

## The Advantages of Packaged Hardware over Software-Only

Pairing hardware with software gives you many advantages, and some companies are creating a new approach which offers the advantages of both software-only and appliances

### Definitions

From a user perspective, all video management systems are combined hardware and software solutions which give them the ability to better understand and protect a defined physical environment. What they are looking for is the confidence that a system will adapt to their evolving needs. Will they be able to choose the best hardware at the best price? Will they be able to add or change the system cost-effectively as new technologies emerge?

System providers and integrators use two categories to describe the relative level of “openness” a system has as well as to describe what the customer is buying:

- appliances — hardware engineered together with software to create an indivisible unit
- software-only — which can be run on any open-platform hardware of the user’s choosing

Airship Industries is developing systems designed to give the advantages of each of those two categories through a new approach:

- engineered open platform — software developed around a precise open platform hardware set, and sold as a unit

### We’re hearing a lot about software-only security video solutions

The digital surveillance field is in the thrall of software-only solutions. There are many circumstances in which software-only solutions better meet customer needs, and there are many reasons why these solutions are gaining such credibility and respect in the

industry. There also many reasons why engineering hardware together with software should happen at the development stage.

### **Why customers are excited about software-only**

The history of digital CCTV is populated with inefficient and proprietary technologies that have not worked compatibly together and which do not scale.

Customers are excited about the prospect of being able to combine best-of-breed applications around video management — analytics, building management, access control, POS. IT departments like the idea of choosing the video management OS and hardware platform that will conform to their established standards.

### **Why are appliances often a better choice?**

Before we get in to the nitty-gritty, let's look at the overall approach taken by providers whose pairing of hardware with software is innate to the product. These developers are taking hardware specs into consideration as much as possible to make the most efficient system. Ask Apple. Hardware *is* the solution — though the software is what makes the solution extraordinarily capable and appealing to use. You can't have an iPhone without the...iPhone.

Which is to say:

**Pre-troubleshooting** — With an appliance or engineered approach, the user or the system builder doesn't have to worry about choosing the hardware that supports the intended application of the software.

Software that is built for a specific motherboard, video card, network connection, cpu, RAM chip, and hard drive type, for example, will have a dependability and performance that hardware-agnostic software cannot match.

**Tested and true** — When a problem arises, is it the hardware? The software? The firmware? With a software-only solution it can be very difficult and time-consuming to identify the problem in order to satisfy a user support issue.

An appliance can ensure a better user experience: When software developers know precisely the hardware their product will run on, they can test their product more quickly and effectively, giving users better stability and fewer bugs.

**Controlled costs** — Appliances allow users to avoid a minefield of myths that can lead to delays and costs that are significantly higher than anticipated. Sellers of software-only solutions often claim things that are true for only a small subset of customers, such as “You can use your existing IT network,” and “Choosing your own hardware will save you money.”

The brass tacks are these: The customer is buying the same primary elements no matter what kind of solution he/she chooses: Software, encoder (whether it’s in the camera or in the server), cabling or network and the labor to install it, servers with storage space for data, cameras, and of course monitors and workstations. The difference is in the controllability of the costs.

A customer buying an appliance today takes markup from the DVR manufacture and the integrator. But with software-only solutions, the costs of the system are not known; the software-only customer, in most installations, bears elastic costs for integration, engineering, support, IT staff, and other costs associated with making the system work well on the hardware.

### **But aren’t software-only systems more scalable?**

Not in essence — but scalability has been slow or incomplete in coming. There is a long tradition of locked-down appliances that merely record from a camera onto a drive, without third party integration or the ability to add storage or reassign/add cameras easily and without disruption.

In deployments with large camera counts, software-only solutions allow users to centralize video storage in a single, efficient server or on multiple servers that can be configured to easily meet changing needs. With appliance recording, video is recorded directly on onto each server’s drive space.

Engineered open platform solutions are an evolution of the old appliance approach, is giving users the unlimited scalability of software-only — with the stability and controlled costs of appliances. These systems provide IT-level visibility of system events and allow users to centrally manage their cameras, users, and alarm response programs.

### **And what about being locked into a proprietary “jail”?**

A packaged solution, an appliance, isn't necessarily proprietary. Many are, as we have mentioned, and work well for small deployments at a low cost. But new engineered open platform video management solutions from companies are built from non-proprietary hardware that can be adapted to accommodate new video formats, more cameras of any type, third-party integrations, and storage outside the server chassis — as needs arise.

