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CommuniGate Pro's Mobile Unified Communications

Monetizing UC for an Enterprise SaaS Value Added Service

A Frost & Sullivan White Paper

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UNIFIED COMMUNICATIONS DEFINED

Without a doubt, the term "Unified Communications" (or simply UC) has been one of the hottest buzzwords in the telecom industry over the past couple of years. UC promises to expand communication services, especially hosted or SaaS, to the most lucrative customer, the business subscriber. A wide array of equipment and application vendors has been promoting UC solutions, while the topic has become a major fixture at various shows such as WMC, CTIA and NXTcomm, among others. But what exactly is UC and why has not the UC market lived to its gaudy expectations?

One major restraint that has curtailed growth is that most enterprise (including IT Department) workers still do not have a notion of what exactly UC is. As defined in a recent Frost & Sullivan Stratecast report[1], Unified Communications is the "evolution of telephone, e-mail, and instant messaging functionality into a single service or application that provides the standard communications environment for the office worker and well-connected residential customer". Simultaneously, the advent of voice and data convergence and of technologies such as ENUM is creating the need for some sort of a single unique Internet address (something such as: username@company.com) which goes above and beyond the simple e-mail address concept. The idea is to be able to route to that single address space any sort of protocol (including e-mail) and be able to also reach that same person simultaneously via IM, desk phone or mobile handset.

A central element of the UC idea, especially for network operators providing UC in the SaaS model, is the concept of unifying distinct communication channels (fixed and mobile voice, instant messaging and e-mail) via a single client interface and experience. One of the most crucial features of UC is the power of obtaining real-time information about the presence status of people and having those UC applications make decisions and act based on presence services. Also intrinsic to that definition, from a business perspective, is the idea of improving the efficiency and workflow of the enterprise worker. From a consumer standpoint, UC allows users to increase their chance of successfully contacting someone right on the first attempt.

The concept of "workplace activities" is changing from tasks carried out in a fixed office location to assignments that can be performed in a variety of locations globally. Concurrently, as the lines in the classic battle for balance between work and life become increasingly blurred, workers will look to technology as a tool to help them manage their communications, and lives. Mobile access is sine-qua-non in order to meet this blending of activities, as users will need to be able to register any device, at any time and any place they happened to be at. For instance, a roaming executive can have his phone ring both at his home office and at an office he happens to be visiting, an advanced mode of "hot desking" as he travels around. Therefore, FMC (Fixed Mobile Convergence) technology goes hand in hand with UC. Ideally, the phone calls and email of an end-user can be directed towards

1. "Unified Communications Demystified", SPIE (Stratecast Perspectives & Insight for Executives) 2007 #32 - August 31, 2007

any device that is capable of getting the information and is "registered" to that user account, anyplace in the world.

Since the UC market is still evolving, there have been quite a few competing definitions of the acronym. We believe it is better to think broadly about UC, as a technology market sector, or in other words, a group of communications applications using a common set of technologies that evolve over time. The term "unified" indicates that these tools are integrated and share information such as by presence services, in order to deliver a unified experience both in terms of usability and manageability. The tools include:

- Unified Messaging (e-mail, voice mail, and landline SMS)
- Presence awareness and management
- Unified (Audio / Video) Conferencing and Collaboration
- Secure IM (Instant Messaging)
- Scheduling and calendaring tools
- Shared online workspaces & folders with ACL management across domains
- OTA Mobile Access "Over The Air" or push
- Web 2.0 delivery UI agent

This positioning paper presents an innovative multi-tenant UC solution from CommuniGate Systems and how it addresses challenges being faced by service providers looking to offer UC in the SaaS model. We will also discuss some other industry trends and how a good client design can be fundamental in increasing the uptake of UC by both consumer and enterprise users.

OTHER MARKET TRENDS

User Experience: Key Issue Concerning Service Providers

Growing competition and M&A activity have led to the acceleration in the commoditization of voice services and an increased propensity for end-users to swap operators. As a result, carriers started looking for new innovate value-added voice/data services that can increase their ARPU (Average Revenue Per User), in order to offset the decline in voice revenues. Service providers are also looking for ways to raise the level of satisfaction of their end-users and consequently reduce the churn rates of these subscribers. Moreover, operators also desire to be more flexible in what services they offer and how they offer them.

