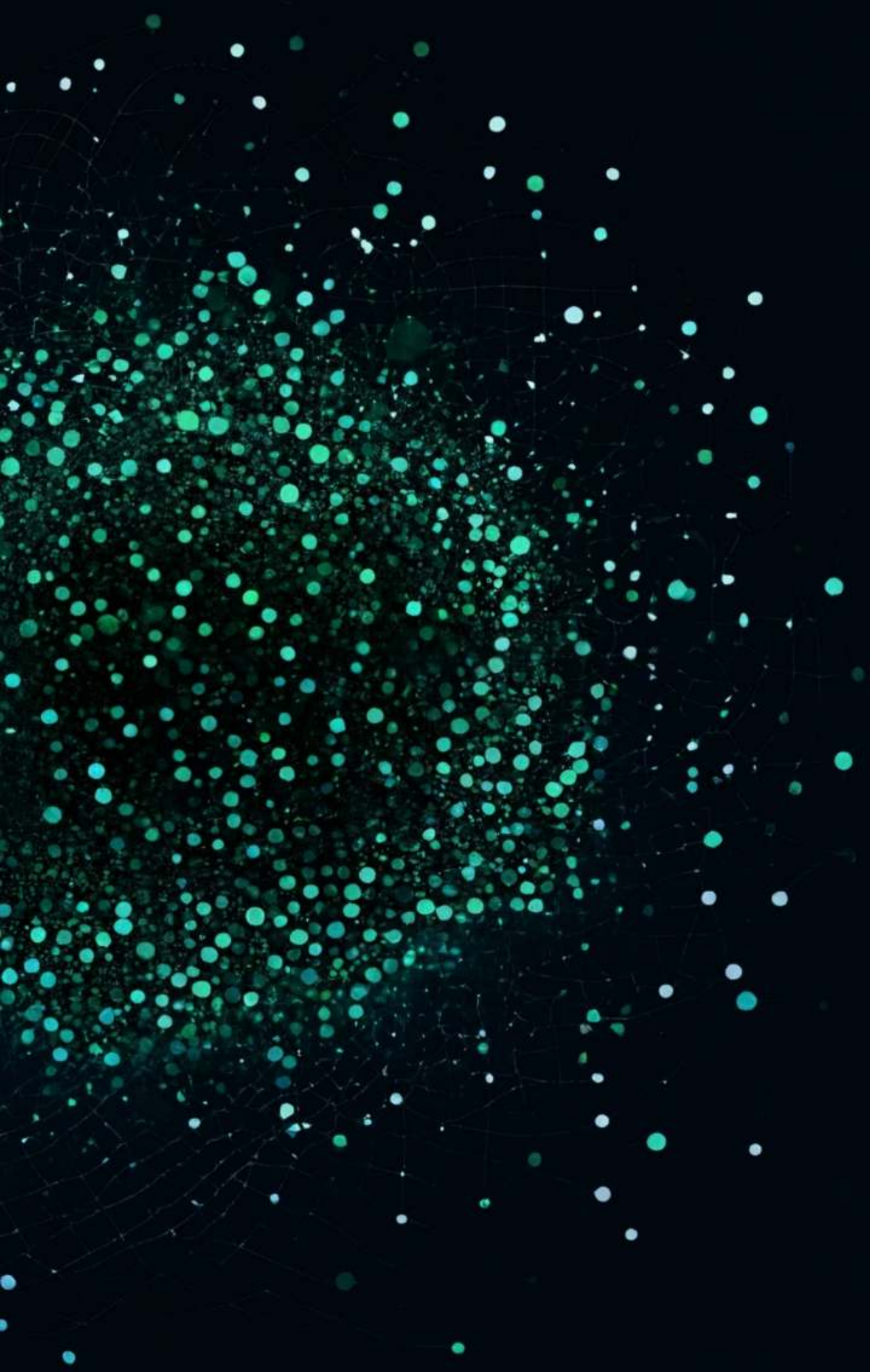


# *Enabling* technologies

**AI plays a vital role in this landscape**, making sophisticated, personalized experiences accessible to a broader audience due to a range of new capabilities that understand our needs and connect with “actuators” that ensure these requests happen.

