WHITE PAPER: THE COST ADVANTAGE OF SMART SIGNAGE

A TCO Analysis of Samsung's Smart Signage Platform Compared to Traditional Digital Signage

THE NEW BUSINESS EXPERIENCE

SAMSUNG

THE ADVANTAGES AND HIDDEN COSTS OF DIGITAL SIGNAGE

We live in a multiscreen world. Nearly every consumer interacts on a daily basis with a TV screen at home, a smartphone screen on the move, a computing device screen in the office, and increasingly, a digital signage screen when shopping, at the doctor's office or quick serve restaurant. Whether your customer is just browsing, actively shopping, or waiting in line, digital signage can have a tangible impact on buying behavior.

According to a Nielsen research study, sales of four out of five grocery products experienced up to 33% increase when promoted on digital signage.[1] And digital signage at checkout lines reduced "perceived wait time" up to 40%.[2]

HIDDEN COSTS

Despite the clear advantages of digital signage to drive consumer behavior, companies are hesitant to make a major investment due to the high upfront and ongoing support costs of traditional digital signage solutions.

While the cost of the actual display screen is relatively straightforward, there are many "hidden" costs that become apparent when companies research traditional digital signage solutions.

For example, in order to host and play the content, a separate media player or a PC is required. Mounting a display screen and media player can be expensive. The electricity cost of running two devices can add up. And developing content often means using a proprietary content management system that requires a high level of expertise. Then, year after year, someone has to manage the digital signage network, create and deliver content, and handle any equipment issues.

These hidden costs are like an iceberg – the cost of the display screen is seen, but the other costs are under the surface and can account for up to 70% of the Total Cost of Ownership (TCO).

Benefits of Digital Signage

- Engage customers with dynamic messaging
- Increase sales revenue
- Reduce paper signage print costs and environmental impact
- Simplify menu and promotional offers
- Enable day-parting
- Remotely update content
- Cross-sell complementary products and services
- Reinforce your brand and modernize the decor

4 out of 5 grocery products had a

33%

sales increase using digital signage

- Nielsen Research

Up to 70% of the cost of digital signage lies below the surface

A NEW APPROACH TO SIMPLIFYING DIGITAL SIGNAGE

Recognizing these cost and complexity challenges, the digital signage industry is leveraging newer technologies from Smart TVs and system-on-chips (SoC) to simplify deployments.

Samsung's Smart Signage Platform (SSP) is an integrated digital signage solution designed to reduce the cost of deploying and managing digital signage.

Traditional digital signage solutions were kludged together by connecting a media player (or PC) to an LCD display. This legacy burdens them with the cost of multiple devices, expensive installation, and proprietary software management.

Samsung Smart Signage Platform (SSP) represents a "clean sheet" approach that is not limited by the legacy architecture. There are two key differences to the Samsung approach that result in lower costs and complexity.

First, Samsung has embedded a powerful media player directly into the display, so there is no need for a separate media player.

Select models of Samsung commercial-grade displays have an embedded system-on-chip module that includes a quad-core CPU, fast memory, a versatile video processor and content storage.

By integrating the media player into the display, the purchase cost of a media player, mounting bracket and cables are eliminated and installation costs are lower.

Second, the Smart Signage Platform provides greater flexibility in using content development and management.

For small-scale deployments, the included pre-built templates make it easy to design and manage compelling content.

For more complex deployments, the optional MagicInfo software enables on-site content development and management.

For large-scale deployments where centralized management of the entire network is required, Samsung also has an eco-system of independent providers of content management systems.

In order to compare the total cost of deploying a traditional digital signage solution and an SSP-based solution, Samsung commissioned a third-party research organization to conduct a comprehensive TCO analysis. This white paper provides a summary of the empirical research.

WHAT'S IN A SMART SIGNAGE DISPLAY?

