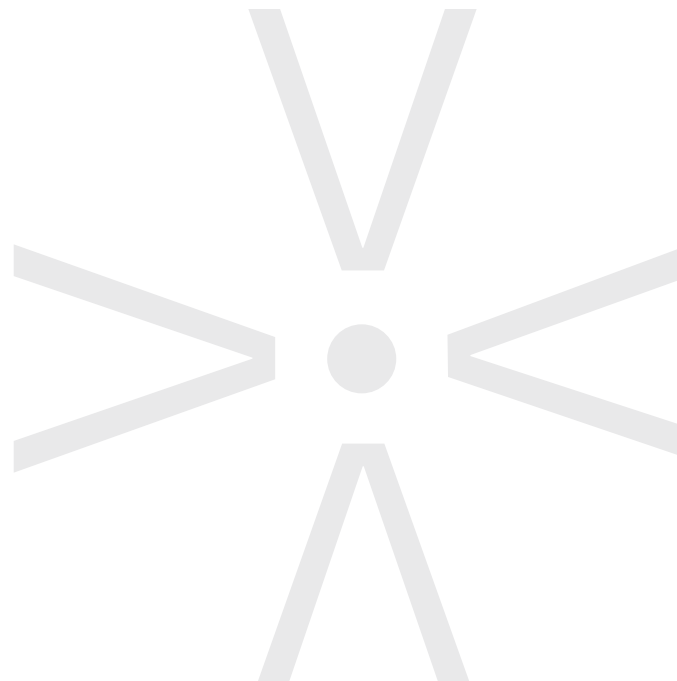


Dow Chemical

Unleashing the Power of Rich Media
Content Using Starbak's Video Portal
and Integrated Network



Background

Dow Chemical Company is a diversified chemical company that harnesses the power of innovation, science, and technology to constantly improve what is essential to human progress. The company offers a broad range of products and services to customers in more than 175 countries, helping them to provide everything from fresh water, food, and pharmaceuticals to paints, packaging, and personal care products. Built on a commitment to principles of sustainability, Dow has annual sales of \$49 billion and employs 43,000 people worldwide.

After roughly four years of discussions with various solution providers, in mid 2007 Dow activated the DiamondTV project, a global initiative to enable the creation, management, and delivery of rich media content to more than 150 Dow locations around the world.

EXECUTIVE SUMMARY

To expand the effectiveness and reach of its existing communication programs, in mid 2007 Dow Chemical Company initiated the roll-out of a global rich media streaming solution from Starbak. To date, the company has invested roughly \$1M to deploy the streaming solution to approximately 40 locations.

Key benefits of this project include:

- Improving communications throughout the organization
- Decreasing time required to distribute information
- Providing better, more convenient access to corporate content
- Expand reach to include offices around the world

The company chose Starbak's Integrated Network Video (INV) for a variety of reasons including the company's approach to leveraging yet protecting Dow's IP network, the capabilities of the management engine within the platform, and the turnkey nature of the offering.

By mid 2008, the company expects DiamondTV (the name given to the new streaming platform) to be available to employees in 150 locations across the globe.

PROJECT RATIONALE AND OBJECTIVES

Dow Chemical Company recognizes the importance of global communications — both internally and externally to customers, partners, and other interested parties. For many years, the company used satellite technology to broadcast important videos and rich media content (e.g., CEO presentations) to almost 80 Dow facilities and offices in the U.S. and Europe.

Although reliable and well received by employees, the satellite broadcast system had the following issues / limitations:

- Limited coverage area – satellite broadcasts could reach only U.S. and European offices
- Inconvenience – to view the content, users had to go to a particular location / room and tune into the broadcast at the scheduled time (regardless of time zone differences)
- Distribution lag – the need to reserve satellite time and inform viewers in advance of the broadcast schedule limited the ability to distribute time-sensitive information
- Usage-based cost – although not prohibitively expensive, satellite transmissions incur an hourly usage fee that the organization must shoulder

In hopes of resolving these issues, Dow turned its sights to streaming, a technology which it believed would address its basic requirements while allowing it to leverage its existing infrastructure. Key objectives of this project included the need to:

