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UNIFIED COMMUNICATIONS WITH ADOBE® CONNECT™

Стаття присвячена розгляду теми уніфікованої комунікації у середовищі електронного навчання використо-вуючи власницьку систему програмного забезпечення Adobe® Connect™ (раніше відому як Macromedia® Breeze™). Автор описує сучасні проблеми розгортання цієї технології в навчальних закладах, а також рішення цих проблем. Матеріал статті ґрунтується на реальному використанні цієї технології в Чернівецькому національному універ-ситеті імені Юрія Федьковича.
Ключові слова: уніфікована комунікація, УК, Adobe Connect, відео, аудіо, чат, eLearning.

Статья посвящена разделу темы унифицированной коммуникации в среде электронного обучения, используя собственническую систему программного обеспечения Adobe® Connect™ (ранее известного как Macromedia® Breeze™). Автор описывает современные проблемы развертывания этой технологии в учебных заведениях, а также решение этих проблем. Материал статьи основывается на реальном использовании этой технологии в Черновицком национальном университете имени Юрия Федьковича.
Ключевые слова: унифицированная коммуникация, УК, Adobe Connect, видео, аудио, чат, eLearning.

The article presents most up-to-date material regarding unified communications in the eLearning environment using the proprietary technology Adobe® Connect™ (formerly Macromedia® Breeze™). The author describes contemporary challenges every educational institution faces when deploying and using this technology as well as solutions addressing this issue. The material is based on a real-time usage of this technology at Chernivtsi National University.
Keywords: unified communications, UC, Adobe Connect, video, audio, chat, pods, eLearning.

Many educational organizations today are considering how best to define and implement a unified communications (UC) solution – providing integrated high-quality audio, video, and data – that enables them to operate efficiently in a dynamic global marketplace and remain competitive. At a high level, there are two approaches to implementing a UC solution: obtaining a UC solution from a single vendor or investing in best-of-breed products to create a UC solution tailored to fit the exact needs of an educational organization.

Educational organizations are increasingly favouring best-of-breed UC solutions over those from a single vendor, as pre-packaged UC solutions can have a number of drawbacks. While some vendors offer complete UC suites and boast of tight integration across their applications, implementing those suites often requires an educational organization to rip out and replace existing investments, retrain staff and students, and accept all components of the vendor's solution even if they do not optimally address their educational needs. The inflexibility of single-vendor solutions can become increasingly burdensome as needs change over time. On the other hand, educational organizations utilizing best-of-breed applications for their UC solution can roll out changes over time and train staff and users on a gradual basis, which keeps educational organizations moving and all students comfortable with the technology in place. Additionally, with the ability to select a suite of best-of-breed applications based on actual educational needs, the UC solution better serves the true needs of an educational organization. And as an educational process and form needs change over time, best-of-breed UC solution components can be replaced as necessary – without the hassle and cost associated with overhauling an entire UC solution from a single vendor. Adobe Connect web conferencing solutions integrate seamlessly with other elements of the communications infrastructure (such as Microsoft Office products, e. g. Microsoft Office Word, Microsoft Office PowerPoint, etc.) and include prebuilt adapters that enhance extensibility. Educational organizations can select the solutions that best meet the diverse needs of their users, with confidence that those solutions will integrate smoothly. By focusing development and deployment efforts on creating web conferencing solutions that support very rich interactions, superior extensibility to handle myriad use cases, and the ability to tightly integrate with other communications infrastructures, Adobe Connect enables a more effective and flexible approach to UC than that which can be achieved through any single vendor's UC solution [3, с. 232].

Communication silos

Most educational organizations are already using UC technologies. They have deployed each channel over time, using different vendors and technologies that rely on different standards and deployment models (on-premise versus as a service). In addition, especially in large academic institutions, each college/unit or department may need to run its own communications systems to optimally meet specific educational needs [2, 336]. Given this complexity, it's critical that all technologies work well together. Adobe Connect can help break down communications silos by fitting into, integrating with, and extending the existing communications infrastructure. It integrates all communications through web conferencing and closely connected APIs, while also enabling organizations to choose the communications technologies that best meet their educational needs.

Adobe Connect is a complete web conferencing solution that enables live, interactive web meetings; virtual classes; on-demand presentations and courses; and real-time collaboration through eLearning and tracking capabilities. It supports an organization's UC strategy by providing a highly extensible platform that can be tailored to the collaboration needs of each department, deployed quickly, and fit within a best practices approach.

Modern educational applications have changed end users' expectations regarding enterprise applications. Today, end users (and gradually academic staff and students) value personalization and customization, allowing them to adjust the application to meet their educational needs, with access on any platform including mobile devices. Yet most technology deployed in the enterprise does not provide this flexibility [1, 56]. Adobe Connect has been built from the ground up on

