WHY DIGITAL SIGNAGE NEEDS IOT

How cellular IoT connectivity enables a “plug and play” solution for digital display installation, content delivery and SLA fulfilment. The paper includes a case study with digital signage solution provider FirstView.
EXECUTIVE SUMMARY

Around the world, there is a growing demand for digital displays that deliver high-resolution content in shops, restaurants and public spaces. With fleets of displays spread over wide distances, digital signage service integrators need a solution to improve processes, increase ROI and capture new business opportunities.

Instead of using limited (and often troublesome) LAN and WiFi connections, delivering content to displays over cellular networks has become increasingly attractive. SIM cards embedded in media players make it possible to connect digital displays to cellular broadband networks as easily as connecting your phone.

By empowering media players with SIM cards, digital displays can be installed anywhere in the world where cellular networks exist. Rather than buying a separate SIM card solution in each market, the Telenor Connexion Global SIM gives digital signage integrators access to Telenor’s worldwide network, supported by dedicated Internet of Things (IoT) connectivity experts.

This means service integrators can reliably manage and deliver content around the world, with the power to adjust content on individual displays. The end result is increased control of the communications chain, reduced installation and service costs, and easier fulfilment of service level agreements (SLAs) with end-customers.

This report will provide a quick overview of the digital signage market today, and explain how digital signage service integrators or end customers can achieve a mobile “plug and play” solution using Telenor Connexion Global SIMs. We also explore how FirstView, a global digital signage provider headquartered in Finland, are scaling their offerings with the Telenor Connexion Global SIM card solution.

TRENDS IN DIGITAL SIGNAGE

- Growing demand for large volume global installations
- Installation increasingly outsourced to 3rd party service integrators
- Many industries use interactive portable touchscreen solutions
- Mobile phones can connect with screens for customer interaction
- Real time data analytics can track biometrics, age and gender
- A projected value of USD 33 billion by 2023

1 Digital Signage Market by Product (Kiosks, Menu Boards, Billboards, Sign Boards), Offering (Hardware (Displays, Media Players, Projectors, Mounts & Other Accessories), Software, and Services), Application and Geography - Global Forecast to 2023, "MarketsandMarkets™"
DIGITAL SIGNAGE – THE BASICS

Digital signage is a broad category, in terms of both format and use cases. Displays include LCD, LED and projection solutions. The displays can consist of individual screens, monitors and outdoor stands, up to jumbotrons and walls of screens working together.

Digital displays are all around us today, delivering content in the form of advertisements, public information, maps, menus, help desks, POS systems and more. Digital out-of-home marketing (DOOH) and retail applications are two of the biggest use cases for digital signage.

WHY DIGITAL SIGNAGE NEEDS IOT

SIM CARDS EXPAND THE POSSIBILITIES FOR MEDIA PLAYERS

The text and video content that appears on display screens is controlled by a media player, usually located in or near the display. Media players that are connected to the internet can be updated remotely using a web-based content management system (CMS).

Pre-embedded SIM cards expand the potential of displays as soon as the power is turned on. The challenges of local network installation are eliminated, making content delivery easier, and more efficient.

FASTER ROLLOUT AND SIMPLIFIED INSTALLATION WITH A SIM CARD SOLUTION

The configuration of digital display media players is usually not complex, but connecting with customer networks often causes bottlenecks. Dealing with security protocols, firewalls and re-directions of IP addresses require skilled staff who know how to complete installation and resolve any issues quickly.

Digital displays have traditionally connected to the internet via the end-user’s fixed broadband connection. This can be tricky in retail shops and public buildings, but nearly impossible in locations like subway stations and street corners.

Connecting SIM-enabled media players is as easy as connecting a mobile phone, with no need to access the end-customer network. This makes rollout much faster, and reduces the pressure of finding skilled on-site technicians.

NEXT GENERATION DIGITAL DISPLAYS NEED GLOBAL CELLULAR CONNECTIVITY

Cellular networks now provide high-quality connectivity to a nearly unlimited number of phones and devices. With SIM solutions, high-resolution content can be delivered over cellular networks to screens all around the world, or to specific, localised audiences. Those same displays can also feed valuable demographic data back into the cloud.