- Reach and communicate with employees in 250+ Dow locations around the world
- Distribute information quickly, often in a matter of hours, to a global audience
- Make information available to employees conveniently (at their desks and during local business hours) and easily
- Limit information access to individuals authorized to view that content
- Encourage the creation and distribution of rich media content

CHOOSING THE RIGHT VENDOR / SOLUTION

Once it understood its needs, Dow faced the challenge of finding a streaming solution that was easy to deploy, easy to manage, and could be deployed cost-effectively throughout its global environment. Additional considerations included finding a vendor with solid experience supporting an organization as large and distributed as Dow, and ensuring that Dow's production IP network (local area network / LAN and wide area network / WAN) was not infringed.

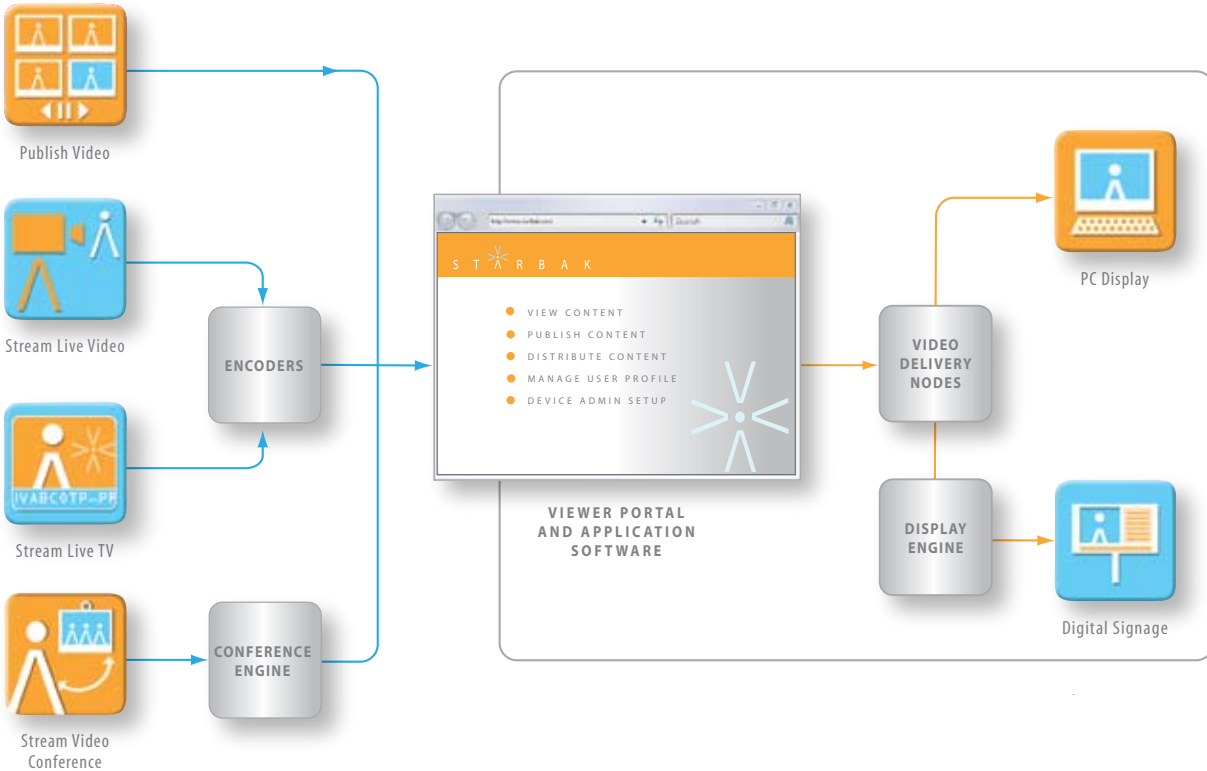
After several years of planning and research, Dow selected Starbak and its Integrated Network Video (INV) platform. The reasons behind Dow's choice of Starbak included the following requirements and capabilities:

- A focus on leveraging yet protecting Dow's production IP network via support for multi-cast networks and the use of integrated caching appliances
- The availability of powerful centralized management platform enabling the creation, management, and protection of valuable rich media content
- The ability to integrate with existing systems in the environment (e.g., satellite distribution networks, active directory / LDAP, etc.)
- The use of standard media formats (e.g., Windows Media) viewable using tools already deployed throughout the environment
- A high degree of automation, which reduces the resources needed to manage / support the streaming environment
- The end-to-end coverage of the offering (supports / enables content creation, management, and distribution)
- Starbak's experience supporting the global streaming requirements of other large multi-national organizations

STARBAK SOLUTION DEPLOYMENT

To address Dow's requirements, the following Starbak components / products were deployed:

- **Starbak Manager** – A centralized management system deployed as a turnkey appliance that provides the ability to manage the devices, content and users within the global streaming environment. By integrating Starbak Manager with its internal directory systems (via LDAP), Dow was able to offer its users single sign-on (which eliminates the need to enter usernames and passwords to access content). In addition, Starbak Manager provides a dynamic web-based user portal that makes content available immediately after capture.
- **Starbak Encoders** – Appliance-based capture stations that can connect directly to any video source (DVD, VCR, camera, etc.), capture analog video, and convert the signals to digital Windows Media format.
- **Starbak Conference Engine** – A rack-mounted appliance that enables the addition of PC content (e.g., PowerPoint) and videoconferencing content into the streaming environment. This device allows Dow to use its existing base of videoconferencing systems as content sources.
- **Starbak Delivery Nodes** – Devices installed at the edge of the network, close to where users are located, for the purpose of serving video locally, either live or on-demand, over the high-bandwidth LAN at high quality. Managed automatically by the Starbak Manager, these devices optimize content delivery and protect Dow's production network (LAN and WAN) from the rich media traffic.



USING DIAMONDTV

The following steps describe how Dow uses DiamondTV:

Step One: Creating and Broadcasting Live Sessions

For live sessions, Dow leverages both its existing satellite distribution network and DiamondTV. To broadcast live content, presenters go to one of Dow's satellite uplink locations, from where the content is broadcast live to approximately 80 Dow offices. In six of those 80 locations, the live content is captured using a Starbak Encoder and distributed via Dow's wide area network (WAN) to smaller offices and those not equipped to receive the satellite signal. The captured content is also added to the content library for on-demand viewing.

Step Two: Creating On-Demand / Pre-Recorded Sessions

For on-demand sessions, content creators (presenters) either make their presentations in locations equipped with Starbak Encoders or record the content and upload the digital content to the Starbak system. Once digitized, the content is stored on streaming / file servers and then automatically distributed to select Starbak Delivery Nodes throughout the world (based on the location of the users authorized to view the content item).

Step Three: Accessing On-Demand Content

To view rich media content, Dow employees visit the rich media library section (created and dynamically updated by the Starbak Manager based on the user's credentials) on the company's Intranet. Thanks to the single sign-on feature, the user does not have to log into the content portal in order to see the content he is allowed to view.

THE DEPLOYMENT EXPERIENCE

The Starbak solution was officially launched in Q3 2007. To date, roughly 80 programs (content items) have been created and distributed throughout Dow. As of September, approximately 30 sites have access to DiamondTV, with another 120 scheduled for activation by the end of Q1 2008.

Although no global technology deployment is easy, Dow speaks favorably of Starbak's performance to date. "Working with a large company, like Dow Chemical, presents unique challenges," reports Chris Duncan, Global Leader, Communication Resources at Dow Chemical. "Throughout this project, Starbak has performed well and worked hard to address our requirements and concerns."

SOLUTION BENEFITS

The primary benefit of the Starbak-powered DiamondTV initiative has been the ability to provide Dow's global user community with convenient access to the information they need to do their jobs, regardless of their location or time zone. Additional benefits include:

- **Increased Reach** – Dow estimates that the typical content item will be viewed by 20% more people without an increase in cost. In addition, the system makes rich media content available to employees in smaller offices (and even home offices).
- **Simplified Content Creation** – The automation of the content creation process has allowed Dow to create more content more easily than ever before.
- **Improved Security** – User-based permissioning within the system allows Dow to limit content access – on an individual content item basis — to only authorized personnel.
- **Decreased Cost** – Dow estimates a savings of 25% per content session / program through the use of streaming to distribute content throughout the global environment.
- **Ability to Segment Audience** – DiamondTV allows content creators to define who should view each content item, allowing them to create customized messages for target audiences.
- **Increased Accountability and Tracking** – The system's logging and reporting systems allows Dow to track content viewing by content item, user, department, topic, and so on. This helps Dow measure the value and effectiveness of its content to a greater degree.
- **Increased Scalability** – The system's modular architecture allows Dow to expand the content creation, storage, and delivery capacity at any time – without having to overhaul the entire environment.

