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STREAMING with GRACE

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CATHEDRAL ON THE INTERNET.

GraceCom founder
Canon Rick Johnson. ▶

STREAMING with GRACE

High atop San Francisco's Nob Hill stands one of the city's most recognizable icons – **Grace Cathedral**. The massive bronze framed doors and gothic theme offer little indication that inside resides one of the more advanced audio streaming operations in the city.

 GRACE CATHEDRAL IS NO STRANGER to technological innovation. In fact, the inventor of celluloid film, Hannibal Goodwin, was pastor for a short term at what was then called Grace Church. Goodwin used one of the earliest forms of the slide projector, known as the Magic Lantern, throughout his Sunday school classes. In an effort to improve upon the lantern's projection capabilities, Goodwin began work on a new medium, filing the patent for celluloid film in 1887 under the name "photographic pellicle."

More than 100 years and a handful of major and minor earthquakes later, a new medium, taking shape in the form of streaming technology, is making a positive impact on Grace Cathedral, enabling a powerful new means to project the voice of the cathedral's civic efforts.

GENESIS OF A MEDIA MINISTRY

During the era of deregulation in the 1980s, the Federal Communications Commission license requirements for public affairs programming ended. Dwindling budgets pushed "civic conversation" to the wayside; public forums rarely ventured beyond what Rick Johnson calls "couch shows."

"The whole notion of town hall, where you discuss the issues ... it doesn't exist anymore," says Johnson, founder and executive director of GraceCom, dubbed "the media ministry of Grace Cathedral."

By 1994, access to the Web had barely evolved beyond the Mosaic 1.0 browser, but it wasn't too early for GraceCom's founder to recognize the power and reach of the Internet and to see it as a tool to introduce civic discussion in a new capacity.

"I was thinking about where broadcast was going. It was all going toward tabloid and exploitation," says Johnson. "I really felt like using media to help people with their lives."

At the end of 1994, Grace Cathedral was in the midst of an aggressive capital campaign, raising funds for the costly renovation and expansion requirements of the church and growing congregation. During this time, an unusual offer was extended by a general partner in one of the oldest venture capital firms on Silicon Valley's infamous Sand Hill Road.

By this time, Johnson had been a member of the congregation for a decade, and his experience as an Emmy award-winning television producer was well known by the church's dean. "The dean gave me a call, and he said, we've got a donor who's done very well by his investments," says Johnson. "He's not particularly religious, but he wants to do some good, and he wants to use the information superhighway as a vehicle."

After some extensive research and the drafting of a formal business plan, the concept for GraceCom was born with the following mission at its core: To use emerging communications technologies to encourage spiritual growth, foster understanding of spiritual diversity, encourage reconciliation between religious traditions, and support the civic conversation on social justice and spiritual issues.

"It was really about getting the word out using the information superhighway," says Johnson. "It was as primitive as that. The television producer in me was more focused on what content would be put out. What would make a difference in people's lives? And why would anybody be interested in any of this?"

PRODUCTION BEGINS

Grace Cathedral has always played host to a variety of seminars and panels surrounding theological and community affairs. Thanks to the benevolent donation from Sand Hill Road, the tools and infrastructure required to document and disseminate the programming were now within reach.

