State of Arkansas
Video Strategy

Executive Summary

The State of Arkansas is embarking on a major project to realize the video needs of tomorrow, today. Video is a powerful technology for learning. Anyone who has access to the Internet can receive educational content from anywhere in the world. More organizations are finding that it is a cost-effective and efficient way to provide training to their employees. Studies show that individuals who participate in e-learning learn faster and retain more information than those who learned in a traditional classroom setting. Advances in technology have made it so that designed video is no longer the sole province of broadcast television. Video is a catalyst for innovation and productivity revolution, and e-learning utilizing video is a tool for poverty reduction and economic development. The State of Arkansas has the vision to enhance the ability of state entities to deliver efficient and effective public services by implementing an enterprise communication solution that provides media rich communication options throughout the state. Today you can learn tomorrow's skills utilizing video.

Background:

The current contract between Department of Information Systems and AT&T will expire in February of 2012. As such a sub-committee of the State Network Focus Group was formed to provide requirements for a new interoperable video/unified communications solution to replace the existing service. The members of the committee represented stakeholder groups that would access the service at different levels of connectivity needed as well as from different types of end-user equipment.

Video Mission Statement: To provide quality, cost effective interoperable voice, data and video communications services anytime, anywhere on any device.

Arkansas Goals: Strengthen education, enhance economic development, improve operational efficiency, increase citizen access, provide public safety, and safeguard the environment.

Strategies and Objectives

Strategy: **Build a robust video infrastructure capable of supporting Arkansas state government needs through 2020.**

Objective: Require the ability to create, deliver, receive and manage video, audio and presentations to a wider audience, anywhere around the state, anytime on any type of device.

Objective: Increase productivity, lower maintenance costs, and improve the overall effectiveness of new and existing resources in order to optimize operations.

Objective: Utilize video conferencing to reduce travel time thereby protecting the environment through reduced fuel consumption, reducing the carbon footprint and saving money.

Objective: Lower cost for video connection per unit, conference time and end points which will result in more users utilizing video services.

Objective: Create a more economical way to add sites to the network which will result in schools increasing video utilization.

Objective: Share more of the control and maintenance effort with subscribers allowing them to be more efficient.

Objective: Have a state entity host the solution rather than a third party which impacts support levels and trouble shooting. The result is cost savings, flexibility and gains in operational efficiencies.

Objective: Utilize video conferencing to increase the accessibility of state services.

Objective: Increase employment opportunities in the state.

Strategy: **To replace and enhance the existing service for video conferencing**

Objective: Ensure continuity of service with no disruption in service delivery.

Objective: Meet stakeholder developed requirements.

Objective: Build in interoperability and reliability.

Objective: **I**mplement a more cost effective solution.

Objective: Increase the availability of HD quality video conferencing.

Objective: Implement a solution that is intellectually ergonomic.

Objective: Increase video quality at the same bandwidth.

Objective: Increase the "reach" of the network by implementing an "any to any" core infrastructure.

Objective: Enhance the "portability" to allow anywhere/anytime access.

Objective: Implement a flexible core infrastructure that is highly adaptable.

Objective: Integrate video statistics into the enterprise Dashboard.

Strategy: **Integrate disparate video communications**

Objective: Implement a solution with the capacity to support universal voice, data, video and multimedia communications.

Objective: Integrate IP telephony and video bridging infrastructure.

Objective: Provide device independent access (mobile, desktop, and room based systems).

Objective: Integrate video capture, storage, and streaming.

Objective: Emphasize the use and implementation of interoperable open standards.

Objective: Utilize video to improve staff communication collaboration and productivity.

Examples of stakeholder needs:

Mobility:

◊ Remotely be able to view web based video schedules, manage the video and access content.
◊ Empowers employees and enhances productivity and creativity by providing the means for workers to stay connected regardless of location.

Education:

◊ Educational equity for schools and campuses that are isolated due to funding or location.
◊ Increased professional development opportunities for educators.
◊ Increased access to advanced curriculum options.
◊ Access to course content enrichment via virtual fieldtrips.
◊ Capture course content to be used as streamed media.
◊ Tap into the adult learning environment.
◊ Changing enrollment demographics.
◊ Health education.

