Intelligent IP Video Systems

Phil Mumford
Owner

CEOCFO: *Mr. Mumford, what is Mumford Associates?*
Mr. Mumford: Basically, my background is in mechanical engineering, I worked for aircraft companies in my early years. When Cessna Aircraft moved me to New Jersey then decided to move the company to the desert after I had just come back from the Middle East, I decided to leave and go out on my own. This was 1985. At that point I started a data services company working with Automated Accounting system and small business networks. Over the next year we just evolved from that into digital video. About fourteen years ago we got a request to design a CCTV system for a company. It was new technology for us in a way, but run of the mill as far as technical complexity is concerned and we were successful at it. I decided then that this had to be a good business to be in. I guess at about 1992 or so I saw the writing on the wall in that IP, Internet Protocol, and digital video would be the future. We have been doing it ever since.

CEOCFO: *What is your main offering today?*
Mr. Mumford: Basically, it is video surveillance for business and all that entails. Video surveillance is not only security anymore. It is process control, it is general security, facility security, it is automated electronic notification; it is a fairly complex network of video servers in an enterprise environment where a company would have more than one location. HD video has also become a platform to process all types of biometrics: fingerprints, scanning, facial recognition, iris recognition and license plate recognition. Today we have about ten or twelve facial recognition customers. Most of the other biometrics are either in general security where you have access control feeding the video system and then someone deciding whether or not someone should be granted access. About sixty percent of that is license plate recognition, where various businesses want to be able to read a license plate and then do things with it; either record it for security, grant access under certain circumstances and identify what vehicles are coming on their property.

CEOCFO: *When a company comes to you do they typically know what they want or are they coming to you and asking for help to figure out what they should be doing?*
Mr. Mumford: Most of them have an idea of what they want from reading. It is not like it was fifteen to twenty years ago where it would be a completely new area. The internet has made most of our customers pretty savvy with respect to technology. Therefore, they have a good idea of what they want. What they do not know is how to install it and make it cost effective and not be a continuous technology and financial bleed on their business. Therefore, they come to us to design a system based on what they've told us and then we would provide them with a whole series of options that could make what they thought was a single purpose installation for their enterprise into a genuine business aid for many departments, each with different objectives and needs.

CEOCFO: *What do people miss when they think about security?*
Mr. Mumford: My customer base goes from small companies with fifty employees to larger companies with several thousand employees. Memorial Sloan Kettering is one of my most important customers. I think that except for companies like this that have their own IT department and their own professionals on staff, it would be a stretch to expect the smaller to mid-sized companies to have personnel versed in all of the different technologies involved in a digital video recording deployment. Accordingly, most businesses still underestimate the computer requirements needed to connect, record, provide live/recorded feeds to users especially in a mega pixel ip cameral environment. That is the principal oversight that I see.

CEOCFO: *How do you evaluate the new technology? It seems there is a change every other day. How do you help a customer design a system when perhaps six months down the line there will be something new that might be better?*

Mr. Mumford: There are several aspects to this that are important to us when we are approaching a customer and making recommendations for the first time, not the least of which is their network infrastructure. All of this and many other details are noted in the "Site Survey". For example, the customers network could be ten years old, or brand new. So, the customer, with our guidance, must map out and decide exactly what type of data communications are required over what distance and what speed (bandwidth) is going to be required above and beyond their core business network. Some customers start with the belief that deploying a VMS (video management system) is just another application and simply tack it onto their current server array and virtualize it into a slice of computer time that often proves to be grossly inadequate. Therefore, it is a bit of an education with respect to that. However, as time goes on and technology gets faster and faster, what we are finding is that improvements and upgrades to corporate data networks including fiber optic connectivity and high speed wireless access are making it easier and easier for us to transmit and record high speed, high content video over their network. So that is what we look for at first. It is the most important single item. We want to find out what the network can do; what upgrades may be required, how many and how powerful the application servers need to be to record high definition video across the network. The second aspect is what we call the collection device, the camera. What does the camera need to do? Does it need to be a pan / tilt / zoom camera, which in our opinion requires a physical operator and is kind of antithetical to automated digital video. Does it need to see in darkness (Thermal Imaging)? Does it and the application require digital video analytics? All of these needs must be analyzed to determine what type of IP camera is required for a specific application. Indoor cameras, of course, are the easiest and cheapest to install. Of course as time goes on megapixel ip cameras can be purchased for around $200. So now we have collection devices, the cameras. Next we decide how those digital images are going to be recorded and stored. That is the "computer side" of things. How much horsepower does the server need to have? Can we split it up? Can we stack them? Can we whittle down the resolution for cameras that are unimportant to help save space? Do we need to save space? Does the customer have an archive system in place already? If not, we would recommend one based on how long you want to keep the video, what type of video does he want? Would he want megapixel images? If so how many megapixels? One(1), five(5), ten(10) megapixels… Think about it. At sixteen frames a second, megapixel images will consume storage space in a surprisingly aggressive way. A ten(10) or twelve(12) or fifteen(15) terabyte unit, let us say, would not support multi megapixel cameras for more than a couple of weeks, if that much. Therefore, a competent and conservative design of the storage requirements is essential.

CEOCFO: Do companies come to you because they understand the depth of your offering and the depth of what you do?