A key determinant of the overall success of a service is the UE (User Experience) of that application, and the UI (User Interface) is a critical component of the overall end user experience. The UI represents the focal point of interaction between the device and the user. A good UI design usually entails the integration of applications, call control, and some value added features in a simple and easy-to-use man-machine.

The current evolution to the NGN (Next Generation Network) has led to a shift of some intelligence from the core to the edge of the network and that also resulted in a further increase in the complexity of the user interfaces. Hence, not surprisingly, the majority of the current user interfaces are far from being ideal, and the resulting intricacy in using devices such as cellular phones or PDAs can lead to low adoption rates of some features or applications. This was highlighted in a recent survey commissioned by Nokia which showed that Asian subscribers only use about a quarter of the total number of handset functions available, whereas in Europe, that number is even lower at around 10 percent.

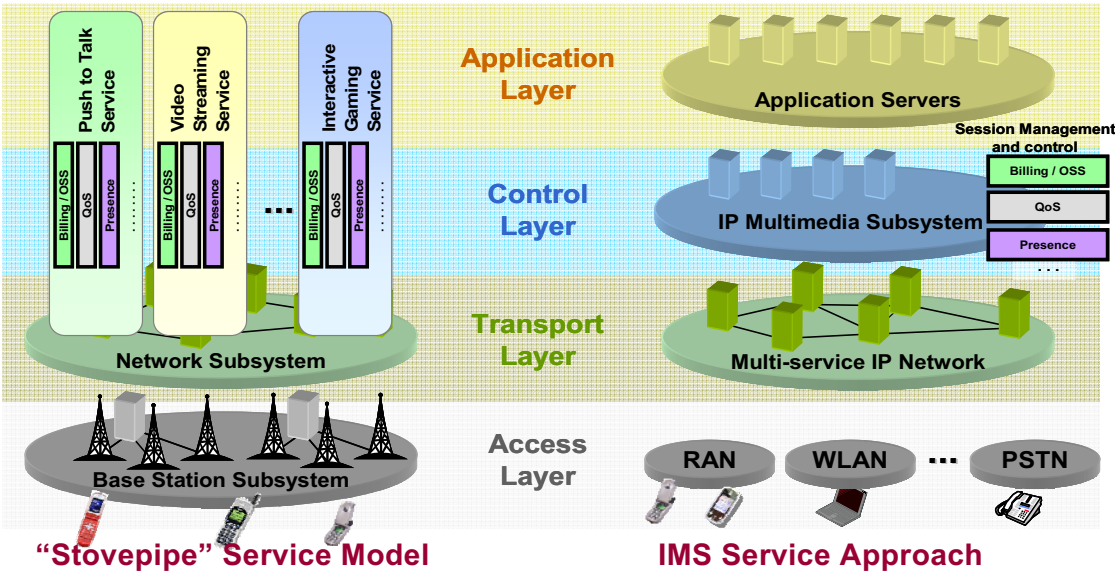
Clearly, the market needs a common "look and feel" and user-friendly UI that can give subscribers a consistent experience regardless of where they access the network. For service providers a good client design must be coupled with delivery features that are low impact and suitable for large scale deployments where thousands of companies with potentially hundreds of users each will access the UC solution following a SaaS model. Installation on the desktop should be straightforward and held at a minimum, lending the requirements directly to Web 2.0 technologies like Adobe Flash and AJAX. A good UI must also have a mechanism to link to other VAS (Value Added Service) applications the service provider offers. Delivery of video content such as IPTV/VOD (IP Television / Video on Demand) is an important VAS many providers have invested on for their triple play strategies. A modular system with open APIs is fundamental to insure the operator has the ability to add new applications to the UI quickly.

The Advent of IMS and its Ramifications: Access Agnostic UC

The telecom world is going through a profound transformation and aligning itself more closely to the IT model of a fast and flexible rollout of new services. The traditional strategy to offer new services in the legacy PSTN network was based on a vertical "stovepipe" architecture, and proved to be inflexible in delivering new applications in a fast and efficient way. Common functions such as presence, billing and QoS (Quality of Service) were often duplicated in the "app server farm" residing at the service node, which invariably led to scalability and system integration issues.