CPU
Quad Core Processor

Memory
1.5GB DDR3

Storage
4GB FDM

Signage Software
MagicInfo or
SSP Partner CMS-Ready

Video Processor
Full Codec, High Performance
WMV , MP4, H.264

TOTAL COST OF OWNERSHIP

Total Cost of Ownership is simple in concept, but often difficult to quantify with "real world" data. And since every digital signage deployment is different in size, scope, and complexity, a single TCO model may not fit the company operating conditions. In order to overcome these limitations, our TCO analysis looked at three different deployment scenarios.

Scenario 1

Standalone Deployment

The organization has a single location and wants to deploy several displays. The organization will likely not have a digital signage expert, so needs an easy-to-manage system that can be updated at each display.

Businesses that are a good fit for this scenario include:

- Family-owned restaurants
- Local retailers
- Professional services
- Community banks

Scenario 2

On-Premise Server Deployment

The organization has several buildings and wants to deploy multiple displays at each location. The organization has some technical expertise and wants to manage the content from a single server or PC and to update all the displays.

Businesses that are a good fit for this scenario include:

- Auto dealerships
- Community hospitals
- Colleges or universities
- Corporate campuses

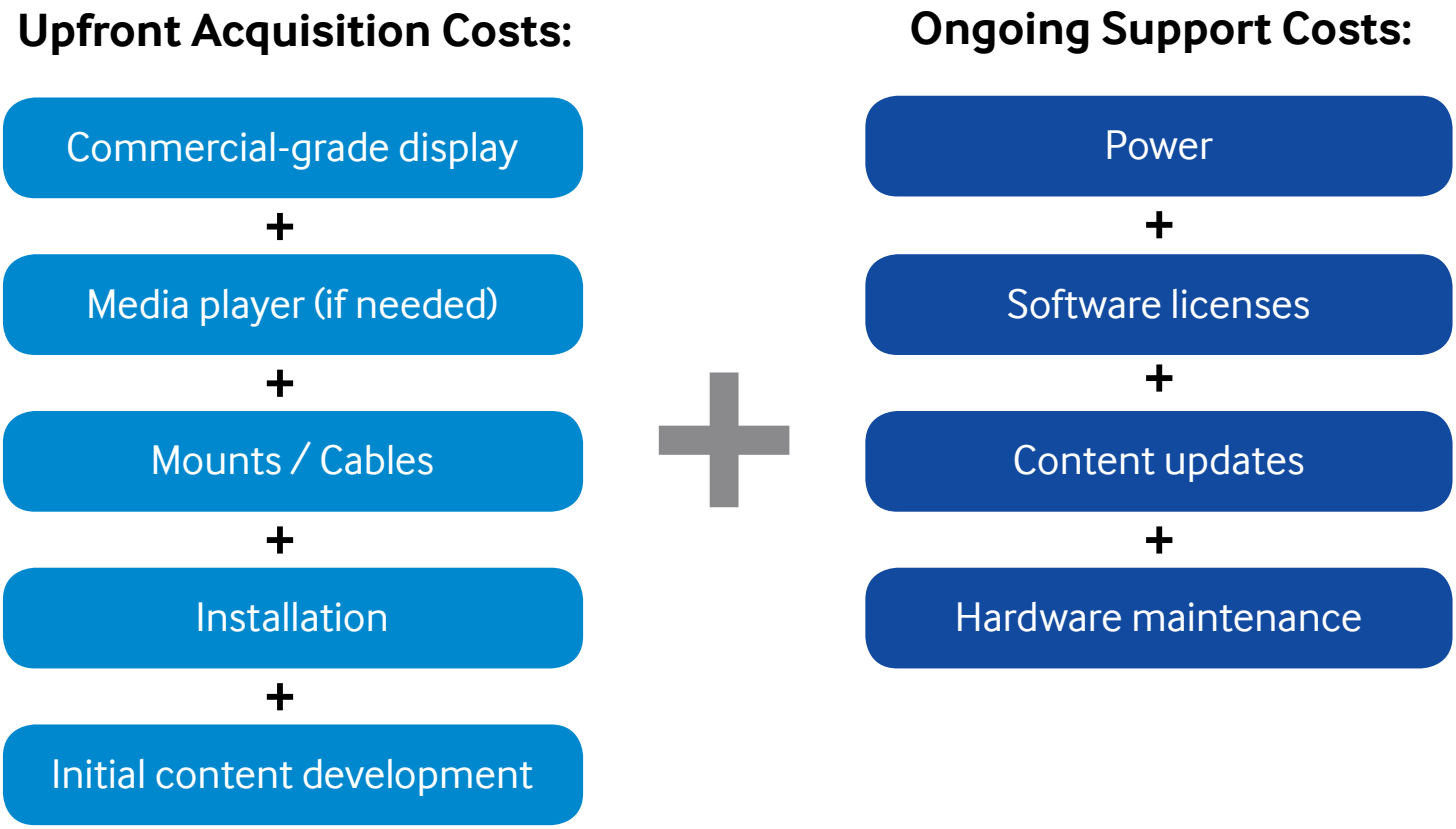
Scenario 3

Web-enabled Deployment

The organization has a regional or national footprint of hundreds of locations and wants to deploy multiple displays at each location. The organization uses third-party web-enabled content management software.

Businesses that are a good fit for this scenario include:

- Restaurant chains
