

LISTENING TO OPERATORS' NEEDS, ENHANCING CASINO DEFENCES

INTERVIEW WITH DAVID AINDOW

Protective systems in casino environments are increasingly unobtrusive and capable of a growing range of functions. With technology rapidly evolving towards behavioural analytics and video content analysis in the camera, the scope for operators tightening and refining the effectiveness of security and surveillance continues to be very significant.



GI: What is your history in the growth of security and surveillance?

DA: We first started in the casino surveillance industry in 1992, when the systems were analogue Cameras, Audio and VCR's. Over the years these systems were updated and are still in operation. However, once digital started to get approved by the various regulators, it started to come into its own.

A few years ago, one of our existing analogue system clients was in the process of updating a system and looked at a number of digital systems. After numerous trials, ours was the chosen system for the installation. Once the installation and training had been completed, the feedback I received from the operators was extremely positive and statistics gathered by the Casino Surveillance Director indicated that productivity increased by more than 300 percent. This proved that our digital system was the future.

CGI: Do you have a largely global presence?

DA: We are a global organisation with the group head office and primary R&D centre in the UK, but there are also regional hubs that provide sales/marketing and technical resources in California, Singapore and Dubai. These regional hubs support both their local and neighbouring countries and provide us with a true global presence.

CGI: Is there a sense of an upward levelling in the casino industry where it is no longer an option to hold onto non-digital systems?



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DA: It is practically impossible to hold onto analogue equipment these days as very few commercial VCR's are being produced. A number of casino surveillance departments are still using analogue cameras, due to the latency (delay) when using IP cameras. We have available a piece of equipment called the e100 that converts all analogue pictures to IP and the delay is minimal (.100ms).

CGI: Mind you, some argue that with pre-digital systems it is a case of if it isn't broken, why fix it? Do you agree with that?

DA: No. Digital systems will increase the productivity of the surveillance department. During investigations the use of digital technology far outweighs the old analogue systems. It may not be broken, but the time is right for progression. Anything that casinos can employ, that will help them beat the casino cheat, should be used. Digital technology is the next step in that tool.

In November 2009 our Synergy Pro integration and security management solutions were given an honourable mention in the Gaming and Technology awards for best productivity enhancing tool, highlighting the point that moving to digital with the right supplier is a positive and ultimately beneficial step

CGI: There is the problem of ensuring expert use of the new technology that appears to be still in the catch up stage.

DA: It doesn't have to be. We give extensive training to all levels of staff including the basics, the GUI and an in-depth training of the administration side of the system. However, like any new piece of technology, the more you use it the more you will find that it fits into your particular environment.

CGI: Many casinos lack space to accommodate parallel systems in a transitional phase to digital. Do you have a specialist answer to that problem?

DA: We are experts in least downtime transitions. In fact, our recent upgrades to the four government owned and operated casino's in Sweden provided the client, Svenska Spel, with a zero operational down time migration from their existing legacy analogue and digital systems to our latest generation H.264 video surveillance solution.

Meticulous planning is the key, installing small numbers of channels at a time and migrating from old to new technology with merely seconds of downtime per camera. In many instances this down time is zero if the client has suitable distribution equipment pre-installed. Once the channels are migrated to the new system, the legacy equipment can be removed and the process of migrating the next batch of channels can begin.

CGI: High limit tables generally require very detailed forensic digital capabilities in the camera surveillance of the cash cage. What are your priorities in quality ranges according to locations within the casino site?

DA: This can vary from one part of the casino to another quite dramatically. For example: tables, cash desk, count areas, VIP areas, drop box and bill validator collection will require the highest of quality. Whereas, back of house and, to some degree perimeter, may require a lesser quality of recording. Most Surveillance Directors or Managers will have their own opinion on which areas need higher or lower recording resolution.

CGI: Traditionally, interlaced cameras take two low-resolution pictures then join them together to create a higher resolution image, but this is not so effective where motion is concerned. In today's digital systems, using analogue camera's as inputs can cause motion blurring effects when the video is viewed or replayed. How do you address this?

DA: We have invested a great deal in R&D to compensate for this effect, and now users of our systems can benefit from a wide variety of selectable display filters so that the displayed video is as sharp as possible to enable them to identify roulette ball drop positions and card values. Of course, these display filters have no impact on the stored video, so its initial integrity is retained.

When our clients first had the system installed they found that on some video footage that was paused it would be slightly blurred. Through operator training to use even the most basic of filters and changing the paused image to even or odd frames, the image became a lot clearer.

CGI: Casinos tend to adopt recording systems that can accommodate around 30 images per second. You no doubt would point to other advantages of DVR over VCR?

DA: There are many real world benefits to DVR's above traditional VCR, such as speed of retrieval, automated audit trails of reviews, intelligent search facilities to name but a few. However, there are a whole host of further benefits to be had by coupling your DVR or IP surveillance system with a Security Management Solution such as our Synergy Pro package. Such packages offer management and control of not only the video surveillance system, but also your access control, your audio systems, player and gaming tracking, TITO, ePOS and cash counters, meaning your operators and managers are presented with meaningful alerts and statistics to aid them in their security remit.

CGI: In fact, DVR or IP, which is best in your view?



DA: Both have their own benefits. For example, why would you want to go for an IP solution in an existing casino where all your analogue cameras are presented via coax or fibre to a specific location where you could deploy DVR's for recording and retain or upgrade your analogue matrix switch to ensure you keep zero latency PTZ control that is impossible to achieve with an IP system?