But this doesn’t necessarily require much data usage, as the media player’s connection is idle most of the time. While digital displays used for public safety information or transportation need a constant live connection, media players for most retail and DOOH applications can be updated as-needed. This is comparable to downloading a movie to your phone, as opposed to streaming.
MAXIMISING UPTIME AND SIMPLIFYING SERVICE

Digital signage service integrators are under increasing pressure from clients to deliver more content to more screens. The service level agreement (SLA) signage integrators have with an end-customer usually contains a penalty clause for any downtime when displays are not functioning.

SIMs integrated in media players allow signage integrators to offer standardised solutions, with improved cost control and an instant internet connection. With a unique IP address for each display, cellular connectivity makes it easier to fulfill the SLA, track network performance, and the status of each individual display.

A dedicated mobile connection allows help desk staff to analyse media players and displays from a remote location. When outages or other problems do occur, an individual unit can be diagnosed and serviced without disrupting the rest of the network.

THE TELENOR CONNXION GLOBAL SIM CARD FOR INTERNATIONAL ROLLOUT AND OPERATION

While SIM cards can be a big advantage, digital signage service integrators with a global presence need a way to manage connectivity, control SLAs and streamline processes. Digital signage service integrators operating in multiple countries often buy SIMs from a different network operator in each market, each with a different system, solution and price. No matter where in the world displays are rolled out, the Telenor Connexion Global SIM provides reliable connectivity, backed up with dedicated support from connectivity experts. This makes it easier to align processes and meet SLAs, no matter where displays are located.

THE BENEFITS OF M2M SIMS FOR DIGITAL SIGNAGE

- No interaction with the customer network
- Dedicated connection to each media player
- Cuts on-site installation time
- Simplified diagnostics and service

THE CHALLENGES OF SCALING

- Dealing with local network operators in each market
- Complex asset management
- SLA fulfilment

THE TELENOR CONNXION GLOBAL SIM SOLUTION

- A single SIM card solution for any market in the world
- M2M-grade SIMs
- Total oversight with our SIM service portal
- One reliable partner for global connectivity
- Single point of contact for invoicing and support
- Dedicated IP address for each display
- Secure VPN connection
- Configurable triggers to guard against hackers
- Near-real time visibility of usage
- Comprehensive overview and asset control
- 24/7 customer service from M2M SIM experts located in Sweden
A leading digital signage solution provider in the Nordics, FirstView are scaling their offerings globally with help from Telenor Connexion Global SIMs.

FirstView has been living and breathing digital signage since 2004. Initially focused on hotel conference systems, today, FirstView’s screens are used by hundreds of businesses and government organisations for information sharing and advertising. Usability, organisational-level screen management, reliability, competitive pricing and comprehensive add-on features are what make FirstView a digital signage market leader in the Nordics.

FirstView offers customers digital displays of nearly any size, from small tablets and POS monitors, up to walls of displays. The FirstView package also includes media player devices and a browser-based content management system. An unlimited number of screens around the world can be connected to the same system, and one user can control, schedule and deliver all content over the internet.

Building on their success in the Nordic region, the company began to increase the export of their particular brand of high quality Finnish products and services.

THE SOLUTION: GLOBAL SIM CARDS FROM TELENOR CONNEXION

With a solution designed to meet their needs, FirstView are already seeing the benefits of switching to Telenor Connexion’s Global SIM. SIM administration in multiple markets is now much easier. “The ability to use multiple carriers, and automatically change between them is a great advantage in poor reception situations,” shared Tommi Högmander, CEO of FirstView.

In addition to streamlined content delivery, The Global SIM also helps FirstView to simplify their offerings and sales process. “The solution comes with ‘flat pricing’ in Europe, which helps us offer easy-to-understand pricing models for our end customers,” continued Mr. Högmander.

FirstView have also seen results in the form of simplified operations and delivery of services. With the Telenor Connexion web-based service portal, FirstView now have a near-real time overview and direct control of their assets. “With remote monitoring of SIMs, we can easily handle any error situations,” said Jussi Alanärä, Technical Director at FirstView. “We are now able to take full responsibility for our agreed SLAs.”

A PARTNER FOR GROWTH IN DIGITAL SIGNAGE

Telenor Connexion are the dedicated M2M and IoT experts in the Telenor Group, one of the world’s largest network operators. The ability to scale in a secure and easy way, combined with a highly skilled service organisation, offers customers flexible, personalized solutions.