- Multi-store retailers
- Regional/National banks
- Financial services companies



TCO ANALYSIS METHODOLOGY & ASSUMPTIONS

For each of the three deployment scenarios, the TCO model examines both upfront acquisition costs and ongoing support costs.

Hardware prices for the displays, media players, server, mounts, and cables reflect pricing from national resellers as of February 24, 2014.

In-depth interviews with systems integrators and software vendors were conducted to estimate software, installation, and hardware maintenance costs.

Upfront Acquisition Costs

For all three scenarios, a Samsung SSP-enabled 48" LED back-lit display (model DB48D) is compared to a 46" LED display from another top tier vendor.[3]

A Peerless PT650 wall mount anchors the Samsung SSP-enabled displays, while a more expensive Peerless DST660 wall mount is required to anchor both the display and media player. Samsung SSP-based displays do not need A/V cables to connect from the media player to the display while the traditional display does.

Ongoing Support Costs

Annual electricity cost assumes 300 day operation at 14 hours per day with a $0.10 per KWh electricity rate.

All other cost elements vary by scenario type and are detailed in each scenario discussion.

Depending on the size, location, and the complexity of deployment, actual costs may vary.

The ongoing support costs are modeled for a three-year life to align with typical hardware manufacturer warranties. In reality, most digital signage systems will be operational longer, so any ongoing cost benefits will further accumulate with longer timeframes.

Since each scenario has unique size, scale, and complexity characteristics, the TCO elements and costs will differ.