In new builds, IP is without a doubt the correct way forward as its ability to share infrastructure with other key services saves a great deal of cost in the build process. Good IP systems now have an end-to-end latency (delay between the image being live and actually seen by the operator) in the region of 110 - 140ms which makes PTZ control and follow manageable.

We are in a unique position, having analogue, DVR and IP/NVR solutions in our product portfolio means we do not have the technology agenda that some other vendors may have. This means we can discuss the various options with our customers in an impartial, open and honest manner and ensure they receive the solution that is right for them which in many cases is a hybrid of the technologies.

CGI: Miniaturisation allows for hidden security and proliferation of total camera coverage. Is that approaching saturation point with the emphasis shifting more to efficiency of response to analysis of perceived criminal activity?

DA: I don't think so. In every environment where we have a responsibility to protect the casino assets, customers and casino staff, it is beneficial to have different options available to the manager. Obviously, the more information a manager has to analyse after an incident the better for the casino.

CGI: There is the fact that analytics and biometrics are increasingly important aspects of the security system. How do you see this issue?

DA: This is extremely important. Biometrics is constantly improving, although I don't think it is 100 percent ready for the casino environment at an acceptable price. Analytics is relatively new to the casino environment and its uses for a casino are exceptional.

For example, we produce a piece of equipment that is a converter from Analogue signal to IP (e100). It can also power a static colour camera and hold up to 32GB of storage on two Micro SD Cards. The e100 also has analytics built on board which would allow a covert surveillance operation to take place by placing one e100 and a static camera next to each other, programme the analytics on the camera to start recording when a drawer was opened and let the machine do the rest. Prior to this the project would have been very difficult to put together.

CGI: As cashless systems are changing gaming floors does that reduce the role of digital surveillance given computer tracking of TITO, for instance?

DA: Absolutely not: we can capture this information and allow it to be recorded on the system, allowing live viewing and recorded viewing of events that are taking place on a certain slot machine, bar or reception till, cash desk note counters, and so on. This will enhance the department's productivity in an investigation into these areas.

CGI: What happens if there is a failure of some cameras due to a power surge or where a transmitter interferes with the camera signal?

DA: Most systems now have built-in error diagnostics that can detect video loss and improper video signal. We take this several stages further and are able to provide camera cloak and tamper alarms as well as intelligent fault recognition that point the maintainer to the most likely causes of the fault.

CGI: No doubt maintenance service covers any problems that arise from failure or interruption. In practise, where does this mostly tend to be in the casino industry?

DA: During the VCR days most of the maintenance issues were with VCR's. Nowadays with Digital, maintenance is mostly geared towards the cameras. Very little maintenance is needed for the digital systems.

CGI: Being tried and tested, system glitches get debugged through implementation and use. To what extent do casino environments provide feedback over time assisting you to refine your technologies?

DA: We encourage managers and directors to give feedback. This not only helps us with on-going development, but ensures customers are fully satisfied. Most of our customers will hopefully concur that we are a listening company and although we have cutting edge technology we always strive to meet the real world needs of our customers, after all they know what they need and what will benefit them operationally far more than we do.

CGI: Is there a compatibility issue at anytime with your system installs that may have to integrate, or be linked, with competitor elements?

DA: For 25 years we have been integrating with third party products, we have the widest choice of dome control protocols on the market, and the initial design brief of our Synergy Pro Integration platform was to enable our customers to be able to choose the third party peripherals they wished to use, or to not throw away perfectly good competitors equipment if they wanted to expand with us. We strive to integrate with devices that the customer wishes to use and in most cases are very successful. Of course, there are situations where this is not possible, but this is the exception rather than the rule

CGI: Is there a danger that as systems become more and more remotely handled the receding human intervention element risks operational errors, even misuse?

DA: Most casinos will not allow their systems to be controlled remotely, and this is due to the security of the system. In certain cases where they centralise monitoring and control of a number of properties it is essential that any transmission links are highly secure, and that the operators are trained to be as highly skilled and diligent as those who would normally reside at the actual casino.

Our systems have full operational audit trails ensuring that any operational errors are tracked and notified to system managers/supervisors to enable further training to be initiated when required, and perhaps more importantly any misuse of the system can be identified and handled appropriately.

CGI: What do you think is likely to be the importance of camera technology as it becomes IP-based over the next four or five years?

DA: There is a current buzz around IP Megapixel cameras but in my view as the frame rates supported in high resolution modes are relatively low, they are not yet ready for the casino market. HD cameras on the other hand are getting far closer and offer better resolution than current cameras as well as full motion video.

CGI: Are there digital advances you see on the horizon that will further benefit casino protection, or that you would wish to see develop?

DA: Technology is moving quickly towards behavioural analytics and video content analysis in the camera, and I believe this will become cost effective in the coming years. Several vendors are also talking about gaming specific analytics such as card monitoring which will be very exiting to see in the real world. **CGI**

DAVID AINDOW



David has degree level qualifications in Computing from Sheffield Hallam University, graduating in 1991. Since then he has worked exclusively in the video surveillance market for several companies; camera and systems provider's Baxall and Sony, and the more specialist video command and control/transmission providers COE and Synectics where he held the position of IP Video Systems Manager for the last five years. David has been heavily involved in the design and specification of a number of groundbreaking security systems over the last 18 years, including Kuala Lumpur International Airport, fully IP-based systems at Brussels International Airport, and Caltrans District 11 and more recently Regency Hyatt casino's in Tirana Albania, Thessaloniki and Athens Greece as well as the newly completed DVR and integrated security management system for Svenska Spels' four Casino Cosmopol establishments in Sweden.