**Wearable and portable elements are another critical aspect of building invisible experiences;** technology now anticipates our needs and moves with us, adapting to our changing environments and routines. This evolution towards more adaptive, anticipatory technology marks a significant leap in how we interact with the digital world, making our engagement with technology effortless and enriching.





*A large language model (LLM) is an artificial intelligence system designed to understand, generate, and interact with human language.*

Built on vast amounts of text data, these models learn from patterns in the data to comprehend language structure, semantics, and context. They can complete text-based tasks such as answering questions, writing in various styles, translating languages, and more through training. These models aim to mimic human-like understanding and generation of language, making interactions with computers more natural and intuitive.



*Invisible  
experiences use*  
**LLMs and Large  
action models  
(LAMs)**

LAMs stand out in AI for their multifaceted capabilities as they can evolve from LLMs by becoming 'agents' capable of autonomously executing tasks, **combining LLM's language proficiency with making decisions mimicking human actions** and application interactions without needing text prompts through neuro-symbolic programming.



# They are highly skilled at understanding complex human goals

expressed in everyday language and can transform these intentions into actionable steps while providing real-time responses. **LAMs are also adept at intelligently interacting with people**, adapting to changing circumstances, and communicating with other LAMs. Furthermore, they engage with the world by integrating with external systems, elevating generative AI from a passive tool to an active collaborator in accomplishing tasks.

A LAM presents a new category of data tailored to individual preferences and behaviors, making them more easily interpretable by AI systems. **Unlike the interactions required with LLMs, which often need direct input or commands, LAMs facilitate more intuitive, behind-the-scenes operations.** They enhance invisible experiences by seamlessly integrating technology into our daily lives.

**Amy Webb**, CEO of Future Today Institute, explained in their [2024 Tech Trends Report](#) that

*“Large language models predict what to say next, large action models predict what to do next.”*

The model needs action-based data to predict the next step for invisible experiences to become a seamless part of our day-to-day lives.




# *User* experience

**UX with invisible technologies focuses on subtlety and intuition rather than overt engagement.**

These invisible experiences are omnipresent in our daily lives, offering a layer of assistance that is always available yet hardly noticeable. **Such technology operates on an AI-first approach**, prioritizing artificial intelligence to understand and anticipate user needs, making device tools and proactive partners in our day-to-day activities.



A close-up photograph of a person's hands holding a smartwatch. The watch has a blue face and a black and orange strap. A light blue speech bubble with a white border is positioned above the watch, containing the text 'How can I get to the main square?'. The background is dark and out of focus, showing what appears to be a jacket or bag.

How can I get to  
the main square?

## *Wearable technology*

is a prime example of this seamless integration, providing vital information and assistance to the user discreetly.

From fitness trackers that monitor health metrics without interrupting the day to **smart glasses** that display notifications in the periphery of your vision, wearables epitomize the invisible experience.



## *Voice-controlled devices and gesture navigation*

further enhance this by leading users to interact with technology through natural, human-centric modes of communication.

Speaking a command or simply gesturing in the air can prompt various actions from our devices, from playing music to setting reminders without pressing a button or looking at a screen. The responses from these interactions are equally natural, with AI-driven devices providing conversational and intuitive feedback.



**This evolution towards more human-like exchanges signifies a shift in how we view our gadgets**—not as inanimate objects but as intelligent entities capable of understanding and responding to our needs in an effortlessly natural manner.



# Invisible experiences *today*

Today's devices, tangible and present in our physical world, aim to enhance our daily activities without interrupting them.

