Solution Brief

Retail, Manufacturing, Corporate Communications

Telelogos Digital Signage Delivers Personalization for Retailers

Company demonstrates computer vision-based retail product recommendation application powered by Intel's Edge AI portfolio

There is no end to the number of advertisements seen by consumers today, which is why there's something powerful in using AI-enabled digital signage to display a customized advertisement or promotion right at the time of purchase. This experience is enabled by agentic AI, which analyzes shopper context and autonomously selects the most relevant content in real time.

Using a flat panel display for digital signage in this way enhances the customer experience and generates additional purchases and also can be used to accelerate stock rotation.

The biggest enabler of this capability is a content management system (CMS) that controls all of the aspects of the video / image presentation and the interactivity. Telelogos, an Intel® Industry Solutions Builders Partner, needed more compute power for its Media4Display CMS to ensure smooth video delivery across multiple, ultra-high definition (UHD) screens and to power new interactivity and AI functionality. The company standardized on a small form factor computer based on the 12th Generation Intel® Core™ i7-12700H processor, featuring integrated AI acceleration alongside Edge AI Libraries and Intel® developer tools.

Advanced Digital Signage

The Telelogos Media4Display CMS brings digital signage capabilities to flat panel displays allowing users to create, manage, and show digital content over a network of screens. The software supports most common file types and offers a simplified interface that allows users to import or create content (see Figure 1).

Media4Display can organize screens in customizable target groups. The targets can be organized by geographic area, type of service, or type of screen. Media4Display can manage content, and schedule and manage multimedia playlists.

The flexible system works with a wide range of screens and media players that are a part of Telelogos' ecosystem of professional screen and player manufacturers.

Media4Display also natively integrates a full device management system that ensures reliability, security and seamless operation of a digital signage network. The software runs on Windows or Android operating systems.

Nearly Unlimited Digital Media Types

Media4Display can utilize data from third-party applications and databases, CRM systems and more in order to personalize the interaction with the customer. The system supports all digital content that can be broadcast, including images, videos, slides, PDFs, webpages, PowerPoint, live streams and streaming media.

The built-in Proof of Play feature measures digital out-of-home (DOOH) impressions allowing Media4Display to fulfill DOOH campaigns and monetize the display network.