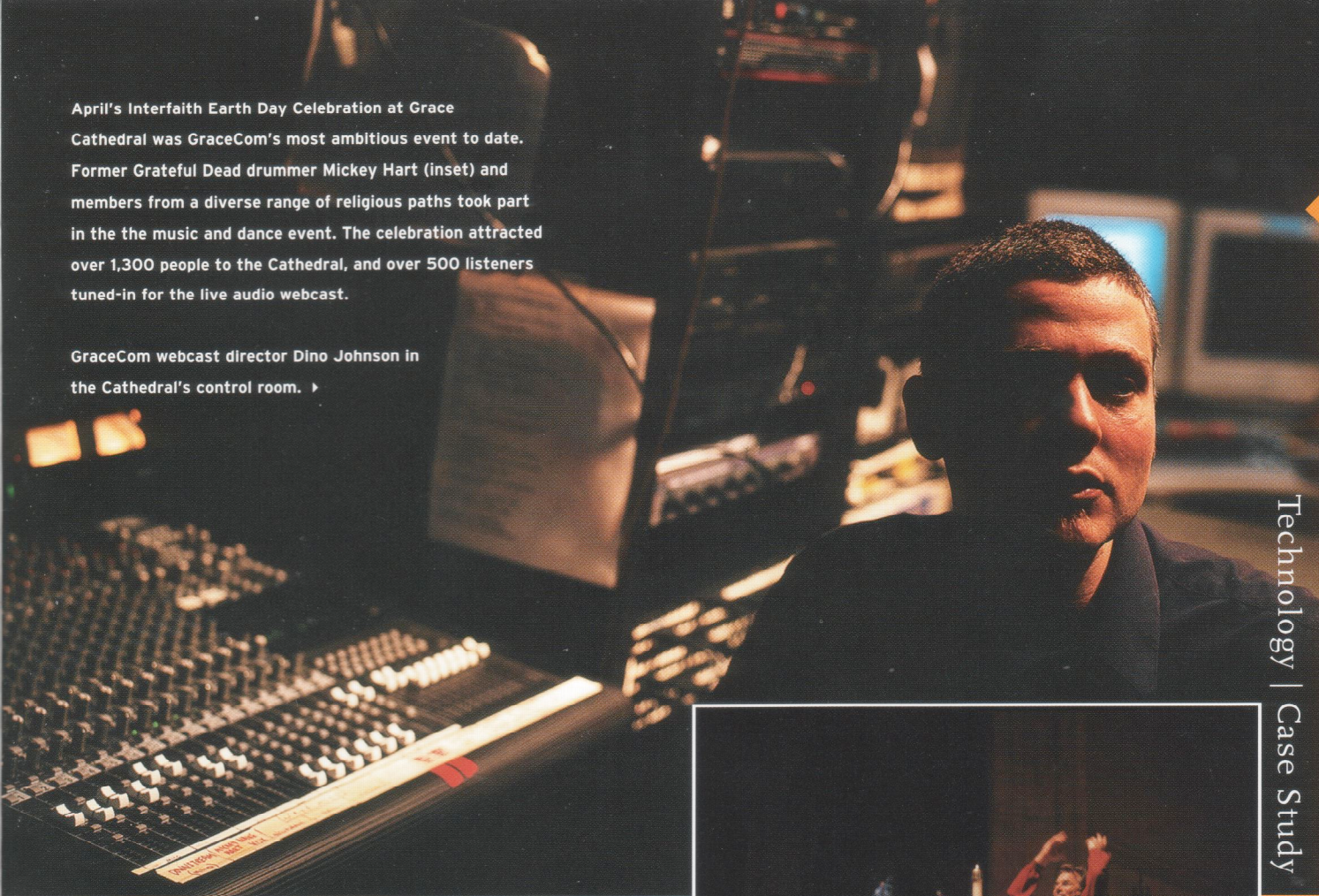
Just two months after GraceCom launched in the spring of 1995, the team coordinated a live broadcast of the United Nations' 50th anniversary interfaith service, held at Grace Cathedral. The event was fed live by microwave to a local television station, which donated airtime for the event.

"I knew the day was not here yet where the Internet could be the conduit for the kind of programming we had just created, but I could see it was just around the corner," says Johnson.

Shortly thereafter, the cathedral's phone and data wiring was completed and GraceCom began live audio webcasts of

April's Interfaith Earth Day Celebration at Grace Cathedral was GraceCom's most ambitious event to date. Former Grateful Dead drummer Mickey Hart (inset) and members from a diverse range of religious paths took part in the music and dance event. The celebration attracted over 1,300 people to the Cathedral, and over 500 listeners tuned-in for the live audio webcast.

GraceCom webcast director Dino Johnson in the Cathedral's control room. ▶



Technology | Case Study

"The Forum," the cathedral's weekly panel discussion on timely social and spiritual issues. The inaugural webcast, streamed in RealAudio over a dial-up connection, attracted more than 250 listeners.

"It took me back to my broadcast days," says Johnson. "I realized that what we need to be doing is creating events that become the studio and studio audience, for a larger distribution out to the people who are listening on the Web."

For the typical church organization, Johnson's concept was a relatively radical shift in direction. "Churches have to do with getting people in the door and in the pews. We're looking at building community and building common ground with people outside the church and using the Web as that megaphone to get the word out," says Johnson.

