ComQi

# A PLAYER FOR ALL REASONS

*A guide to selecting the right media player for your digital signage needs*

## COMQI WHITE PAPER

*Choosing the right digital signage media player for the task and environment is utterly critical to the success of a digital signage project. Get it wrong, and you may have steadily escalating on-site repair and replacement costs due to players that aren't able to keep up with the demands of ever more sophisticated content. In this paper, we'll walk you through what you need to know and watch out for, and help you pair the right player with your project.*

## It's not obvious, is it?

The many different little boxes that are touted as digital signage players may take on different shapes and looks, but there's nothing that's going to tell you, "There… THAT'S the right one!"

But what's right is nuanced.  What seems right – such as the one that costs the most – might not actually be right.  Same goes for the one that seems to have the most computing power.

But choosing the right media player for the task and environment is utterly critical to the success of a digital signage project.  Get it wrong, and you may have steadily escalating on-site repair and replacement costs due to players that aren't able to keep up with the demands of ever more sophisticated content.

Uptime has always been at the heart of what ComQi delivers for partners and customers.  We were manufacturing ultra-reliable media players more than a decade ago.  ComQi's foundational software platform was providing deep, sophisticated device monitoring and management tools, via the Web, years before it became the standard in digital signage.

We have a broad range of media players that were specified based on experience and insights, the variety of usages we see in the field, and the highly diverse requirements of customers.

In this paper, we'll walk you through what you need to know and watch out for, and help you pair the right player with you project.

## Media Player Basics

### What They Are:

Media players are the computing devices at the edges of digital signage networks that store media files and templates and play out that content based on scheduling instructions it gets over the Internet, most typically, from a central server. Good devices, coupled with sophisticated management systems, can produce composite information that couple and present media and data.

## A PLAYER FOR ALL REASONS

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### How They're Different:

Media players tend to be small, so that they can be mounted and hidden immediately behind the screens they're sending a signal to. Some manufacturers have embedded media players into commercial displays with System on Chip technology such as Samsung SSP. Usually, they're devices stripped of any extraneous software applications and optimized for playing back video and other types of media files.

### How They Work:

Usually, devices get fresh content and instructions from central servers – either pulled down at regular intervals via the Internet, or pushed to the devices by a central server, again at set intervals, or on demand. In the simplest installations, schedules and content can be uploaded to devices using memory cards or sticks.

### What They Use:

Most digital signage players run on the Windows or Linux operating system, though they are often controlled centrally using Web browsers that are not tied to any specific operating system. Recently, many digital signage companies have also introduced low-cost players that run on the Android operating system used by mobile devices.

### PCs Or Devices:

Most digital signage players are based on what's called the x 86 chip designs, and use the same types of processors found in everything from consumer laptops to super-computers. Recently, the tiny microprocessors used in smartphones and tablets have started to match the computing power of low-end x86 PCs. But x86 chipmakers have responded by developing processors that are competing in the tablet and phone markets for the first time.

### Operating Systems

X86 media players generally run Windows or Linux where lower-cost ARM chips run Linux or Android (a variant of Linux). However, Android software for mobile devices is changing constantly and was never intended for digital signage. That's because the design assumed Android devices would be directly managed by their owners via the Google Play Store, and not managed remotely via a network management tool.

### Advanced Capabilities

Different devices have different capabilities. Advanced capabilities such as: 4K video playback, multiple screens per player, player to player synchronization, screen-failover, player-to-player content sharing, data integration at the player level, video walls, device integration, visual analytics, beacon capabilities, location awareness, background processes and real-time event handling are all largely limited to x86-based players.

## Special Purpose Players

While the majority of digital signage applications work well with standard players, projects such as large video walls, ultra-high-resolution displays and those with tough environmentally demands on heating, cooling or vibration can require specialty players. These players may have components such as multi-head video cards to output multiple video signals.

## Bringing Your Own Device

Digital signage solutions providers like to sell their own range of preferred media players because they know what works, what's reliable and when manufacturers are making changes.  They also prefer to have access and control on the various software elements that run on devices so they can ensure reliability and compatibility.  End-users who want to use their own devices as players are introducing a range of unknowns and introducing new costs to ensure these devices are both suitable and compatible.

# Use Cases: Matching the Player to the Task

Ask people who spend their working lives deploying digital signage networks and they'll confirm that every job is a little bit different. Sometimes, the devices get housed in pristine server rooms where environmental conditions are perfect. More often, conditions are less than ideal.

## Some examples ...

**Fast-food/fast-casual dining**: The air in food service environments is filled with particulate matter – flour, dust and grease stirred up and circulating in the kitchen areas and beyond all day, every day. Media players cooled by fans draw that floating stuff in, and can lock up within weeks of being installed. Dead fans mean overheated media players and black screens. In these environments, use fanless devices that don't need moving parts to stay cool.

**Multi-channels:** Not all players can capably support running more than a single distinct video output. If your network needs several outputs to drive a video wall with distinct content in different zones, that further narrows the options and increases costs, because of a need for specialty graphics processors.