Criminal Justice:

◊ Cost Effective
- Ability to reduce travel costs and lost productivity related to professional training requirements.
- Reduce the time law enforcement officials spend traveling to courts.
- Enable a more efficient, effective, and productive means of providing parole hearings.

◊ Public Safety
- Reduce risks, time, and costs associated with transporting inmates.
- Increase the safety of victims by controlling contact with suspects.
- Ability to conduct video based parole hearings that minimize the need to transport inmates.

◊ Accessibility
- Ability to provide video based expert testimony without requiring them to leave their office.
- Ability for state employed experts to minimize travel time and streamline dockets.
- Increasing the ability to include remote expert testimony by minimizing the effect of geography.

◊ Efficiency
- Streamline judicial process by eliminating the barriers of geography and time.

Video Technology Trends

- Videoconferencing is in transition from a focus on video quality and experience to an emphasis on reach. The advent of higher quality webcams and more sophisticated video coding is breaking down the barrier between fixed, conference room video and external participants who historically relied solely on audio add-on.

- The commercialization of 3D media will also create interest in yet another iteration of video conferencing.

- Increased bandwidth to homes and to mobile devices, via new generations of mobile networks, has combined to increase the usage of video.

- Video is expected to be the dominate web traffic type by the end of the decade.

- The popularity of video to illustrate the use, maintenance and repair of various products, or the use of services is rapidly expanding.

- On-demand video clips are a significant factor in web pages being considered more "relevant" to a user's query. Such weighting makes video valuable for e-commerce and also for customer self-service.

- Excitement about video chat for kiosk or in-home services is gripping various organizations, but on-demand video offers greater cost savings and simplicity of execution for managing service illustration and repetition.

- The proliferation of video cameras is dramatically reducing the cost of producing videos in organizations. Gartner surveys show that companies expect the proportion of their video produced by professional studios to fall during the next two years.

- YouTube has the second largest number of searches on the Internet behind Google.

- The existing customer base is expanding into non-traditional markets.

- The ever-decreasing cost of storage coupled with compression rates of video files makes the cost of video storage more reasonable than in the past.

- Video is a key element in internal and external messaging strategies.

Future State of Video Technology for Arkansas

Going forward, video solutions must address:

- ◊ **Interoperability:** An endpoint and device agnostic bridging core.
- ◊ **Usability:** Ease of access.
- ◊ **Independence:** Providing multiple avenues of access that are platform independent.
- ◊ **Functionality:** Utilizing a web-based video conferencing scheduler that provides for user scheduled and ad-hoc conferences, a clearing house to post event offerings online, schedules recording/streaming resources, and provides a visual scheduling calendar.
- ◊ **Delivery:**
  - Secure Delivery from the Edge: Ensure the existing network is efficient, high-performance, fault tolerant, and scalable.
  - Topology Awareness: Using real time performance monitoring and ensure the most efficient routes across the enterprise network while maintaining the highest quality of service possible.
  - Dynamic Throttling: Utilize an intelligent content delivery protocol that dynamically throttles lower priority on-demand video streams when other traffic fully utilizes the WAN.
- ◊ **Security:** Security issues in wired and wireless video systems include viruses, malicious attacks, and denial of service. Unauthorized users can intercept content transmissions or attackers can inject malicious content or penetrate the network and impersonate legitimate users. Sensitive and valuable video content must be encrypted to safeguard confidentiality and integrity of the content and prevent unauthorized consumption. A mobile device and its user must be authenticated before a wireless video service. End-to-end security is needed from the upload/creation process, to access control, to delivery, to encryption on the endpoints.
- ◊ **Deployment**
- ◊ **Infrastructure**
- ◊ **Reliability**
- ◊ **Integrating video into SharePoint**
- ◊ **Providing end-user access and control**
- ◊ **Video content management: Concerns are storage space, bandwidth, security and searchability.**
- ◊ **Video production**

Next Steps:

2011:

August:

Analyze vendor products for a comprehensive solution that is cost effective and best return on investment.

