WHAT IS THE INTELLIGENT DIGITAL MESH?



The term intelligent digital mesh describes the integration of people, devices, the internet of things (IoT), processes, services, and data into a collaborative environment. In other words, technologies increasingly work together in a network, or mesh, rather than individually as lone parts, resulting in higher convenience and efficiency for the people using them.

Implementation of intelligent digital mesh leads to higher business value, making it vital for organizations to remain competitive in the modern market. Some challenges come with this change, but many benefits also await those who embrace the mesh as it continues to become a central part of doing business.

The Three Categories of Trends

Just as its name suggests, the intelligent digital mesh consists of three categories of technology trends working together: intelligent, digital, and mesh. For several years now, the global tech research and advisory firm Gartner has centered their Top 10 Digital Technology Trends report on these three groups, placing each of the yearly 10 strategic trends within one of them. Below, read about the role that each category currently plays and how that role is likely to progress in upcoming years.

Intelligence Trends

The intelligence category showcases trends that emerge because artificial intelligence (AI) and

machine learning now exist in practically all existing technologies. From everyday appliances to advanced medical equipment, these technologies help to not only collect data, but also to relate it to other data and information in meaningful ways. As they become increasingly prevalent, they cause the growth of additional new categories as well as changes to existing ones as we know them. The strategic trends that Gartner has placed in this area include:

- Applied AI and Advanced Machine Learning
- Intelligent Applications
- Intelligent Analytics
- Intelligent Things
- Autonomous Things
- Augmented Analytics
- AI-Driven Development

Digital Trends

Digital trends are those which blur the line between virtual and physical technology, creating an immersive and digitally-enhanced environment. They open the doors to new possibilities for unique business models that previously didn't exist. They also take into account the increased need for privacy and digital ethics as the amount of data produced by various technologies grows exponentially. Some of these trends, such as digital twins, are not new. But the modern versions of them have novel qualities and applications that continue to break barriers and advance the field. The trends that Gartner has placed in the digital category are:

- Virtual and Augmented Reality
- Digital Twins in the IoT
- Blockchains and Distributed Ledgers
- Cloud to the Edge
- Empowered Edge
- Conversational Platforms
- Immersive Experience

Mesh Trends

And finally, the mesh trends are those that connect the above two categories to one another and to the businesses and people that use them to obtain digital business outcomes. Mesh technologies make the connections between other tools smoother, more secure, and more efficient. In the process, it strengthens networks of smart agents, digital devices, business data, services, and people to deliver significant business value. Mesh trends identified by Gartner include:

- Conversational Systems
- Mesh App and Service Architecture
- Digital Technology Platforms
- Adaptive Security Architecture
- Blockchain
- Event-Driven
- Continuous Adaptive Risk and Trust
- Smart Spaces

Mesh App and Service Architecture (MASA)

As organizations have experimented with and embraced intelligent digital mesh projects over the last five years or so, they have encountered the need for a fitting architectural model. Specifically, the meshing of many devices to single applications is not possible with older three-tier application architectures. MASA contributes to the implementation of digital business ecosystems on a larger scale by offering an optimized and consistent solution across any device. It links everything from mobile apps and desktop apps to web apps and the IoT into a wide mesh of back-end services, culminating to create applications for user interactivity.

An application using MASA will focus on a single activity or process, but consists of several services and apps that provide for the needs of a specific user in the process. Such a structure is ideal for facilitating everyday tasks that people do on their computers, phones, and tablets. For example, MASA enables a user to prepare an online shopping list on a computer at home, and then open the same list on an app on their phone at the grocery store.

In addition to a smooth single-channel experience for users, MASA also offers better customer relationships via leveraging analytics. Other features of MASA include connection of APIs to digital ecosystems, modern applications that still fluidly communicate with differing legacy back-end systems, scalability for adding new devices or increasing traffic volume, and adaptive reaction times to business changes.

To build a MASA-based application, you should be prepared to first meet a few requirements. The application needs to be cloud-native, meaning it is hosted on the cloud, giving it high elasticity and availability. Because internet traffic can have an enormous volume, the application should also have the ability to scale with the addition of new devices. Similarly, keeping applications modular and adaptive helps enable dynamic business changes that can be developed one service at a time without cross-dependencies.

Effects of the Intelligent Digital Mesh on Businesses

As the intelligent digital mesh made its way onto the scene, many businesses shied away from it, secretly hoping that it was just a fad. This is understandable given the complexity and challenges that the mesh brings, but it is now clear that the trend is here to stay. Businesses that do not implement intelligent digital mesh risk falling behind as their competitors take advantage of these powerful tools.

Intelligent digital mesh helps businesses to accommodate people, devices, and processes in an integrative framework, encouraging the highest possible gains through collaboration. The interaction between devices enhances decision-making processes and outcomes in a way that has never existed in the history of business.

Already, the integration of intelligent systems and digital devices into the mesh has increased technology awareness in business. If a business owner decides to implement the mesh, they must ensure that their staff is familiar with the technology and how it impacts the business. Additionally, the mesh has encouraged decision-making that relies primarily on data. The continuous flow of various types of data allow business owners to provide transparent marketing services.

Concerning customers, real-time engagement through chatbots, video-chat technology, digital assistants, and other channels have increased sales and customer service capabilities to new

heights. This enhanced interaction with customers on a personal level also encourages brand loyalty, strengthening the long-term relationship between business and customer.

An Underlying Force for Years to Come

It's clear that the intelligent digital mesh is here to stay, and will continue becoming a fundamental part of modern enterprises. This is apparent due to the observable growth in the number of chatbots, virtual assistant products, wearables, and IoT sensors and endpoints in the market today.

The proliferation of the intelligent digital mesh in workplaces also sets the stage for the emergence of entirely new workplace structures and operations, such as people-centric smart spaces. Intelligent digital mesh provides the perfect foundation for this people-centric structure, allowing for the technology strategy to emanate from that human center.

However, creating people-centric structures calls for an awareness and purposeful intent highlighting the most important parts of the organization: employees, customers, and partners. In all cases, optimizing the impact of the intelligent digital mesh requires significant skill and effort, but it offers many possibilities for those who consciously implement it in the areas where it will have the greatest influence.