**Ultra HD:** 4K ultra high definition displays are now finding their way into the consumer mainstream, and into digital signage projects. To drive these incredibly crisp screens, you'll need devices with the graphic acceleration and processing horsepower to handle these resource-intensive files, and possibly

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**Player Applications**

- **Fast Food** - Player should be fanless due to overheating in dusty, hot conditions

- **Video Walls** -  Multi-channel outputs require high performance player with specialty graphics processors

- **Ultra HD Crisp Screens-** Players must handle intensive files with increased hard disk capacity and network connectivity

- **Interactive Content** - Requires an expandable player

increased hard disk capacity and network connectivity, as 4K HD files can be huge compared to regular HD.

**Interactive**: Consumers now expect and anticipate interaction with screens, and direct ties to their mobile devices through such things as NFC tags and beacons. If you anticipate a need now or later for interaction, most consumer-grade devices won't support the inputs needed as triggers. Ensure your player is expandable.

# Department of Debunk

Let's explore and bust some myths that persist about digital signage media players, so you can filter the noise and make better informed decisions.

## All devices can be managed

Devices built for the consumer market – like set-top boxes and HDMI sticks – rarely have even a fraction of the monitoring and remote management of full digital signage players.  Android devices are created assuming they're each controlled by an end-user.

## Every device has an upgrade path

The physical and software design of a device sometimes means upgrades are impossible or dependent on manufacturers.  For instance, remote upgrades of the operating system are not possible on consumer Android devices or Samsung all-in-one SSP screens/players, and even changing the device's configuration may need to be performed by a trained technician.

## Product availability is consistent

In the consumer market, the components and specs of devices can change quickly and without notice. Industrial devices have much longer product lifespans.

## HTML5 Does Everything

It's a standard that was only finalized in late 2014, can't do everything, and the output can look different by browser/player.   HTML5 is also missing some of the capabilities of Flash that reduced the cost of content creation.  That said, it's a great step forward for the industry and is here to stay.

## Solid State Rules

Hard disk drives with moving parts tend to have the same failure rates as flash memory drives, and reliability can owe more to the manufacturer.  Meanwhile, solid state drivers are more expensive per GB than conventional hard drives.
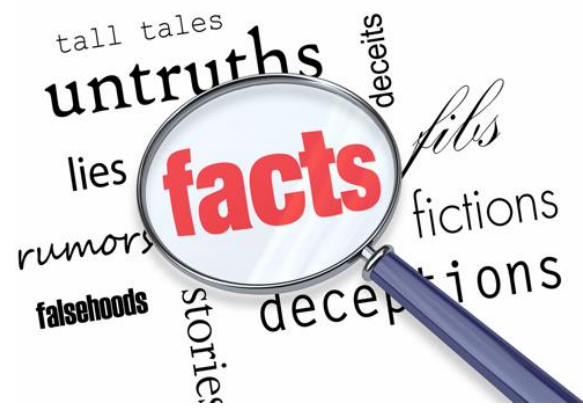
### Android Saves Money

Low reliability rates, coupled with onsite repair labor, replacement and shipping costs, often make Total Cost of Ownership higher than x86 players. Many Android digital signage players are considered disposable.  Especially, the more powerful Android players aren't any cheaper than low end x86 boxes with similar capabilities.

### Streaming Is Solid

Video streaming has improved dramatically, but anyone who spends time on the Internet knows connections drop and playback stalls.

### One Size Fits All

There's a reason why there are cars, trucks, SUVs and vans. Different demands, different vehicles. Same thing applies to media players.  Android, for instance, currently can't support more than one screen.

### Consumer Devices Will Do

Electronics devices engineered for home use assume light operating hours and controlled, pleasant conditions, not 24/7 in busy, messy and rough environments.

### Plug And Play Really Happens

Device and software marketed as being as "Easy As 1,2,3" usually have more steps and costs to establish reliable connections and device compatibility.

### Interactive Is Essential

Touchscreens and other interactive features are powerful when relevant and meaningful, but sometimes all that's needed is good creative on a screen.

### The Future Is Proofed

Not all devices or systems are designed to handle in software or hardware the future needs of a network, such as adding NFC or other peripheral devices, or tools such as video audience measurement.

# The Cost of Wrong Decisions

Maybe you've heard how making the wrong player decision could provide expensive, but didn't quite understand how. Here are just some of the ways the wrong hardware selection can hurt.

### Reliability

Hardware that can't handle things such as 24/7 use, airborne debris or out of norm temperatures will go down. That will lead to:

- Costly service calls, often called truck rolls

- Replacement costs for equipment
- Opportunity cost for lost sales and other impacts when screens are off

## Quality

Hardware that isn't matched up with the media demands of the network – such as high-resolution video or multiple channels – and you may see:

- Jerky animation
- Video "tearing" and dropped video frames
- Skipped playback
- Inability to support multiple content layers
- Mismatched output resolutions and scaling

## Business Opportunity

Poorly performing networks rarely expand, and suppliers are at risk of losing customer confidence and future business. Solutions providers are regarded as trusted advisors, and when that trust is lost through sub-par performance and service delivery, it's hard to restore.