Invisible experiences are coming to life in products like voice assistants, Rabbit, Humane, and Open Interpreter's 01, where the emphasis is on the user rather than the device.

These products allow for seamless interaction with technology, **enabling users to stay engaged with their surroundings through almost all senses**, achieved through inconspicuous interaction, where the devices are controlled mainly by voice commands. **This approach frees up the user's sight and touch, allowing for a more natural interaction with the world around them.** The designers of these products often describe this experience as being "connected but unplugged," highlighting the blend of connectivity and freedom they provide, distinguishing the devices as they shift away from traditional screen-based interaction.



## *The Humane AI pin*

Unveiled in mid-November 2023, represents a new model for how humans interact with technology and vice versa.

**The device, powered by AI**, is a wearable assistant that integrates into human lives and has the power to replace traditional mobile devices.

**Worn as a lapel pin**, the device operates on voice commands and hand gestures, including a UI that projects onto your hand. **It can synthesize data, record videos, send text messages, and translate conversations in real-time**, emphasizing invisible technology that allows users to interact seamlessly with their environment without the hindrance of a screen, introducing an innovative approach by using the user's hand as a projection surface when needed.







## *The Rabbit R1*

A communication device that **allows you to access all your apps and subscriptions in one place** with voice commands rather than going into individual apps to get things done.

**It enables quick communication with a simple button press and is screen-agnostic.** Similarly, Open Interpreter 01 offers seamless communication with your computer, all compacted into a device that fits in the palm of your hand.



# *Neuralink*

A project led by Elon Musk, is a prime example of an invisible experience, which is investigating the use of BCIs. **Though this is an invasive type of BCI because it requires surgery, it uses AI to let users directly control digital devices** with their thoughts by interpreting brain waves. While these interfaces are primarily used for innovative interactions with smartphones and computers today, **they hint at a future where simply thinking about a destination could automatically summon a ride from Uber**, eliminating the need for any physical action by the user.





*Invisible experiences*  
being built with brain-computer interfaces (BCIs) enable a person to control an external device using brain signals.

There are two different types of BCIs: invasive and non-invasive. An **example** of a non-invasive BCI device is an EEG headband. An EEG headband is a wearable device that safely measures brain activity and feelings as they happen. It has sensors on the head that pick up the brain's electrical signals and send them to a computer for study. The user must concentrate on a particular thought while the device records the related frequency. This frequency can educate artificial intelligence algorithms to link specific thoughts with specific actions.



# *Challenges* to overcome

As we move deeper into the era of invisible experiences, **it's apparent that screens will not dominate the future of technology.** Instead, a harmonious relationship between humans and AI will occur, where technology is more intuitive, personalized, and unobtrusive, blending into the fabric of our daily lives. The landscape of invisible experiences is just starting to take shape, and not all emerging devices or technology will make a lasting impact. However, those that effortlessly integrate into our lives and connect with other devices will likely define our technological future.

Invisible experiences, while revolutionizing user interaction with technology, bring a suite of potential challenges that merit serious consideration. The environmental impact of deploying and maintaining the vast infrastructures required to support invisible experiences must be considered. To make invisible experiences viable, **we will require more efficient and quicker supporting technologies, such as quantum computing.** As the demand for computing power increases, we'll also need cleaner energy sources to power our data centers, including renewable and nuclear energy.



**Privacy management and ethical principles are vital, especially regarding these technologies' collection, utilization, and protection of personal information.**

Lastly, the push towards seamless and ubiquitous technology risks reducing technodiversity—the variety of technological solutions available to address different needs and preferences. A landscape dominated by a few powerful platforms could stifle innovation and limit users' choices, locking them into ecosystems prioritizing convenience over diversity and resilience.

These challenges highlight the need for a balanced approach, ensuring that the benefits of deploying invisible experiences do not come at the expense of crucial elements such as those mentioned above.