Procurement of bridging and scheduling.

Procurement of record and playback and media handling.

August/September:

Develop a procurement strategy.

August/September/October:

Procurement of device independent trans-coding – universal access converter.

October:

Test and troubleshoot the new solution.

October/November:

Train and educate existing users on the new scheduling software and core bridging.

December:

Cutover current video users.

2012:

January:

Implement video storage and streaming capabilities.

Integrate VOIP.

February:

Conclude current services contract with AT&T and close out the legacy service.

Begin integration and testing of desktop and mobile devices.

March 2012 – December 2012:

Expanding the network by adding additional computers, portable devices, and room systems.

Improve real time reporting and statistics.

Testing new products for integration and interoperability.

Continued improvement and customer satisfaction.

2013:

Survey stakeholders for video improvements and requirements.

Develop implementation plan based on stakeholder surveys.

2014:

Assess video strategy and align to available technologies.

Figure 1. Illustration of Arkansas Video Services

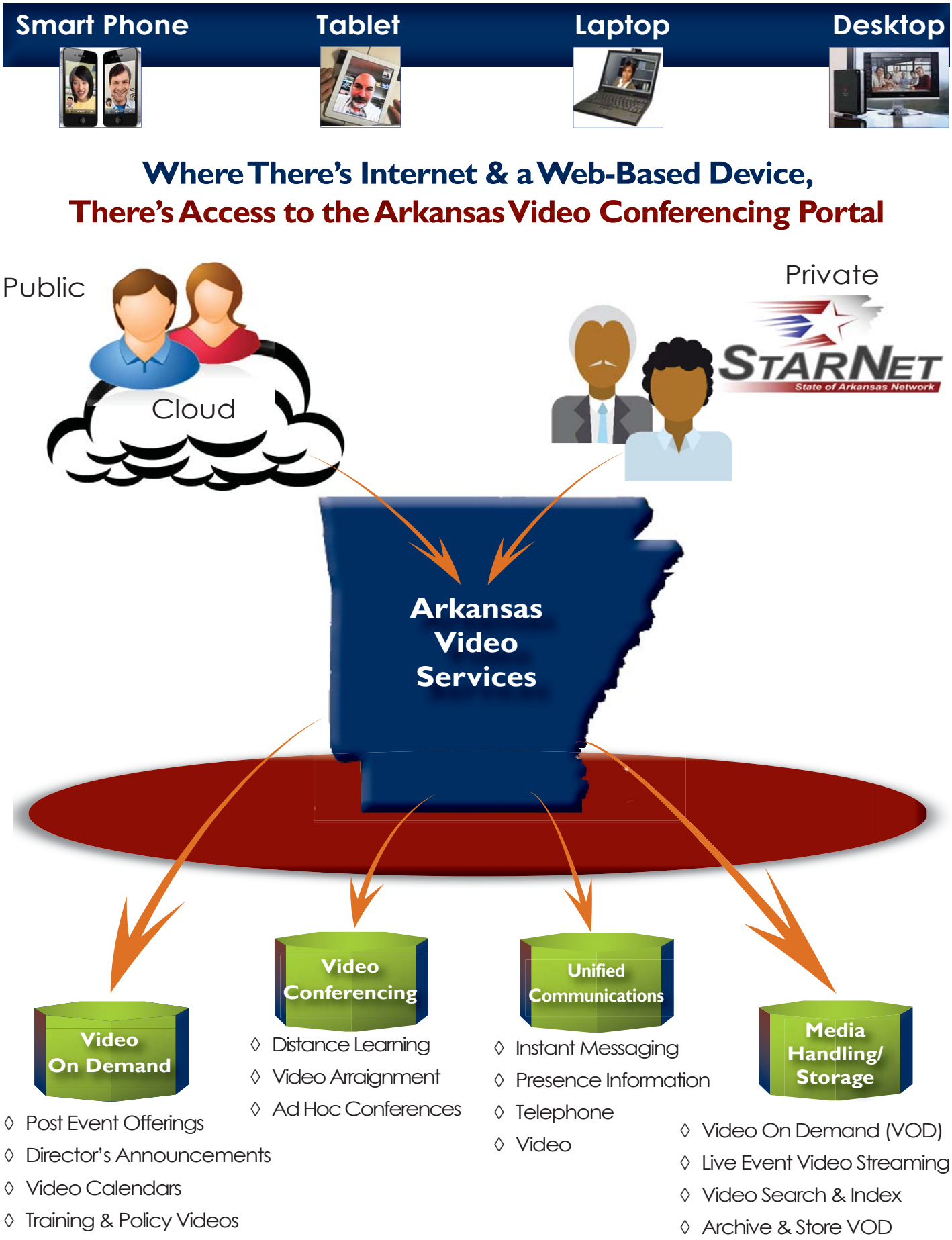

Table 1. Video Strategic Summary

Strategic Objective	Current Status	Need to Accompnish
Share more of the control and maintenance effort with subscribers	Video conferencing bridging & scheduling outsourced contract expires Feb 2012	Deploy a new video conferencing bridging & scheduling solution by Dec. 31, 2011
• Meet stakeholder developed requirements • Implement a more cost effective solution		August 2011: Analyze vendor products for comprehensive, cost effective solution
Increase productivity, lower maintenance costs, and improve the overall effectiveness of new and existing resources in order to optimize operations.		August, September, October 2011: Procurement of bridging and scheduling, record and playback and media handling & device independent transcoding universal access converter
Ensure continuity of service with no disruption in service delivery		October 2011: Test and troubleshoot new solution
Ensure continuity of service with no disruption in service delivery		October/November 2011: Train and educate existing users on the new scheduling software and core bridging
Ensure continuity of service with no disruption in service delivery		December 2011: Switch current video users to new solution