Scenario **1**

3 Displays
1 Location

STANDALONE DEPLOYMENT

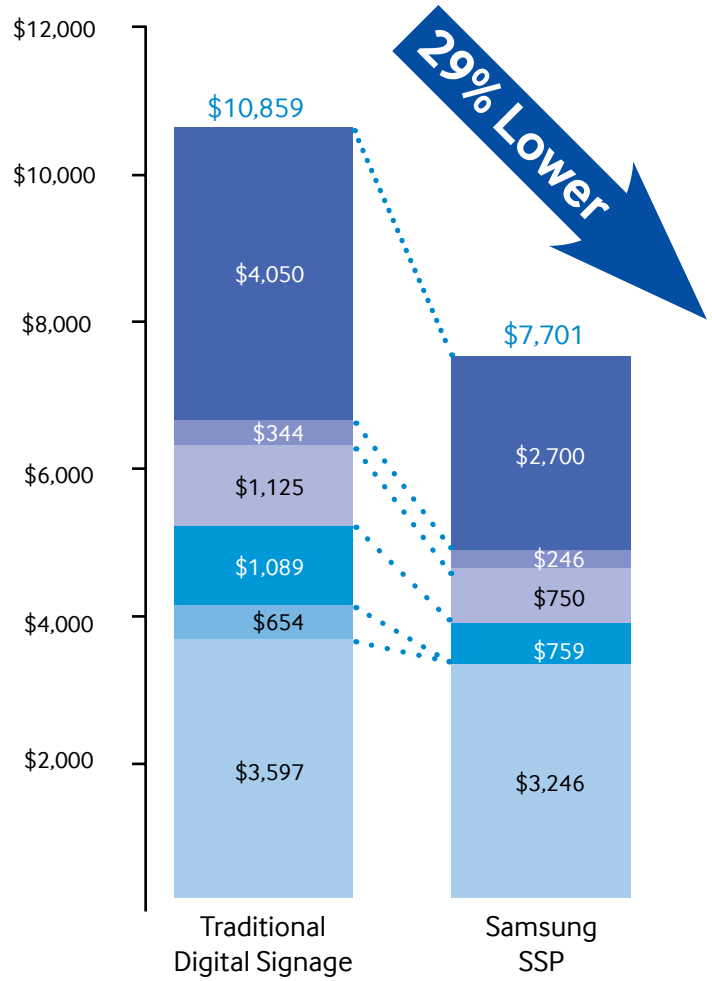
For the Standalone Deployment scenario, the TCO model assumes three LED back-lit displays are deployed in a single location. A top-tier vendor's 46" display is compared to a 48" Samsung D Series display. In addition to the larger screen size, the Samsung display also includes a built-in media player. The traditional display requires an external media player[4] which takes 30 minutes to install and set up (based on interviews with system integrators and installers) by a digital signage installer whose charge rate is $90/hour.

Content development (initial and ongoing) with traditional digital signage is more labor intensive since it has to be done on a PC using Microsoft PowerPoint or a graphic design package. In contrast, Samsung SSP-enabled displays include easy-to-use templates for faster content development. A content developer charge rate is $75/hour (average free-lance graphic designer rate).

Finally, electricity usage is higher with traditional digital signage since two devices (display and media player) have to be powered.

For businesses considering more than three displays, simply multiply per unit costs by the number of displays to quantify approximate total costs. *See endnotes for details of TCO assumptions.

Cost Breakdown



Cost Per Display Over Three Years

Traditional Digital Signage
$3,620

VS.

Samsung SSP
$2,567

LEGEND
- Content Updates (3yr)
- Power (3yr)
- Initial Content Development
- Mounts/Cable & Installation
- Media Players
- Displays