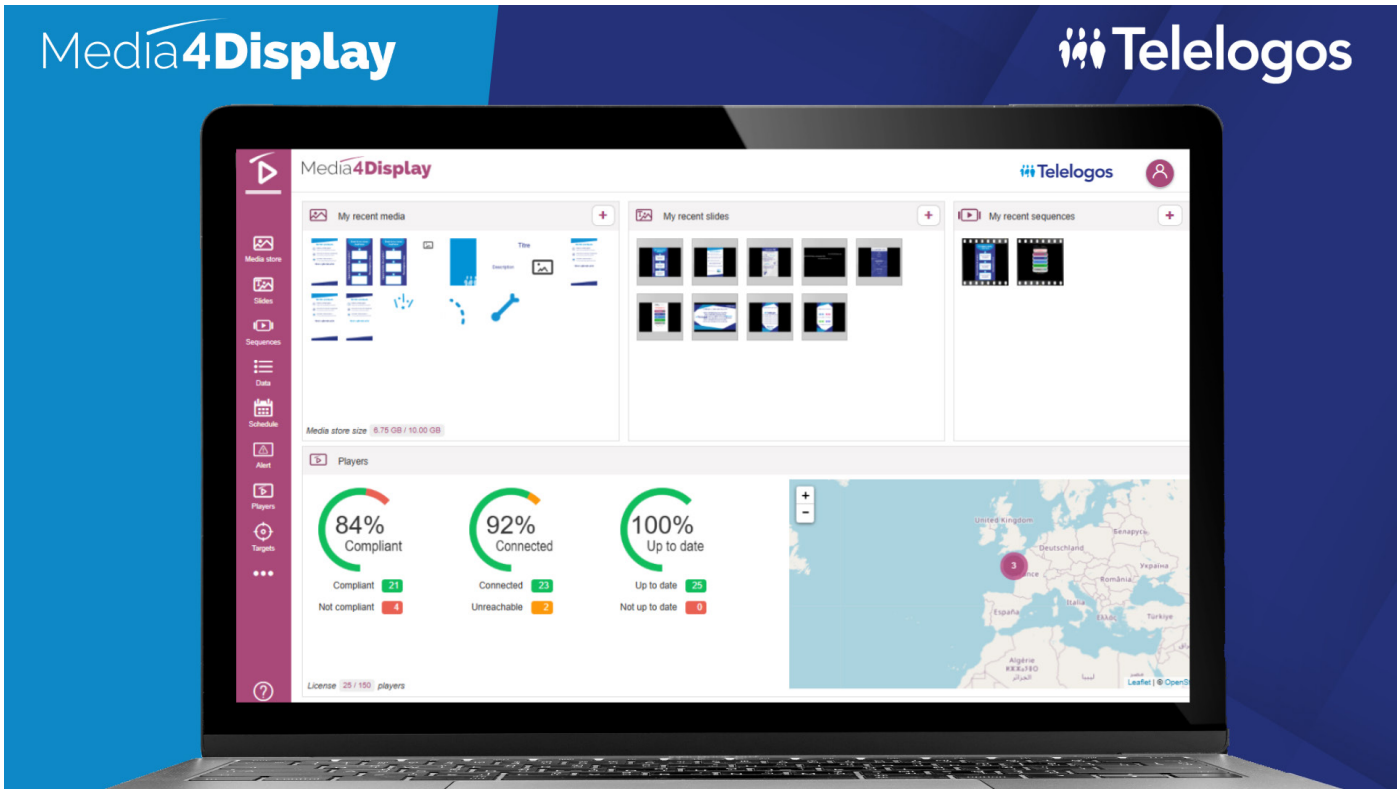

Figure 1. Media4Display Homepage Dashboard View.

Based on 12th Generation Intel® Core™ Processor

The platform that Telelogos recommends for Media4Display digital signage applications is a small form-factor computer based on the 12th Generation Intel Core i7-12700H processor with integrated AI acceleration. The 12th Generation Intel® Core™ processor family delivers a balanced combination of performance, integrated graphics acceleration, and AI-driven capabilities that align well with the needs of Media4Display digital signage deployments.

With up to eight cores and high-frequency performance up to 5.3 GHz, the SoC is tuned for low-latency edge workloads. The processor supports responsive content rendering, dynamic layout changes, and real-time data processing at the display endpoint. Integrated with Intel® Iris® Xe Graphics in some SKUs, the SoC provides a significant uplift in visual performance, enabling smooth playback of 4K content, advanced video decoding, and visual effects without requiring a discrete GPU.

The processor's robust set of I/O and connectivity options include high-speed PCIe Gen4, Thunderbolt 4, and Wi-Fi 6/6E support. These simplify connectivity to cameras, sensors, and high-bandwidth peripherals critical to interactive signage experiences.

The Intel Core processor family features extended product lifecycles with up to 10 years of availability and Windows 11 IoT Enterprise Long-Term Servicing Channel (LTSC) 2024.

Media4Display Delivers Custom Advertising

Telelogos worked with Intel to demonstrate an advanced Media4Display use case that uses computer vision AI to advertise products to customers on displays as they walk through the store. This solution operates as an agentic AI workflow, continuously interpreting shopper behavior and autonomously triggering the most relevant promotions.

In this application, the system analyzes what is in the customer's basket and offers promotions or sales on complementary products or serves up a recipe that uses an ingredient that the customer already has in their basket. Built-in policy and preference analysis can ensure that the promotion features products with the right stock levels.

To ensure crisp AI performance, this solution uses key software components that are part of the Open Edge Platform—foundational building blocks for agentic and multimodal AI experiences in retail--and also leverages certain Intel® developer tools, including:

Geti™ Software: Part of the Open Edge Platform, Geti software is an end-to-end computer-vision platform that streamlines dataset creation, model training, and iterative refinement for AI applications at the edge. It enables digital signage solution providers to rapidly build and deploy custom vision models without deep data-science expertise.