Integrate video capture, storage, and streaming		January 2012: Implement video storage and streaming capabilities & integrate VOIP
Implement a more cost effective solution		February 2012: Conclude current services contract with AT&T and shut down the legacy service. Begin integration and testing of computers and mobile devices

Table 2. Goals aligned to objectives

Video Strategic Initiatives

P=Primary Goal

S=Secondary Goal

Objectives	Goal 1 Improve Education	Goal 2 Economic Development	Goal 3 Government Efficiency	Goal 4 Citizen Access	Goal 5 Protect Environment
Require the ability to create, deliver, receive and manage video, audio and presentations to a wider audience, anywhere around the state, anytime on any type of device.	S	S	P	S	S
Increase productivity, lower maintenance costs, and improve the overall effectiveness of new and existing resources in order to optimize operations.	S	S	P	S	S
Utilize video conferencing to reduce travel time thereby protecting the environment through reduced fuel consumption, reducing the carbon footprint and saving money.	S	P	S	S	S
Lower cost for video connection per unit, conference time and end points which will result in more users utilizing video services	P	S	S	S	S
Create a more economical way to add sites to the network which will results in schools increasing video utilization	P	S	S	S	S
Share more of the control and maintenance effort with subscribers allowing them to be more efficient	P	S	S	S	S
Have a state entity host the solution rather than a third party which impacts support levels and trouble shooting. The result the result is cost savings and gains in operational efficiencies.	S	S	P	S	S
Utilize video conferencing to increase the accessibility of state services.	S	S	P	S	S
Increase employment opportunities in the state.	S	S	P	S	S
Ensure continuity of service with no disruption in service delivery	S	S	P	S	S
Implement a flexible core infrastructure that is highly adaptable	S	S	P	S	S
Integrate video statistics into the enterprise Dashboard	S	S	P	S	S
Implement a solution with the capacity to support universal voice, data, video and multimedia communications	S	S	P	S	S
Integrate IP telephony and video bridging infrastructure	S	S	P	S	S
Provide device independent access (mobile, desktop, and room based systems)	S	S	P	S	S
Integrate video capture, storage, and streaming	S	S	P	S	S
Emphasize the use and implementation of interoperable open standards	S	S	P	S	S
Utilize video to improve staff communication collaboration and productivity	S	S	P	S	S