Scenario **2**

10 Displays
5 Locations

ON-PREMISE SERVER DEPLOYMENT

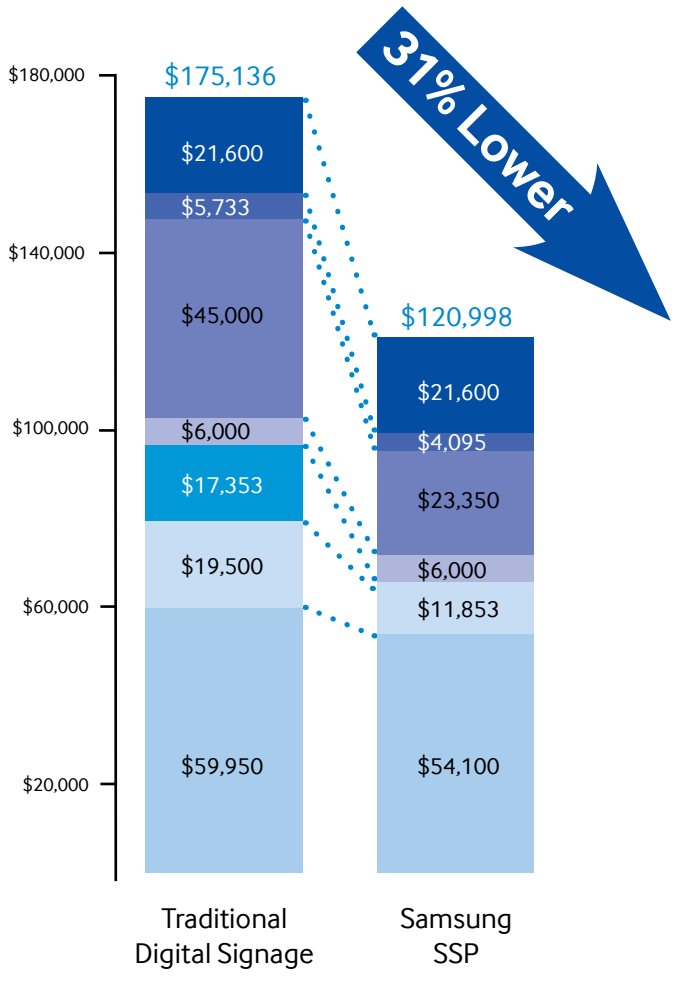
For the On-premise Server Scenario deployment, the TCO model assumes 10 LED back-lit displays are deployed at five separate locations for a total of 50 displays. A top tier vendor's 46" display is compared to a Samsung D Series display. In addition to the larger screen, the Samsung display includes an on-board media player. The built-in media player reduces cabling, installation costs and saves space.

Given the additional complexity and network requirements of centralized server management, the traditional digital signage deployment requires a more robust, mid-level media player[5] which takes an additional 25 hours to install (30 minutes of extra work in mounting, wiring, and setting up each media player). A digital signage installer charge rate is assumed to be $90/hour (average of system integrator rates).

For the traditional digital signage solution, a content management software license fee of $25 per month per display is assumed. For Samsung SSP, the optional MagicInfo Premium software license (a one-time fee of $467) is added. Since both systems use sophisticated CMS, the content development costs are the same. A content developer charge rate is assumed to be $75/hour (average free-lance graphic designer rate).

For businesses considering more than 50 displays, simply multiply per unit costs by the number of displays to quantify approximate total costs. *See endnotes for details of TCO assumptions.

Cost Breakdown



Cost Per Display Over Three Years

Traditional Digital Signage
$3,503

VS.

Samsung SSP
$2,420

LEGEND

- Content Updates (3yr)
- Power (3yr)
- Software licenses (3yr)
- Initial Content Development
- Mounts/Cable & Installation
- Media Players
- Displays

Scenario **3**

5 Displays
120 Locations

WEB-ENABLED DEPLOYMENT

For a large-scale deployment that spans hundreds of locations spread across large distances, the optimal deployment scenario would be to use a cloud-based management solution to manage the content. The TCO model assumes five displays are deployed at 120 separate locations for a total of 600 displays.