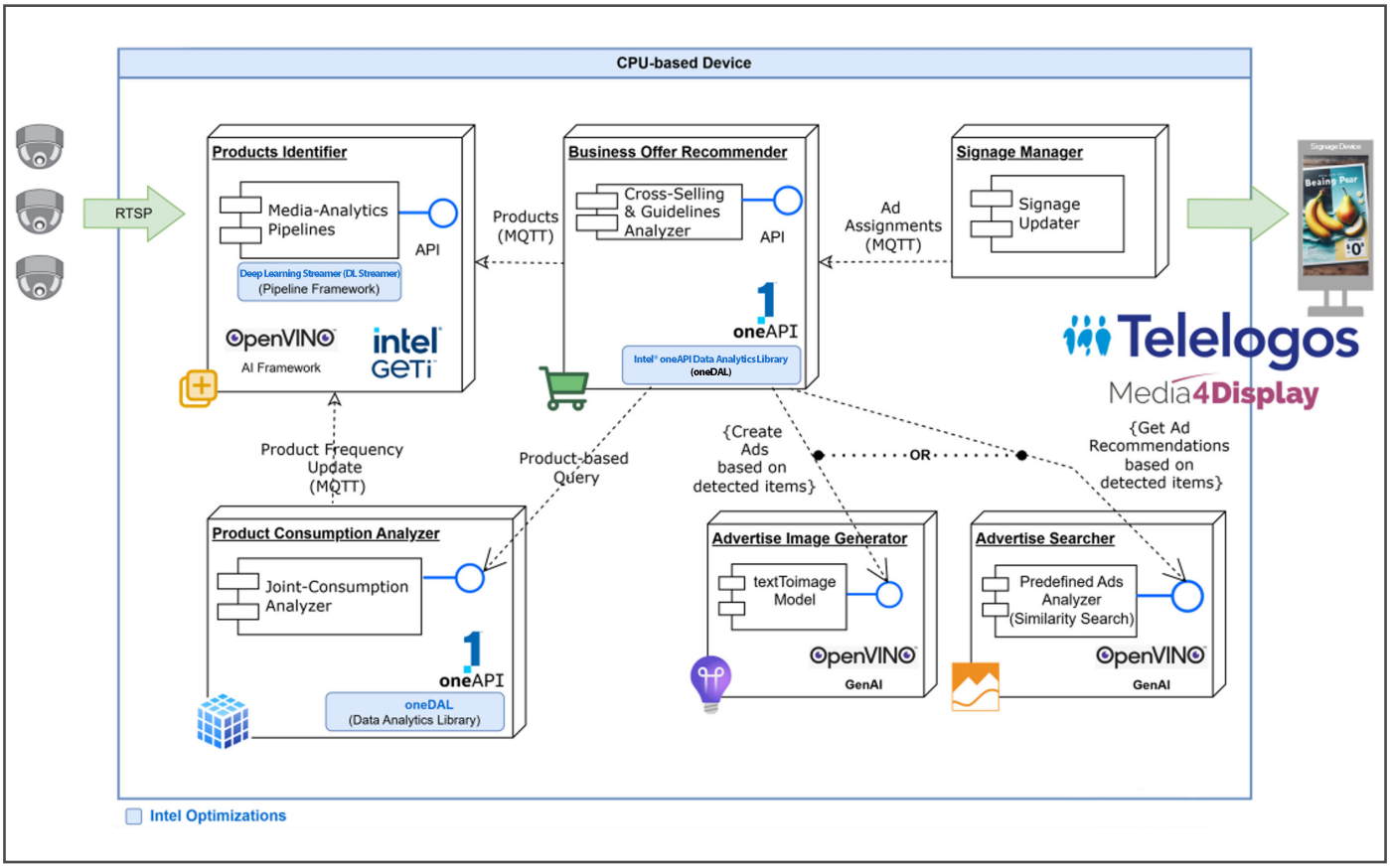

Figure 2. Product recommendation use case workflow.

Intel® SceneScape: Part of the Open Edge Platform, Intel SceneScape is spatial intelligence software that creates 3D environments from input images, enabling advanced synthetic data generation and scene understanding. For digital signage, it supports development of more robust computer-vision models by providing controllable training data for complex retail, transportation, or venue environments.

OpenVINO™ toolkit: Part of the Edge AI Libraries, OpenVINO toolkit accelerates inference performance on Intel® processors by optimizing deep-learning models for real-time computer vision workloads. For digital signage, it enables high-throughput, low-latency analytics such as audience metrics, gesture detection, and dynamic content triggering.

Intel® oneAPI® Base Toolkit: This open, cross-architecture programming model enables developers to use a unified set of libraries and tools across Intel processors and AI accelerators. It simplifies the development of digital signage solutions that require portable, performant AI, graphics, and data-processing workloads.

Intel® oneAPI Data Analytics Library (oneDAL): An open-source, cross-platform library that is designed to accelerate big data analysis and machine learning (ML) workflows on Intel processors. In digital signage systems, it improves performance for data-driven content personalization and operational analytics at scale.

Workflow Details

The workflow (see Figure 2) starts with video data from cameras located throughout the store, forming the basis of a multimodal AI pipeline that fuses visual analytics, product-recommendation logic, and dynamic content delivery, with the following flow:

- Video is processed by the product identifier process which provides analytics to detect if a shopper has products in their cart that are part of the promotion program.
- This process is informed by the product consumption analyzer and the business offer recommender which look at the cross-selling guidelines to ensure the right product is on offer.
- The system then accesses the advertising content, which comes either from the advertisement image generator or, in the case of already available content, from the predefined advertising stored in the advertising searcher.
- This ad content data is sent to the signage manager where the signage updater function posts the ad to the right sign.

Conclusion

The product recommender use case shows the benefits of advanced digital signage CMS systems. They can provide customers with valuable recommendations and thus improve the shopping experience. The Media4Display CMS offers these advanced features combined with media flexibility, and a simple interface. When combined with key components of the Open Edge Platform and the 12th Generation Intel Core i7 processor, the CMS is ready for the future.

Learn More

Telelogos Web Page

Telelogos Media4Display

Telelogos Retail

Intel® Core™ i7-12700H processors

Geti™ Software

Intel® SceneScape

OpenVINO™ Toolkit

Intel® oneAPI Base Toolkit

Intel® oneAPI Data Analytics Library (oneDAL)

Intel® Retail Edge Program

Intel® Industry Solutions Builders

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