BEST PRACTICES / LESSONS LEARNED

Although the DiamondTV project is proceeding well to date, the team has learned a few lessons along the way.

IT Involvement – Dow was wise to include representatives from the Information Technology (IT) and Networking departments in the streaming project from day one. Having these resources involved early had the following benefits:

- Helped streamline the decision-making process throughout the project
- Paved the way for integration with internal systems and services (e.g. LDAP)
- Ensured that the deployment did not infringe upon the production IP network.

Capacity Planning – The rollout of DiamondTV has spurred increased interest in content creation and distribution throughout the organization. In hindsight, perhaps this should have been anticipated. For now, however, Dow is dealing with this surge in demand by:

- Limiting content creation to high quality, polished content on approved topics likely to be of interest to large audiences within the firm.
- Expediting plans for expanding the content storage capacity within the system.

Gradual Deployment and Migration – To minimize the impact on the user community, Dow is deploying DiamondTV gradually. In addition, instead of implementing a hard cut-over from the existing satellite system, Dow is using a hybrid approach including elements of the satellite system and the new streaming system. By avoiding the temptation to rush the deployment and cut-over, Dow has been able to add new functionality to the environment without impacting the level of service.

FUTURE PLANS

In addition to the planned deployments and natural expansion of the content library, Dow expects to add new features and functionality to the DiamondTV system.

Items currently under consideration include:

- Expansion of the content storage capacity within the environment
- Extension of content viewing privileges to external audiences (partners and the public)
- Use of digital signage throughout Dow (powered by Starbak's Display Engine)

Furthermore, in 2008 Dow expects to upgrade its current Starbak INV system to the new Starbak V3 — the third generation solution from Starbak designed to support greater scalability and improved ease of use.

SUMMARY

The deployment of Starbak's Integrated Network Video (INV) platform has injected a new level of flexibility and agility into Dow's communication environment. As a result, the company is better poised to meet the challenges of providing rich-media content to 43,000 employees around the world.

About Starbak

Starbak is a leading global provider of video networks that allow organizations to reach employees, partners and customers with “always on,” live, and on-demand video programming. Starbak’s solutions are used by hundreds of companies worldwide, including Fortune 500 corporations, colleges and universities, public schools, hospitals, and government agencies. Starbak solutions are available worldwide through a network of value-added resellers and full-service integrators. Starbak is a fully authorized, licensed and certified partner for Microsoft Windows Media. For more information, visit <http://www.starbak.com>

About Wainhouse Research

Wainhouse Research (www.wainhouse.com) is an independent market research firm that focuses on critical issues in unified communications and collaborative technologies including IM, presence, audio conferencing, web conferencing, mobility, videoconferencing, and streaming media. The company conducts multi-client and custom research studies, consults with end users on key implementation issues, publishes white papers and market statistics, and delivers public and private seminars as well as speaker presentations at industry group meetings. Wainhouse Research publishes a free newsletter, The Wainhouse Research Bulletin, as well as a number of reports detailing the current market trends and major vendor strategies.

About the Author

Ira M. Weinstein is a Senior Analyst and Partner at Wainhouse Research, and a 15-year veteran of the conferencing, collaboration and audio-visual industries. Prior to joining Wainhouse Research, Ira was the VP of Marketing and Business Development at IVCi, managed a technology consulting company, and ran the global conferencing department for a Fortune 50 investment bank. Ira’s current focus includes IP video conferencing, network service providers, global management systems, scheduling and automation platforms, ROI and technology justification programs, and audio-visual integration. Mr. Weinstein holds a B.S. in Engineering from Lehigh University and can be reached at iweinstein@wainhouse.com.