Powerful, well-written software packaged and tested with standard hardware can give users video management that integrates easily with the IP cameras, video analytics, POS systems, security-specific keyboards, and other data and input systems from the provider of their choice.

### **Can you get the benefits of hardware openness with a packaged solution?**

The ability to pick and choose best-of-breed hardware is a benefit that sells well to those who have experience with appliances that locked people into limited integration scenarios. There are plenty of those on the market; many manufacturers have been “innovating” by buying smaller pieces of technology and then trying to make them work together with spotty success.

Many other appliance makers have been developing proprietary integrations that are not as useful as the vertical-specific products like video analytics that their customers want to use. The appliance industry's trouble offering truly innovative and flexible options to their users does not prevent there being a clear path to better customer value and true innovation.

Packaging the right hardware with the surveillance software on an open platform allows for as many customer-driven integrations, customizations, evolutions, and modifications as are required to move forward with technology and social changes.

### **When appliance hardware reaches the end of its life, the user must buy the software licenses again**

With software-only solutions, the software can travel from hardware to hardware without incurring new licensing fees. With licenses at US\$99-400 per channel for recording, live view, playback/search, and export functions, this is a significant advantage for users.

It's plausible, but when you consider implementation and ongoing support costs over the life of any type of system, there is no identifiable cost advantage to being able to move software from hardware to hardware.

Buyers should consider:

- **Hardware** will always have a failure rate based on age or conditions or just plain bad luck. Whether you replace hardware from a variety of manufacturers incrementally, according to a variety of different warranty agreements, or whether you let one vendor service one warranty agreement with you, your costs are likely to be the same.
- **Software** you begin with will over the course of the lifespan of a typical appliance (currently pegged at about 5 years) will have undergone many releases and upgrades, which incur costs of their own, such as software maintenance, upgrades, support, integration costs, IT staff costs. A software-only provider is much likelier to charge a premium for these evolutionary costs than a provider of packaged solutions, as their business model has no other diversifying revenue sources.

### **Under what conditions is software-only not viable?**

**An existing need for analog** — An overwhelming majority of the world has yet to make the upgrade from VCR surveillance recording to digital recording (70% of casinos, for example). Many organizations have existing coaxial infrastructure that is important to retain because they:

- **only want to add some cameras & IP recording** — it wouldn't make sense to rip out and replace what they have. A good hybrid IP-analog system will allow them to add IP cameras wherever they need them, and to use new and existing analog cameras at other camera locations.
- **have no tolerance for latency** — the video stream, if it's encoded at the camera source, takes time to travel to the server, and therefore the image is not available to the live viewer without a delay. Casinos and other specialty or mission-critical users have no tolerance for latency.

**Budget planning and funding** — A user who needs to present a hard-and-fast budget to Purchasing will be able to do so only with a combined hardware-and-software solution. Costs are rolled into one and can include installation, support, and training.

With a software-only solution, costs are vulnerable to ballooning due to training needs (convergence between physical security and IT staff), unplanned engineering support and hardware-software diagnostics, and the installation of an additional IT network when the existing network becomes overtaxed by video data traffic.

### **So when is software-only best?**

Software-only is the ideal solution for users with:

- Little or no existing analog infrastructure
- All new IP-based infrastructure
- Primacy of tightly controlled IT department standards
- Available internal IT staff resources
- Ability to confirm software/hardware platform performance (reference site)
- Vendor provides risk-reducing service contract or guaranteed service level

### **Conclusion**

Software-only has become a hot sector of the market with wide appeal. It offers many advantages which users have been waiting for. Users have been frustrated by appliances for all the right reasons — the solutions that are available to them have not been good enough, compatible enough, or affordable enough.

However, pressure from customers is combining with media coverage of technological advances to exert pressure on providers to make their systems better, more affordable, and more compatible.

In many cases, the only way to meet this customer need is through a combined hardware and software solution that offers software-only scalability and flexibility as well as the guaranteed performance, support, and controlled costs of an appliance. Hardware that is *supposed* to work together often doesn't. Detecting and correcting the problem often requires a highly skilled engineer; including that engineering in the product itself adds value and makes for a much better user experience — and it doesn't need to add cost or create limitations going forward.

About Airship Industries:

Airship is a Bellevue, Washington based developer of enterprise-grade digital video recording systems. Airship combines the advantages of software-only and DVR solutions to give users an engineered open platform video solution that offers flexibility, scalability, affordability and easy integration with analytics, POS systems, and other data sources. You can learn more at [airshipdvr.com](http://airshipdvr.com)