Telenor Connexion are giving digital signage providers like FirstView access to the Internet of Things. While it may not seem like the typical IoT use case, digital signage providers who switch to a SIM solution reap the benefits of IoT business models, including improved processes, increased ROI and new business opportunities.

As digital displays begin to interact more with the world around them, entirely new services and business models are being built around connected digital display. With a reliable partner for worldwide mobile connectivity, digital signage providers like FirstView can continue to innovate and grow.
WHAT’S NEXT - INTERACTIVE CONTENT ON DIGITAL DISPLAYS

With “plug and play” digital signage, it becomes increasingly easy to customise messages for specific viewers. With the addition of sensors to displays, there are now solutions to automatically update content based on any number of local variables, such as displaying ads for umbrellas when it begins to rain.

Interactive technologies reduce pressures on staff, helping to assure that everyone gets the information they need and the experience they want. To create a relevant and personalised experience, customers can interact with digital displays using their mobile phones or touch screens. This has great potential to improve processes such as taking orders, check-in and payments.

INTERACTIVE CONTENT ON DIGITAL DISPLAYS

With “plug and play” digital signage, it becomes increasingly easy to customise messages for specific viewers. With the addition of sensors to displays, there are now solutions to automatically update content based on any number of local variables, such as displaying ads for umbrellas when it begins to rain.

Interactive technologies reduce pressures on staff, helping to assure that everyone gets the information they need and the experience they want. To create a relevant and personalised experience, customers can interact with digital displays using their mobile phones or touch screens. This has great potential to improve processes such as taking orders, check-in and payments.

DIGITAL SIGNAGE GETS PERSONAL

Displays integrated with sensor technology have the ability to deliver targeted and location-specific messages, which leads to better experiences and increase purchases. One such solution employs Bluetooth Low Energy (BLE) beacons that can trigger messages by communicating with smartphone apps as the audience comes within range.

For example, a customer with a loyalty app on their phone triggers a customised message on a display when they enter a store, or when they walk down the aisle in a shop. This BLE-based solution can also trigger wayfinding messages on screens in hospitals, large venues, factories and warehouses.

Face recognition software working with a small camera connected to displays can recognise the audience’s gender and other variables, which gives the CMS the needed insight to display targeted messages. By collecting anonymous demographic data, face recognition-enabled displays also provide feedback on who’s looking at the displays, and how they react to messages.
HARVESTING VALUABLE CONSUMER DATA WITH DIGITAL SIGNAGE

Digital displays have the potential to interact with the IoT much more than they do today. As we see in many industries, aggregated data is laying the foundation for entirely new services and business models connected to digital displays.

More feedback from the audience, combined with more opportunity to interact, is expanding the possibilities of digital signage. Using data effectively to solve problems creates even more value for digital signage, with opportunities to expand into novel applications and new markets.

POINTS TO CONSIDER

With professional SIM management controlled by the service provider, a SIM-enabled cellular solution minimises installation and operational costs and makes SLA fulfilment easier. The price of the connection correlates to the data needed and any requirements from the end customer. Whereas using the customers network is considered free of charge, companies need to consider the costs from trouble shooting and service visits for local network related issues, costs from handling different national operators, costs of customer dissatisfaction from outages or insufficient security levels and ultimately the risk of SLA penalties. As display fleets grow geographically the importance of having control of the whole chain as well as cost predictability will continue to increase.

THE BENEFITS OF TELENOR CONNEXION GLOBAL SIMS

- Speeds up installation
- Simplifies high-volume roll outs
- Better SLA control – no issues with customer LAN or firewalls
- Added security with VPN
- Strong SIM and asset management in SIM Service Portal
- Flexible mobility of POS
- POS can be pre-configured before installation
- Installation is easy – requires no specialised know-how
YOUR PARTNER FOR PLUG AND PLAY SIGNAGE

A “plug and play” solution enabled by SIM cards helps digital signage gain more control over content delivery. To realise those benefits, digital signage service integrators need a reliable connectivity partner who can offer a combination of technical expertise, insight and skill.

Based on our experience operating complex projects around the globe, we offer our clients a well-tested process for building IoT and connected device solutions. For more information on Telenor Connexion’s Global SIM solutions for digital signage, please contact us at sales@telenorconnexion.com