## Ritesh Menon

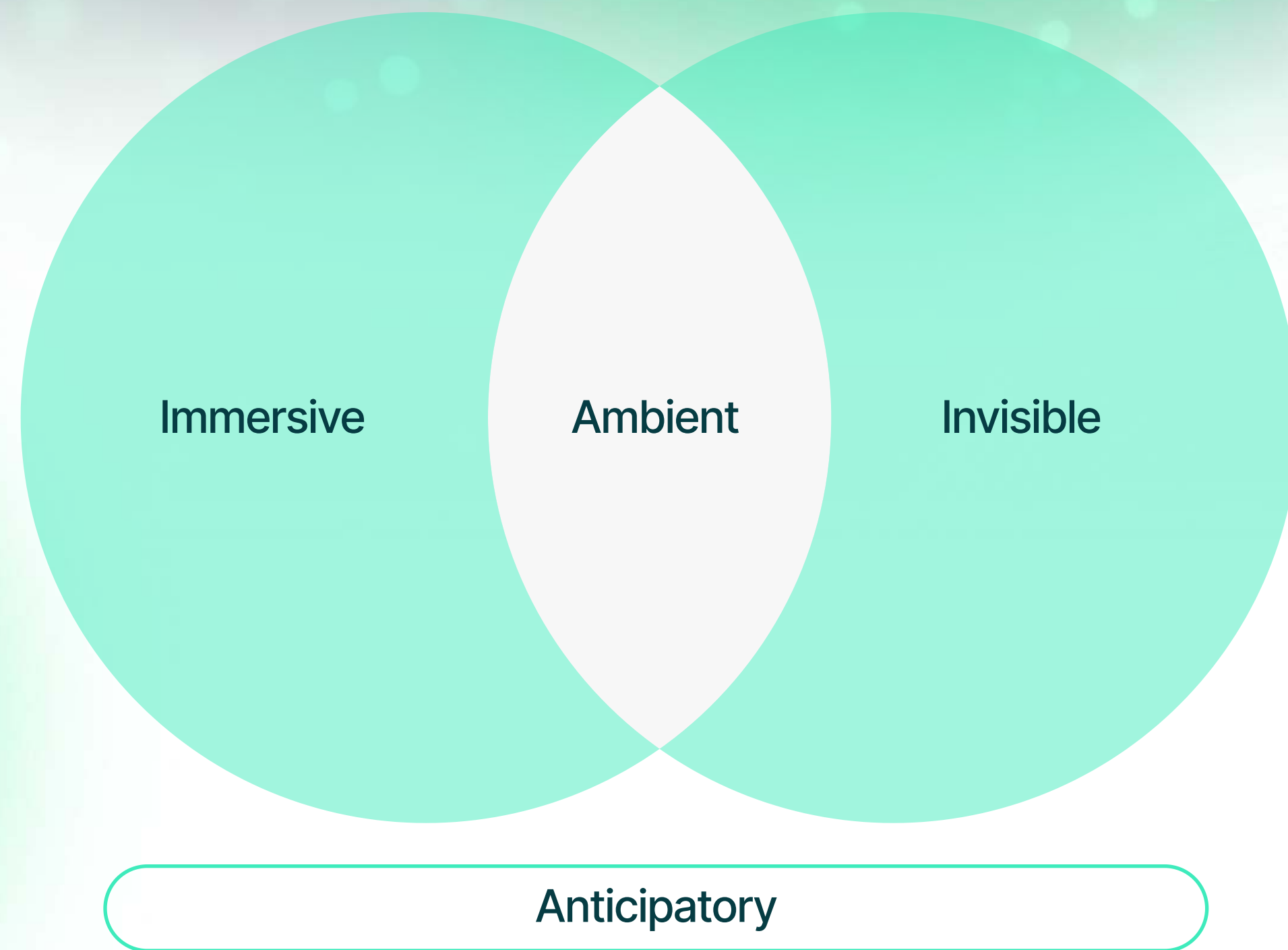
VP of Technology at  
Globant.