Mr. Mumford: Yes, I think so. Most new customers come to us with their IT people. After all, VMS is an IT application. It is best implemented and understood by IT trained personnel. However with this often comes the realization by the customer that company IT resources may be strained or exhausted if this new responsibility is assumed by the IT department. I've heard this a many customer meetings… "Listen, we have an IT support mission in our company. And to take on the video system management would be an enormous undertaking. It can be done over time, but the initial installation, training and set up should be done by a specialist". This is where we come in. We provide the transition during which time our new customer can gradually take over such a deployment in a way that would disrupt current IT operations as least as possible.

CEOCFO: Is it difficult to find people and to train people?

Mr. Mumford: You have been doing good research, because you have hit upon my central problem. It is the principal barrier to growth that I have had difficulty with. However, I think I have solved this problem by finding people who want to do this, but have a multi talented resume. You need to be familiar with photography. You have to understand how a camera works. You have to be familiar with electronics, both low power and high power. You have to know wired, wireless networking and how fiber optics work. You have to be competent in Windows & Windows Server set ups in a network environment. It's not hard to see that it is difficult to find such people sitting around waiting for us to call. So we begin with IT trained people, first. Usually with a Cisco (CCNP) certification. Not exclusively, but we've found they are easiest to train. We bring them through the analog camera and video server technologies and take them through the photographic issues that come up; lighting, lenses and shutter or image capture speeds. By the time we are done, within 90 days, we've got a new lead person. We have twelve(12) teams out in the field and one of them is this person that we are talking about. The other person(s) or more on a field team are apprentices.

CEOCFO: *What is your geographic range?*

Mr. Mumford: We work in the Metropolitan New York area.

CEOCFO: *Do you do advertising or are you so well known at this point there is no need?*
Mr. Mumford: People have been asking me that since I opened. I do not. I rely solely on word of mouth and the recommendation of our primary software company to point us in a direction or two. However, ninety percent of our new clients come because they heard about us from someone else.

CEOCFO: *Would you tell us about ongoing customer service once you have installed a system?*
Mr. Mumford: At the center of our ongoing support offering is our remote support team. Our people use a Citrix server to train new video users quickly and easily. Other than on-site and remote access training for customer personnel, for most customers it involves us being granted access into their company VPN, their network. We manage and tweak all the devices that are in the system: recording servers, management servers, storage devices, and the IP cameras themselves. It involves upgrading the firmware in each camera, adjusting various settings, e.g. recording schedule or to set the time period for when a camera is online and when it is not, what it is doing when it is online, how fast it is capturing data, etc.

CEOCFO: *What is the key to keeping things secure while you are changing over systems of replacing equipment?*
Mr. Mumford: That is a very good question! I think that other companies have the view that it is a disruption; it is going to be a disruption, let us just get it over with. Therefore they say, "Okay, we are going to lose time, some cameras will not record and so on, let us just get past it and move on." Some customers take the time to say, "Okay, let us move this feed to this server or that server." It is a much more intricate and complicated and time consuming process, but at the end they will have lost zero video. Therefore, it depends on what the customer wants us to do. Of course, you can imagine the latter where we would map out exactly what feeds are going where and how to change that and how to switch over the camera and not lose any feeds, is infinitely more expensive. Therefore, most customers just bite the bullet and do change over's.

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CEOCFO: *Do many companies make use of the video that they keep on a regular basis?*
Mr. Mumford: When CCTV became prevalent in most businesses I think that that was the principle understanding; that most businesses would have it because they need it, because everyone else has it and if there was a security problem, at least they had something to help law enforcement or to lower liability insurance rates. However, today it is different in that the customers are realizing the general business value in digital video. Yes, they need security, absolutely. However, they also want to know who is coming in. They want to know where that person is going. They want to know whether or not that person is doing their job right or stopped at the right person. If there is a crowded room or a high traffic area, they want to know whether or not a particular bag was left unattended. They want to know other things than just security based video. That is what is exciting to me as far as the prospects of the future are concerned. Video is becoming more and more and more important for a whole host of reasons. For example, I have a customer; Sealy Mattress Corporation, and they use the cameras we installed on the outside of the building solely for security, but now after they've had this in place for several years now they are need track the movement of the many trucks that enter and leave their facility every day. So, we've paired truck access with video. So now they know who has entered or left their site with digital images as well. On the inside of the factory their use of the video system is completely process/production control. They want to see who is making what correctly and if there is an accident or a problem, they have a video record. Many customers use it as part of their daily management tasks.

Looking toward the future, as cameras get more and more capable, we are finding that VMS (Video Management System) software development is key. The recording software, its features and its level of sophistication is central. How well does that work? How easy is it to use? Let us say the company network goes down. What happens at that point? We need software sophisticated enough so that the SD card in the camera will keep recording as long as it has power, whether the network is up or not and when the network comes back up we want software to be capable of meshing the video that the camera collected when the network was down into the regular data base when the network was up. This type of software exists today. And this is a relatively young industry. I think that that is what drives us. The future is in the software and how it works and how well it manages the collection of the massive amounts of data. I do not think that there is a business application out there that compares with digital video with respect to the intensive computer requirements. And it's getting more and more intensive.

CEOCFO: *What should people remember when they read about Mumford Associates?*
Mr. Mumford: That we did it right! That we were not there to offer them some sale item just to get them onto our customer roster only to disappoint them later with costly requirements that are a surprise... That we were up front, honest and that we were professional. That we did it right the first time. That we told them everything they needed to know before they signed on the dotted line and sent us a dime and that when we are done they want us back.

Interview conducted by: Lynn Fosse, Senior Editor, CEOCFO Magazine

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