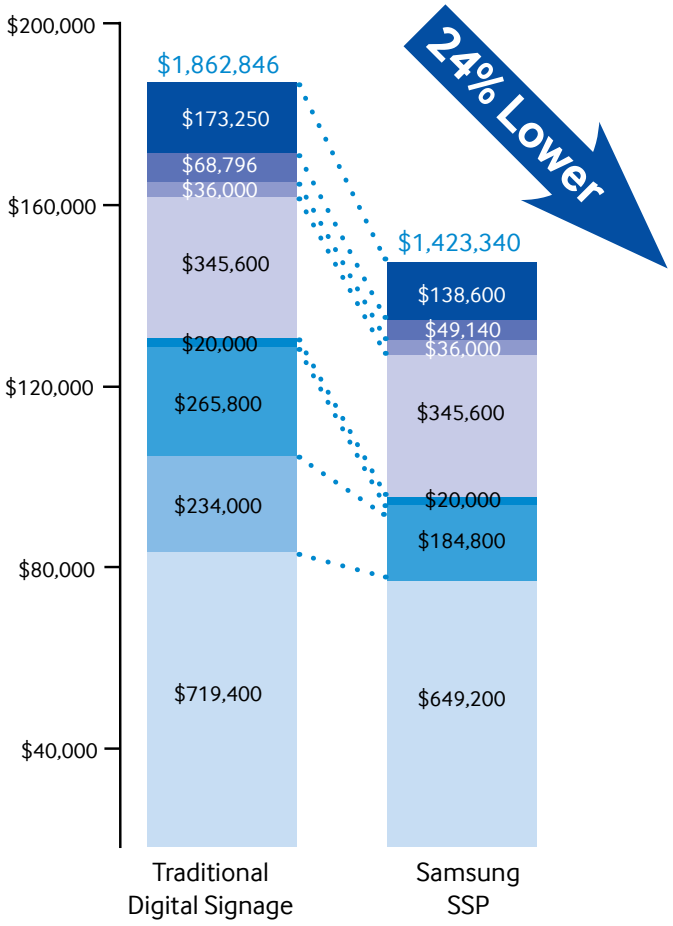
A top tier vendor's 46" display is compared to a Samsung D Series display. In addition to the larger screen, the Samsung display includes an on-board media player. The built-in media player reduces cabling, installation costs and saves space. The traditional digital signage deployment requires a mid-level media player[5] which takes an additional 300 hours to install (30 minutes of extra work in mounting, wiring, and setting up each media player).

A digital signage installer charge rate is assumed to be $90/hour (average of system integrator rates).

The Web-enabled model assumes that a third-party CMS platform is used in both cases. Given the larger deployment size, an average CMS license fee of $16 per month per display is assumed (based on interviews with digital signage providers). A content developer charge rate is assumed to be $100/hour (average marketing agency graphic designer rate).

For businesses considering more than 600 displays, simply multiply per unit costs by the number of displays to quantify approximate total costs. *See endnotes for details of TCO assumptions.

Cost Breakdown



Cost Per Display Over Three Years

Traditional Digital Signage
$3,105

VS.

Samsung SSP
$2,372

LEGEND
- Hardware Maintenance (3yr)
- Power (3yr)
- Content Updates (3yr)
- Software licenses (3yr)
- Initial Content Development
- Mounts/Cable & Installation
- Media Players
- Displays

SUMMARY

The comprehensive TCO analysis comparing traditional digital signage with Samsung Smart Signage Platform (SSP) clearly demonstrates the significant upfront and ongoing cost advantage of Samsung SSP. Depending the deployment scenario, three year total cost savings can range from 24% to 31%.

Scenario 1 — Standalone Deployment

3 Displays
1 Location

Traditional vs SSP
29% Reduction
in TCO

$1,053
Per Display Savings

Scenario 2 — On-premise Server Deployment

10 Displays
5 Locations

Traditional vs SSP
31% Reduction
in TCO

$1,083
Per Display Savings

Scenario 3 — Web-Enabled Deployment

5 Displays
120 Locations

Traditional vs SSP
24% Reduction
in TCO

$733
Per Display Savings

The TCO savings are a result of several key differences in the design of the Samsung Smart Signage solution that minimize the number of devices and the complexity of installation and maintenance.

TCO Components	Traditional Digital Signage	Samsung Smart Signage
Upfront		
- Displays	More expensive	Less expensive
- Media players	Required	Not needed
- Mounts/Cables/Installation	More complex	Less complex
- Initial content development	More expensive	Less expensive
Ongoing		
- Software licenses	Proprietary	Open
- Content updates	More expensive	Less expensive
- Hardware Maintenance	Display + Player	Display only
- Power consumption	Display + Player	Display only

SMART SIGNAGE PLATFORM DISPLAYS

Samsung's new D Series commercial displays feature the next-generation Smart Signage Platform system-on-chip, which supports more advanced applications including touch and video wall configurations – all without the need for an external media player or PC. The new displays are built around an embedded media player featuring a Quad Core processor, 1.5GB of DDR3 memory and 4GB of onboard storage.