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**“In building these invisible experiences, computational**

demand will increase exponentially, we will see the rapid development of custom silicon, and we will potentially rely on quantum computing for faster and more efficient computing. I believe rapid strides in quantum computing and silicon photonics will be a big enabler for making these invisible experiences come to fruition.”





# *What's* next

## Anticipatory experiences

Invisible experiences, like all forms of technology, are on a fast track of evolution. Currently, we see a lot of technology that requires a user to initiate interaction. However, the trend is quickly moving towards what we call anticipatory experiences. **These experiences, powered by the latest AI and extensive user data, are designed to be unseen and predictive, aiming to fulfill a user's needs before they are explicitly expressed.**

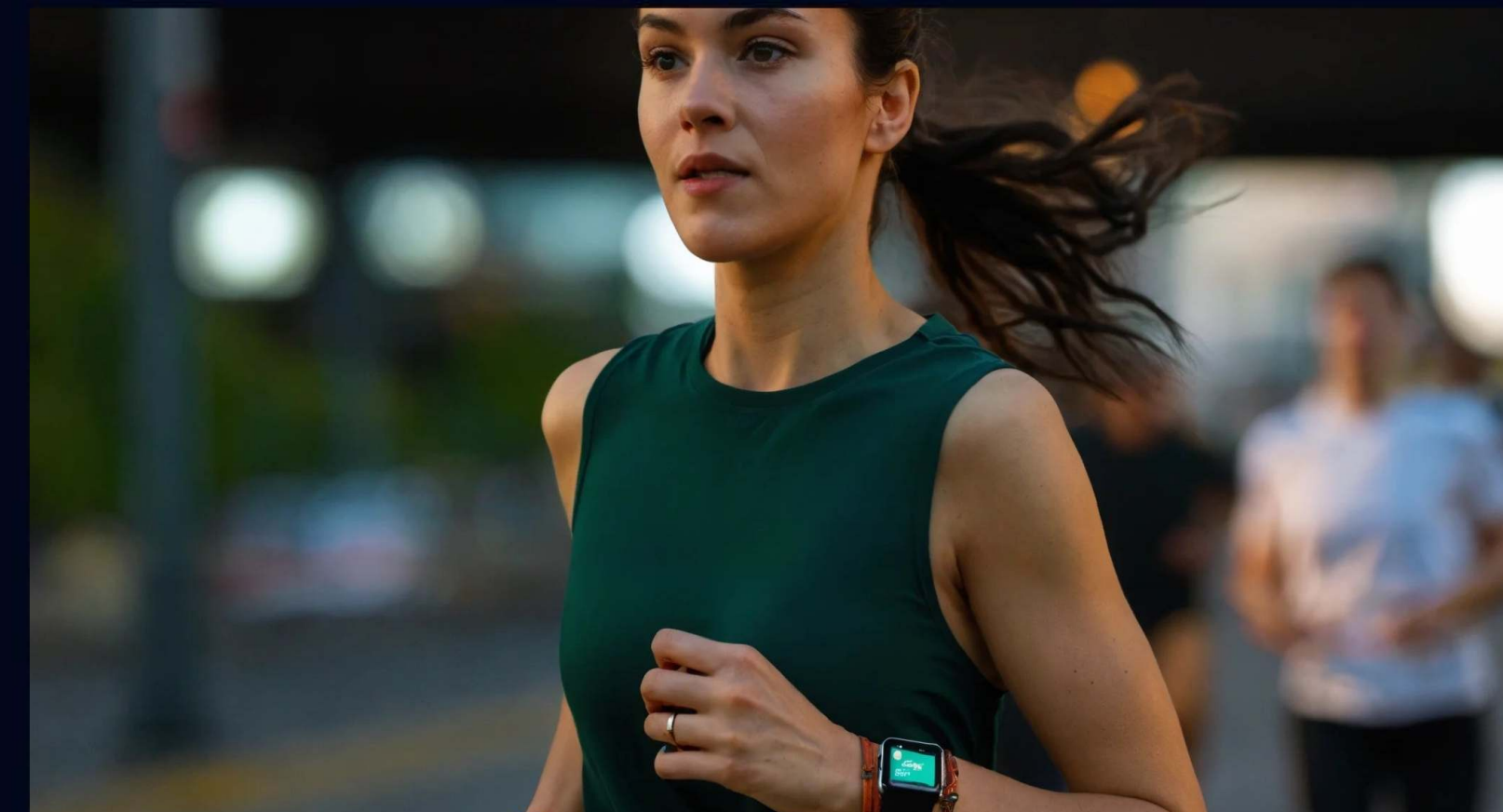
This shift is evident across various industries, from banking and food delivery to healthcare and airlines, where the design of products and services is increasingly proactive, reducing the need for the user to take action.