# Getting Player Selection Right

## What to think about …

- ✓ Don't be fixated on small form factors. Most devices are now small enough for almost any digital signage project.  Small devices that are irregularly shaped with lots of cables can in fact be harder to mount.

- ✓ Plan out where the device will reside, both in terms of size and environmental conditions such as dust and air flow. Many consumer devices are not designed for permanent installation, and come in irregular form factors that introduce additional cabling and installation requirements.

- ✓ Hardware cost is no longer a barrier to entry to digital signage, even for demanding applications like video walls.

- ✓ Remote device management capability is as critical to ongoing success as playback quality. You should be able to monitor and troubleshoot problems from a remote desktop, and only need to go on-site when something mechanical is broken.

- ✓ Ensure you can keep your players secure. Will your platform and players allow patches to be applied remotely to address newfound security threats, or will each site need to be visited in person (adding enormous labor costs)?

- ✓ Don't just factor in what you need now. Think about the three-to-five year operating window of the network, so you're future-proofed on what the players can do and support.

- ✓ Ensure the supply chain is reliable. How long will your selected player, with identical specs, be available and supported?

# Summing It Up

By now you'll have been fully grounded on why selecting the right player is critical, and the thinking that should go into the selection process. Here's how to move forward:

1.  Sort out what your network will be doing and showing, when it launches, and over the next four to five years.
    That will tell you about things like the type of content, storage requirements, number of outputs, graphic processing demands and whether interactive may get added. Future-proof when and if it makes sense.

2.  Settle on the player location.
    Where will the players be located, and what are the environmental conditions. Keep in mind a player located in the clean, controlled back office of a fast food restaurant faces very different conditions than one mounted behind a screen by the hot, dusty kitchen area.

3.  Build your budget
    Look at all the capital and operating costs of a network, including creative and the ongoing costs of monitoring, troubleshooting and fixing remote players. Understanding all costs will better frame the merits and risks of cutting corners and expenditures on players. The extra $200 a unit upfront for a player often equates to the $200 never spent, and the opportunity never lost, on fixing or replacing lower-cost equipment.

4.  Select on purpose, not price
    There's always something that costs less. Spend what the task requires, and the savings will follow.

5.  Trust experienced vendors
    Start-ups and no-frills companies often have to make their money through tactics like marking up the wholesale cost of media players. Companies like ComQi aren't in that business, and recommend players because they greatly prefer manufacturers and equipment they know and trust.

# ComQi Media Player Selector

The following chart outlines ComQi's range of media players as of Q3 2015.  The marketplace moves quickly and ComQi's product line is constantly evolving with new features and players on a quarterly basis.

Choose the use cases and content support requirements for your digital signage network and match to the ComQi Media Player that best meets your project demands.

| Player | Use Cases | Player $ | Performance | O/S | Content Support |
|---|---|---|---|---|---|
| SSP | (icons) | incl. | ★ | Proprietary | (icons) |
| Embedded | (icons) | $ | ★ | Android | (icon) |
| RP505 | (icons) | $ | ★★ | Linux | (icons) |
| RP512 | (icons) | $ | ★★ | Linux | (icons) |
| RP520 | (icons) | $ | ★★ | Linux | (icons) |
| RP623 | (icons) | $$ | ★★★ | Linux | (icons) (optional) |
| RP934 | (icons) | $$$ | ★★★ | Linux | (icons) (optional) |
| RP941 | (icons) | $$$ | ★★★ | Linux | (icons) (optional) |
| RP950 | (icons) | $$$ | ★★★★ | Linux | (icons) |
| RP760 | (icons) | $$$ | ★★★★ | Linux | (icons) |
| RP1010 | (icons) | $$$ | ★★★★ | Linux | (icons) |
| RP1020 | (icons) | $$$$ | ★★★★ | Linux | (icons) |
| RP1025 | (icons) | $$$$ | ★★★★ | Linux | (icons) |

**Legend: Use Cases**

| | | | |
|---|---|---|---|
| Interactive | ⇄ | Touch Kiosk | 👆 |
| Single Screen | ▢ | Real-time Data | 🕐 |
| Video Walls | ▢ ▦ | Music | ♫ |
| Menuboards | ⊟ | Synchronization | ⤢ |
| Multi-channel | ⊠ | Local Data Integration | 📍 |
| iBeacons | ((•)) | Spatially Aware Content | 🌐 |
| Video Analytics | ⌇ | | |

**Legend: Content Support**

| | | | |
|---|---|---|---|
| Dynamic Track | ⊘ | Video-In | ▶ |
| Campaign Track | 📅 | TV-In | 📺 |
| Alpha Channel Overlay | ☀ | Social Media | 💬 |
| Streaming Video | )) | | |

All players support standard static and video media formats, HTML5, message widgets, OSM messages, Content metadata and Data Channels.

# To learn more please contact:

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