The mainstream DM and premium DH lineups also incorporate WiFi, eliminating the need for an Ethernet cable and opening up new opportunities for screen sharing or control via tablets and smartphones.

For standalone or server-based deployments, the D Series incorporates Samsung's MagicInfo content management software, featuring dozens of templates to quickly create dynamic content, as well as remotely make or schedule updates (license required).

Featuring direct-lit LED technology, the D Series commercial displays are thin, light and energy-efficient. With narrow 9mm bezels, the displays introduce a new industrial design identity. Their appearance can be customized to match the interior design of a space with optional trim kits available in several colors for easy and seamless installation.

DB Series: an entry-level lineup providing affordable access to Smart Signage Platform capabilities, rated for 16-hour daily operation

Sizes available: 32", 40", 48", 55"

DM Series: the broadest product line, rated for 24/7 operation and introducing built-in WiFi

Sizes available: 32", 40", 48", 55", 65", 75"

DH Series: the premium lineup offering 700nit brightness, 24/7 operation and built-in WiFi

Sizes available: 40", 48", 55"

ENDNOTES

1. http://ovab.eu/2010/01/the-nielsen-study-confirms-it-in-store-tv-works
2. http://www.smallbusinesscomputing.com/news/article.php/3879361/Digital-Sinage-for-Small-Business.htm
3. NEC V463
4. BrightSign hd120
5. BrightSign xd230

Scenario 1 Assumptions: Standalone Deployment at a Single Location

TCO Components	Traditional Digital Signage	Samsung Smart Signage
Upfront		
Displays	Tier 1 vendor 46" display	Samsung DB Series 48" display
Media players	Entry-level MP	N/A
Mounts / Cables / Install	• Mount for display + player • LAN, A/V cables • Install 6 total devices	• Mount for display only • LAN cable only • Install 3 displays
Initial content development	15 graphic designer hours	10 hours (template based)
Ongoing		
Software licenses	N/A (content design on PC)	Templates included
Content updates	1.5 hours per month	1 hour per month
Power consumption	3 Displays + 3 Media Players	3 Displays

Scenario 2 Assumptions: On-Premise Server Deployment

TCO Components	Traditional Digital Signage	Samsung Smart Signage
Upfront		
Displays	Tier 1 vendor 46" display	Samsung DB Series 48" display
Media players	Mid-level MP	N/A
Mounts / Cables / Install	• Mount for display + player • LAN, A/V cables • Install 100 total devices	• Mount for display only • LAN cable only • Install 50 displays
Initial content development	80 hours HTML 5 development	80 hours HTML 5 development
Ongoing		
Software licenses	$25/mo x 36 months	One time $467 fee
Content updates	8 hours/mo x 36 months	8 hours/mo x 36 months
Power consumption	50 Displays + 50 Media Players	50 Displays

Scenario 3 Assumptions: Web-Enabled Deployment

TCO Components	Traditional Digital Signage	Samsung Smart Signage
Upfront		
Displays	Tier 1 vendor 46" display	Samsung DB Series 48" display
Media players	Mid-level MP	N/A
Mounts / Cables / Install	• Mount for display + player • LAN, A/V cables • Install 1,200 total devices	• Mount for display only • LAN cable only • Install 600 displays
Initial content development	200 hours HTML 5 development	200 hours HTML 5 development
Ongoing		
Software licenses	$16/mo x 36 months	$16/mo x 36 months
Content updates	10 hours/mo x 36 months	10 hours/mo x 36 months
Power consumption	600 Displays + 600 Media Players	600 Displays
Hardware Maintenance	600 Displays + 600 Media Players	600 Displays