In Forrester's report, **Future Digital Experiences: Invisible and Immersive**, they explain that the future of anticipatory experiences will minimize the customer's need to take action: **"To create invisible experiences, brands will use context and technology to offer more convenience to consumers. Businesses will progress through stages in which they: Remove steps — or entirely redesign experiences."**

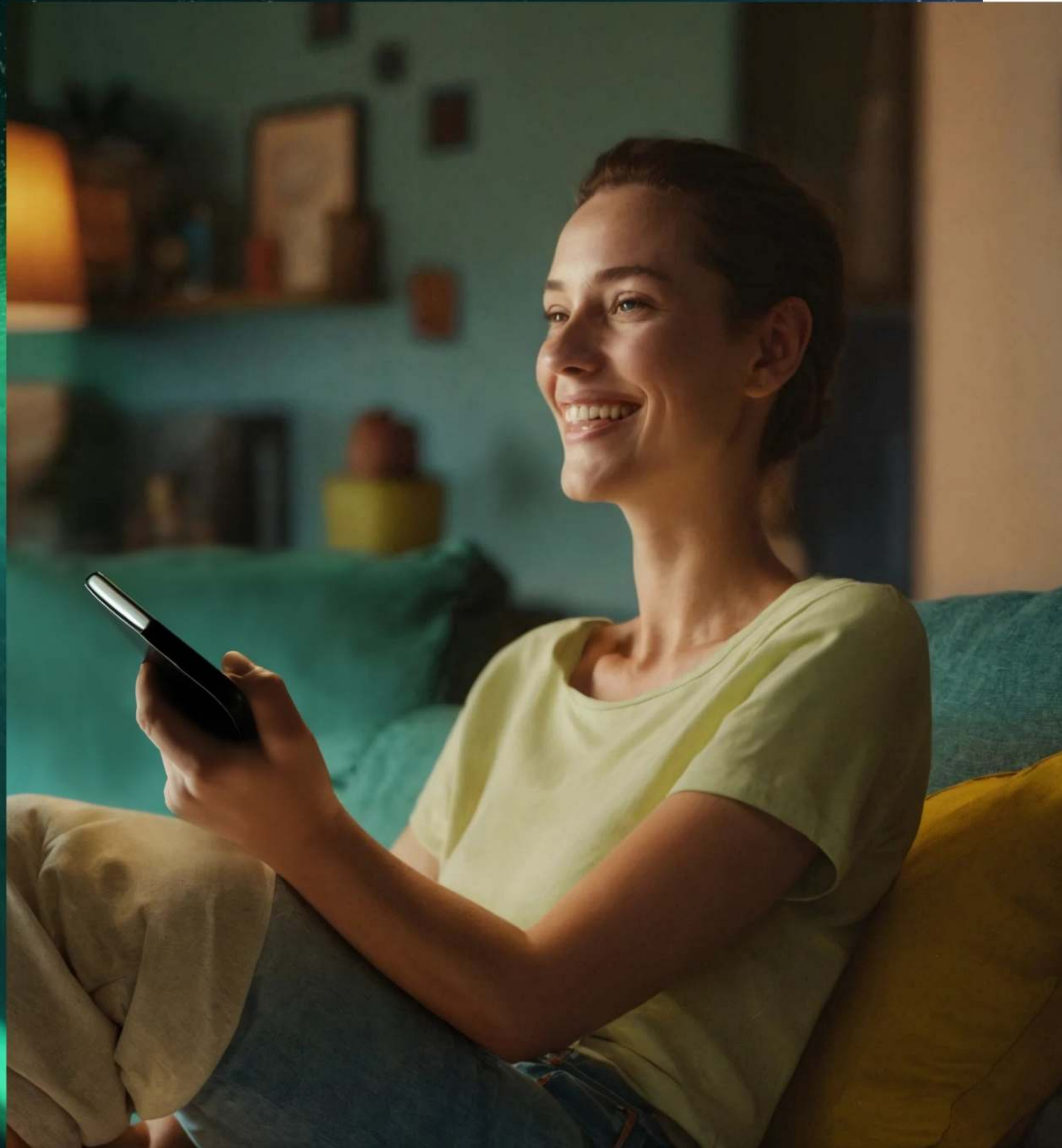
*Picture your wearable AI device or smartwatch connected to your smart air conditioner, enabling them to recognize your preferences.*