BUILDING GRACECOM

GraceCom was a one-man show in its infancy and has since grown to a staff of eight full-time and two part-time employees. In addition, a stable of freelance writers and multimedia producers are called upon for specific projects.

"We've developed program content and started doing The Forum every Sunday morning, like a one-hour talk show," explains Johnson. "That requires a producer and a researcher to book the guest and write the scripts and develop the content."

Now six years old, GraceCom has all the makings of a full-fledged production studio, diversifying its business strategies



across offline and online channels. In addition to The Forum webcasts, GraceCom streams the 11 o'clock Eucharists, the Choral Evensong, and a host of special events.

"The biggest reason to do it, for me, is for people who live too far away, or people who are at home sick with HIV, AIDS, elderly people who can't come," says Johnson. "That part of outreach in ministry relies entirely upon streaming – to keep us connected with people who, for one reason or another, can't come, or live in another part of the country."

Offline, GraceCom co-produces content with Trinity Television, the Episcopal Church Center and the Center for Theology and the Natural Sciences. The team has also produced award-winning commercials for the Episcopal Church and is currently in post-production on a documentary about the history of the labyrinth as a meditative tool.

Most notably, the build-out of the **GraceCathedral.org** Web site has given the ministry a significant advantage. The site offers an interactive Flash labyrinth, a QTVR tour of the cathedral, multimedia feature content, a weekly

newsletter and an extensive library of on-demand streaming audio.

"There are tremendous reasons to be doing it. But the focus is shifting from the fact that we have a Web site to what we are accomplishing with it," says Johnson.

GraceCom's return on investment, in part, literally comes walking through the door. According to Johnson, half of all newcomers to Grace first learn about the cathedral on the Internet.

THE WEBCASTING TECHNOLOGY

The weekly Forum is held in an auditorium setting. Each member of the panel wears a lavalier microphone, mixed and monitored for the house public address system by an engineer in the room. The mixed feed is sent to the control room, where another engineer is mixing and monitoring the audio with an eight-bus Mackie mixing console.

The audio feed is then sent to an Aphex Dominator II limiter and subsequently routed to a Power Macintosh G3 encoder. An iMac is also stationed in the control room, serving as the back-up encoder.

"I brought what I learned about broadcast quality standards to the work that we do here, even on the Web. Even if the fidelity is low, I wanted to make sure that we originated in as high a quality as we could," says Johnson.

All GraceCom events are encoded in Real SureStream format from 16Kbps (mono) to 90Kbps (stereo). The control room engineer monitors the stream quality by routing a local computer's audio output into the Mackie console.

"Everything we've done up until recently has been mono, low bit rate audio streams," says Johnson. "Now that we're using SureStream and have some higher connection speeds, we're webcasting in stereo."

The stream is then sent via TCP/IP through a T1 connection and served by Activate. GraceCom plans to install dual ISDN lines in the near future to alleviate latency issues associated with the T1's upstream feed.

Events taking place in the cathedral itself are managed in much the same fashion as the Forum, though additional

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microphones (Neumann stereo mics and AKG C451s) hang above to capture audio originating from the choir, organ and gallery.

Video is not currently part of GraceCom's regular offering, but this is likely to change as new revenue opportunities begin to surface and the cost of robotic camera equipment comes down.

"I want to upgrade to streaming the 11 o'clock service in video, because we can also stream weddings and memorials. Once we begin, it could be a good source of revenue for us," adds Johnson.

REALISTIC OUTLOOK

GraceCom has maintained realistic expectations about its streaming and production efforts, and Johnson expects the organization to realize the true fruits of its labor over the long term.

"When the capability of technology intersects with our infrastructure and experience – to the point where we've been in production for five, six years – then we'll have an archive of video content and the distribution means will be affordable and ready for us, and will intersect," says Johnson.

In the center of Johnson's GraceCom office stands a vintage Victrola phonograph, serving as a reminder of the potential of media: A needle wiggling along a groove of spinning acetate held the power to change the world's notion of what is possible. It seems the next chapter is now being written. Johnson says, "Streaming and the interaction that comes through the IP technologies is a way of changing people's perceptions, and opening their hearts and opening their minds, that we've never had before." *smm*

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