The IMS (IP Multimedia Subsystem) architecture addresses all of the above issues. IMS is a framework allowing fixed, mobile and cable operators to offer a new generation of rich voice, video and multimedia services across both legacy circuit switched based and new packet switched based networking infrastructures. IMS uses packet technologies for underlying transport and relies on SIP for call signaling between the entities. One of the key themes of IMS is the concept of reusing common functions (e.g. billing, presence, QoS) and then integrating them horizontally. These modules can be reutilized for many different applications, as depicted below:

Figure 1- IMS: A More Efficient Service Implementation



Source: Frost & Sullivan

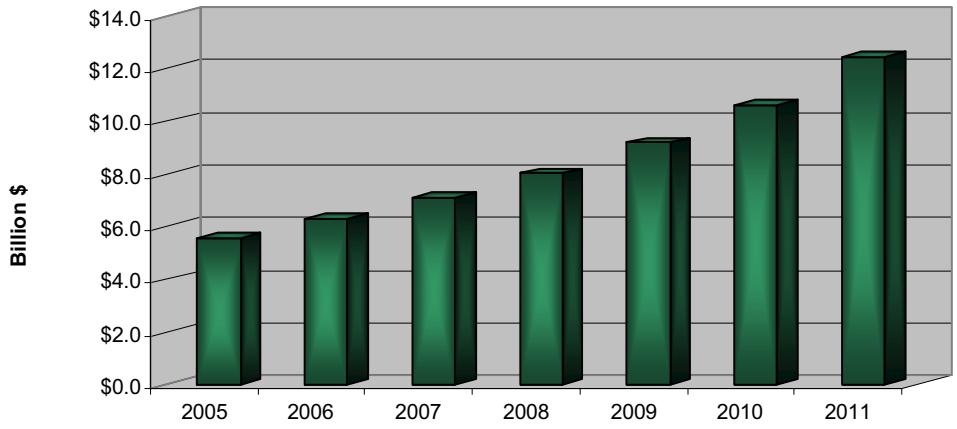
By integrating common functions in a horizontal fashion, IMS allows these functions and additional information to be reused for many different applications. Thus, IMS will also be a catalyst in the creation of new "combinational services" by allowing carriers to rapidly mix a few existing applications in order to cater to the needs of a particular customer segment.

The applications of the future such as UC will therefore need to be adaptive (i.e. adapt to the access and device type), seamlessly ubiquitous, SIP (Session Initiation Protocol) enabled and capable of handling location intelligence and user availability. The access agnostic feature of IMS will require these apps to have a common look and feel no matter which network the end user is accessing them from. SIP will not only be an IMS enabler, but also a way to deliver more intelligence to the endpoints. But in order to achieve more intelligent endpoints, there is a need to develop a more sophisticated UI, which in turn increases complexity. Hence, the new client interfaces need to be both smarter and more user-friendly.

The Unified Communications Adoption Wave

Factors such as the growth in teleworking activity, increased employee mobility, the growing proliferation of mobile devices and the pervasiveness of presence and availability will fuel the uptake of UC. According to our forecast, the market for Unified Communications (including Conferencing and Collaboration) is set to grow steadily through the end of the decade and the worldwide revenues are expected to grow significantly over the forecast period (at a CAGR of about 14.4 percent) as illustrated below.

Figure 2 - Worldwide Unified Communications Market Forecast 2005-2011



Source: Frost & Sullivan

One important UC market segment that still remains somewhat underserved is the SME (Small and Medium Enterprise) space. Our discussions with various decision makers in this sector have revealed that the majority of SMEs still have not adopted UC, due to a variety of reasons, including cost, complexity and difficulties in defining a clear business case. Therefore, we believe there is a significant opportunity for ISPs and next-generation service providers (xSPs) to provide UC to these SMBs in a SaaS (Software as a Service) type model. Such an offering would be attractive to ISPs and xSPs not only because it addresses the UC SME market opportunity but also because of other positive trickle-down effects. The business subscriber typically entails higher margins and has a higher propensity to use both broadband and mobile networks via an application such as UC, in order to keep a constant line of communication open with the office.

INCREASED COMPETITION FROM "OVER THE TOP" PLAYERS

Wireline carriers are increasingly concerned with the disruption wave being caused by new competitors, including "over the top" players such as Google, MSN/Microsoft, Skype/e-Bay, Vonage and Yahoo. Some of these companies, in particular Microsoft and Google are providing their own SaaS solution targeted at business subscribers. Both Google and Microsoft are also seeking out network operators to "white label" their SaaS offering and share in the advertising revenues. This poses a significant risk for those operators that become nothing more to the subscriber than an ADSL line that can churn at the next "price war" in the market. Loosing control of the subscribers and the applications they use can have dire long-term consequences when those white labeled services compete directly with the very services under Google Apps or Microsoft Live; these companies potentially could start attracting the operators' subscribers to churn off the providers' products in one swoop.