So, imagine you went for a run. Before you return home, the air conditioner can anticipate your needs based on real-time body temperature data, adjusting the temperature environment according to your comfort and cooling needs.



**The journey from experiences that start with the user's direct input to those that are proactive, assistive, and agentic sets the stage for anticipatory experiences.** As technology becomes more adept at predicting needs based on rich data and sophisticated AI, initiating an interaction with technology may soon become an exception.





# *Ambient* experiences

As invisible and immersive technologies gain popularity, we anticipate a future where digital interactions effortlessly merge these two concepts into what we call ambient experiences. While not a new idea, ambient computing has recently evolved significantly, becoming more transformative than ever.



Rick Osterloh from Google highlighted this shift at a **key event in 2019**, presenting a vision where devices, services, and AI collaborate smoothly to offer help anytime and anywhere, **blending into the background when not needed**. This concept of ambient computing has grown, especially with the integration of AI, leading to the more refined idea of ambient experiences.

Ambient experiences envision a future where **technology is so seamlessly integrated into our daily lives and so attuned to our needs that it becomes an unnoticeable yet essential presence**. It aims to achieve these objectives seamlessly so that technology feels like a natural part of our environment.





# Conclusion

**When distinguishing between immersive and invisible experiences, the critical difference lies in how we engage with these realities.** Immersive experiences involve engaging with virtual realities through interfaces, while invisible experiences merge technology with our physical world in a way that doesn't require a visible interface or direct interaction.

**The ultimate goal of invisible experiences is to weave technology so seamlessly into our daily routines that it proactively offers solutions without us being consciously aware of a need.** As we move forward, the potential for technology to become a silent yet integral part of our lives grows, envisioning a future where technology recedes into the backdrop, empowering human experiences to flourish.



# *About* Globant

We are a digitally native company that helps organizations reinvent themselves and unleash their potential. We are the place where innovation, design, and engineering meet at scale.

- We have more than 27,500 employees, and are present in 30 countries across 5 continents working for companies like Google, Electronic Arts and Santander, among others.
- We were named a Worldwide Leader in AI Services (2023) and Worldwide Leader in CX Improvement Services (2020) by IDC MarketScape report.
- We stand among the top 100 fastest-growing companies in the world (2023) according to Fortune.
- We were also featured as a business case study at Harvard, MIT, and Stanford.
- We are active members of The Green Software Foundation (GSF) and the Cybersecurity Tech Accord.

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[www.globant.com](http://www.globant.com)

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