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ARCHITECTURE IS THE KEY TO UNLO THE BENEFITS OF IP VIDEO

by Barton Kartoz

In the late-1980's, Intel and Microsoft all but destroyed Digital Equipment Cor by enabling desktops that could distribute computing and storage power to e continued to assume that computer efficiency would be maximized through ce appears that a similar battle is being waged today about the architecture neec effective Internet Protocol (IP) video solutions today. Will centralized archit mirror what was possible in the past, continue to be the de-facto standard century? Or, will a new architecture of highly distributed, "smarter" IP dev future of increasing video quality and performance?

First, what are the real value propositions of IP video Why has the US market adopt than many anticipated?

The most significant value propositions of IP video include:

1. Standardized, shared pipe - Instead of isolated signals between each recorder, IP allows multiple signals to travel on a single cable or channel. This implications for ease of deployment, installation cost, and long term maint transmission/cable system.

2. Shared Resources – Almost all organizations need an IP infrastructure communication, and business data. Video can be one more use for this infrast than being completely separate.

3. Quality – The NTSC standards have constrained analog video quality to 480 @ 30 feet per second (fps)) or lower since their introduction in the mid century. IP standards do not limit the image size or frame rate as analog sy translates into options for higher quality.

4. "Smarter" – As cameras become IP devices, we gain potential to computing tasks in addition to capture and transmission of video. Example character recognition and advanced motion analysis. This "intelligence" has make video more useful.

Misinformation still abounds. One major video software developer's web site when video quality is a primary concern, clients should consider an analog Because implementation of IP video to date has often resulted in lower vide perspective, legitimately based on early experience with poor IP video pictu management, can limit anticipated acceptance rate for IP video. If IP has higher quality, more function, and lower long term cost, but real outcom quality, then who would blame users for balking?

I believe it's largely an architectural issue. Historically, video systems have centralized command and control product. From the advent of video security through the 1990's, video required home-run cabling to centralized locations.

A large majority of the video products industry is still taking a centralized ap Beefy servers are being deployed with large numbers of cameras streamir simultaneous storage. Video analysis tools are being placed on secondar servers. While this may be a natural and understandable evolution fro architecture(s) of the past, quality is being sacrificed for perceived e conformance to established architecture. Certainly efficiency is important, but systems truly more efficient?

Most other network-based systems that we encounter in our daily lives are Consider your desktop or laptop, and the network it connects to. Another exam home is the access control industry. Access control system makers long ago distributed architecture would promote fault tolerance, higher performan features. Video solutions are one of the most use-intensive services on Centralized approaches lead to even more reliance on the network. Viewed seems surprising that video systems would ever be deployed in highly centraliz

All of this would be understandable if centralization were the only cost ef deploy. This is not the case. Technology enables a sweeping change from distributed systems. By distributing the computing, storage and analysis a video, all of the IP value propositions discussed above can be fully realized.

Some key attributes of a distributed system include:

1. Moving decision-making analytics away from centralized servers and onto sensors or cameras they serve. It turns out that on top of de-coupling netwo throughput from video system reliability, this change generally lowers cost as

2. Keep streaming video off networks except for when it is being used.

3. Record at the very highest possible quality without impact to the networ view video at lower quality levels in general, but reserve enough network capa highest quality on demand.

4. Use of imbedded operating systems that are less prone to network based th

Distributed systems have other benefits. Properly engineered, these w to video implementations:

1. Reduce impact of equipment failures. A single failure should only impact a s a distributed system.

2. Increase overall uptime of the system by removing network and centraliz causes for recording and alarm generation failures. With the performa effectiveness that is becoming available utilizing IP technology, there is lit analog video will not be the dominant system in the future. How far into the f on when IP solutions rise above their predecessors in terms of usability and This largely depends upon our collective willingness to embrace a major char we design and implement video systems.

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