Meanwhile mobile operators are facing challenges such as lower margins for voice service, limited uptake of data services, high subscriber penetration rates, and many of them have yet to experience a better return on their third generation network investment. Furthermore, all service providers are increasingly under pressure from these "over-the-top" players to rapidly introduce new custom apps to react to new opportunities, given the pricing erosion that has become prevalent in the industry.

The bottom line is that network operators all types will need to attain a better *service velocity*, or the ability to quickly and cost effectively introduce new UC offerings and multimedia applications within their networks. These new services should be much simpler to implement and more efficient in terms of performance.

THE RATIONALE FOR A NEXT-GENERATION UC CLIENT SOLUTION

The shift of some intelligence from the core of the network to its edge offers some opportunities to third party application and client developers. IP enables multi-modality, including combinations of user interfaces that were not easy to achieve in the legacy world, including graphics, speech and rich media (VoIP, IM, IPTV/VOD and presence) for access by anyone, anywhere, anytime.

While the IMS ecosystem has been committed to the idea of "open APIs" via a host of web services, the delivery of these combined services is more problematic. Therefore, third party developers have been seeking for an application development environment that would allow them to design a "universal UC client" that can be potentially leveraged for hundreds of web-based services.

Adobe's Macromedia Flash-based Adobe® Flex™ 3 has been one of the preferred platform development options in the global programmer community. Flex3 is a Rich Internet Application framework that runs on any Adobe Flash9 or higher player and allows developers to create powerful UIs that have rich multimedia underpinnings.

One of the key features of Flex is the fact that it is a wide encompassing cross-platform deployment environment, and as such, programmers can create Internet apps that run identically on all major browsers and operating systems. In fact, Flash has excellent support among mobile vendors, being bundled with offerings from the top five mobile handset manufacturers. Furthermore, it offers the best web compatibility; in other words, it offers the same look-and-feel whether the client is running on a Mac laptop or a Windows desktop. This portability aspect is a very compelling differentiator and has made Flash one of the most ubiquitous software delivery agents on the globe today, with an installed base of over one billion Flash players.

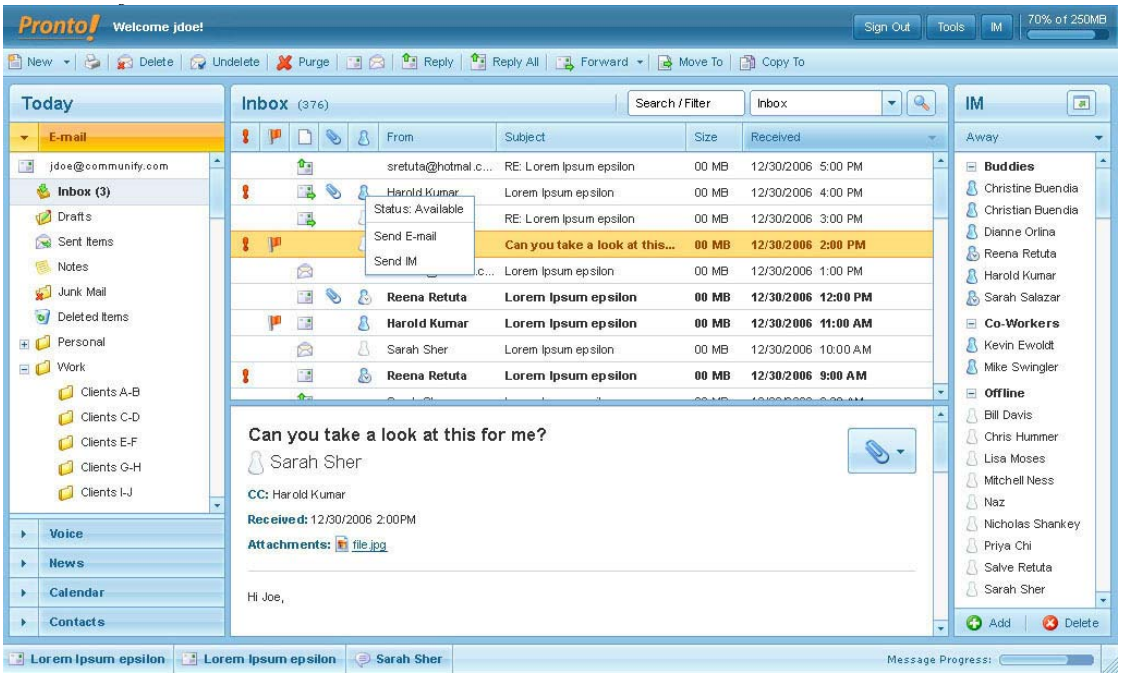
In addition, Flex has established a strong developer community and support network. Flash projects include Mobi TV, Verizon's ZON Network, gofreeSMS, Verizon's Sweet Flex Based Ringtone Store, and a variety of Japanese gaming ISVs that have rolled out games at operators such as NTT DoCoMo and KDDI.