the latest technology with a focus on extensibility, cross-platform access, and a rich user experience as key components of the best-of-breed UC strategy. Moreover, its flexibility does not compromise security or compliance. An Adobe Connect educational meeting room offers components called ''pods. '' Each pod represents a component of UC functionality: VoIP, video, chat, whiteboard, content repository, and so on. Students can combine these pods any way they want, building real-time or asynchronous collaboration applications. For example, Chernivtsi National University, deploys Macromedia Breeze system and its components (a slightly older version of Adobe Connect), and leverages Adobe Connect to enable end-to-end real-time guided educational process of presenting information using either Microsoft Office PowerPoint or Adobe Flash®. This university also utilizes customized pods to facilitate an online class workflow, enabling students to help each other complete electronic presentations directly within the Adobe Connect environment, resulting in significantly higher process workflow. The Adobe Connect pod model is extensible. It is possible to build new pods that fetch data from external applications via standard web services. This flexibility enables educational institutions to build collaboration applications that meet specialized needs. Each application can be saved as a template and shared with other groups. With over 100 APIs and a software development kit (SDK) that supports Flex, Adobe Flash®, and ActionScript® 3. 0, educational software developers can easily add to Adobe Connect's already rich set of functionality. Adobe Connect APIs enable bidirectional data integration with educational portals (e. g. Moodle, Drupal, WordPress, etc.), LDAP systems, reporting applications, CRM systems, learning and content management systems, webinar and event management systems (like Eloqua), and other corporate systems. Even with this flexibility, teachers and staff can still control functionality at a granular level to meet regulatory and security compliance requirements. For example, some educational organizations require that chat be disabled, others that everything be recorded, and others that nothing be recorded. Adobe Connect provides compliance control to meet all these requirements. In addition, the Adobe Connect Mobile client is a critical piece of the solution, enabling students to collaborate and communicate from any location at any time and from a variety of mobile devices and tablets, including iOS, Android™, and BlackBerry devices. Participants can collaborate via Adobe Connect Mobile while watching and listening to live presentations with two-way webcam video, chat, polls, and more. Two-way VoIP meeting audio is supported over a Wi-Fi or 3G connection, as well as the ability to join a meeting through a telephone conference call or even have the conference dial out to the mobile user, eliminating the need to enter complex dialing codes.

Best-in-class architecture

Adobe Connect provides many integration points with UC and collaboration systems, such as student/user directories, audio conferencing services, SIP/SIMPLE– or XMPP-based presence and IM solutions, and content repository and collaboration portals.

Below are several key integration points supported by Adobe Connect, although not exhaustive:

Audio integration – Adobe Connect enables educational organizations to bridge the audio from any audio conferencing provider into an Adobe Connect room and provide two-way communication between Adobe Connect integrated VoIP and telephone audio. This is done through a variety of native audio conferencing service provider connectors, or through the Adobe Connect Universal Voice capability that works with virtually all audio conferencing providers. Universal Voice enables the VoIP function of the Adobe Connect meeting to be merged with telephone-based audio conferencing. Hosts can broadcast the telephone-based audio conference in the web meeting and use the Adobe Connect meeting room to pass VoIP (computer microphone) audio into the telephone conference, turning the Adobe Connect meeting client into a de facto softphone. In addition, vendor-specific telephony adaptors provide the ability to control all aspects of the audio conference, such as starting and stopping a conference call, muting selected users, putting selected users on hold, and disconnecting users, while providing real-time indicators for current speaker and dial-in status;

Video integration – with Adobe Connect, educational organizations can leverage existing hardware-based video conferencing (VTC) solutions and stream video and audio into Adobe Connect meetings by integrating with existing SIP-compliant video conferencing hardware. This lets users attend from anywhere on virtually any computer without installing a dedicated viewing application or requiring pricey add-on VTC hardware, enabling an optimal desktop video conferencing solution on top of existing investments. Video conference integration is also enabled by configuring the Flash Media Gateway portion of the Adobe Connect server to connect to a SIP-enabled video device and to receive an H. 264 video stream. Adobe Connect will then replicate that stream for all users in the meeting;

Instant messaging integration – Adobe Connect features tight linkage with an educational organization's existing deployed IM infrastructure and smoothly integrates XMPP– or Microsoft Office Communications Server-based presence and IM chat sessions within the Adobe Connect interface. This integration brings a commonly used communication method seamlessly into the conferencing environment, enabling a more unified end-user experience and reducing the user need to switch among multiple applications while attending an online web meeting;

Scheduling integration – thanks to Microsoft Outlook and IBM Lotus Notes integration, hosts and participants can easily schedule, start, and join Adobe Connect meetings from their Microsoft Outlook or IBM Lotus Notes email and calendar. Address books, availability lookup, and recurrence features for increased efficiency and productivity work seamlessly with Adobe Connect;

Learning Management System (LMS) integration – Adobe Connect can run as a standalone LMS for rapid training scenarios and can also be integrated with an existing LMS environment. Prebuilt integrations exist with several of the top LMS providers (Blackboard, SumTotal, Plateau, and others), delivering enhanced online learning features and capabilities. Users can easily manage their Adobe Connect meetings and courses from within the LMS environment.

UC technologies have the potential to revolutionize the way people work and collaborate by merging multiple capabilities. However, deploying a UC solution can be a complex task. It requires building an evolutionary roadmap that minimizes the risk of replacing existing business-critical systems and a business case that justifies large investments. Thanks to its advanced features, ease of deployment, and integration framework, Adobe Connect can support your path

to unified communications by leveraging existing technology investments, minimizing risk, and encouraging rapid and broad user adoption. Adobe Connect can help educational organizations successfully deploy a key UC application and build momentum for UC agenda.

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