INTRODUCING PRONTO! UNIFIED COMMUNICATIONS CLIENT

Pronto! is CommuniGate Systems' response to the challenges faced by today's operators looking to provide UC in the SaaS model. It is a powerful yet compact Flash-based UC client that offers a compelling end-user experience in addition to a host of value added functions. Pronto! combines Adobe Flash®, Adobe Flex™ 3 and Adobe AIR technologies with Rich Media and Unified Communications to deliver an integrated suite of value added applications ranging from e-mail and IM to Rich Media, Groupware and VoIP.

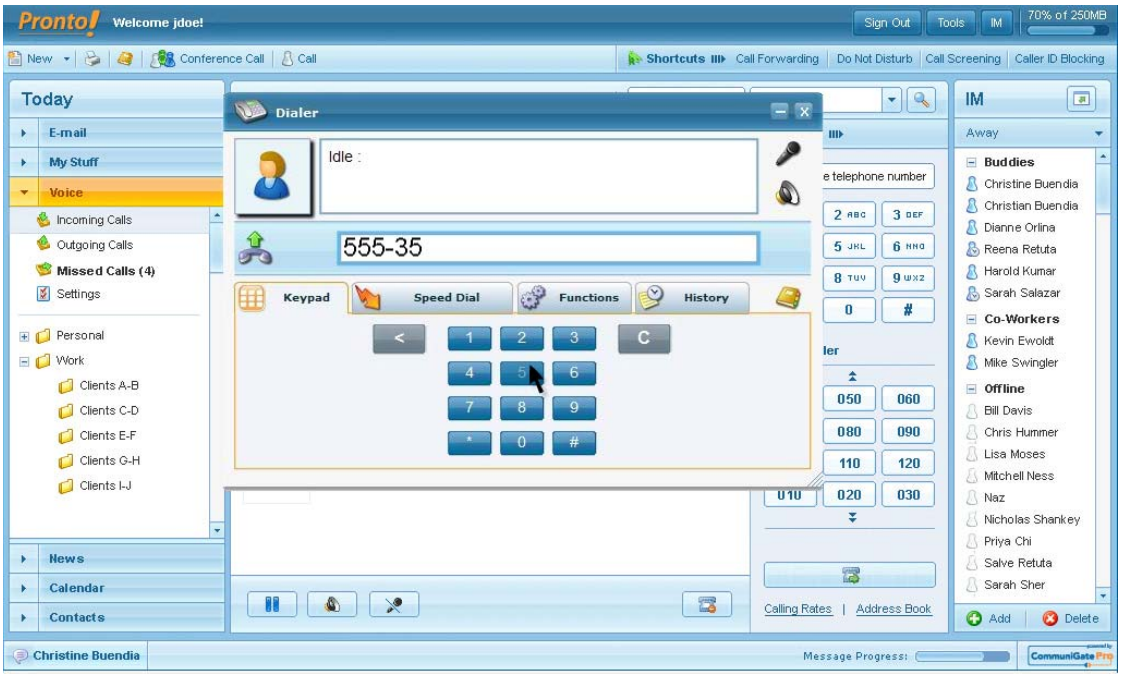
The Pronto! UC client is illustrated in the following figures:

Figure 3 - Pronto! UC Client Sample Screen (Inbox)



Source: CommuniGate Systems

Figure 4 - Pronto! UC Client Sample Screen (Integrated Softphone)

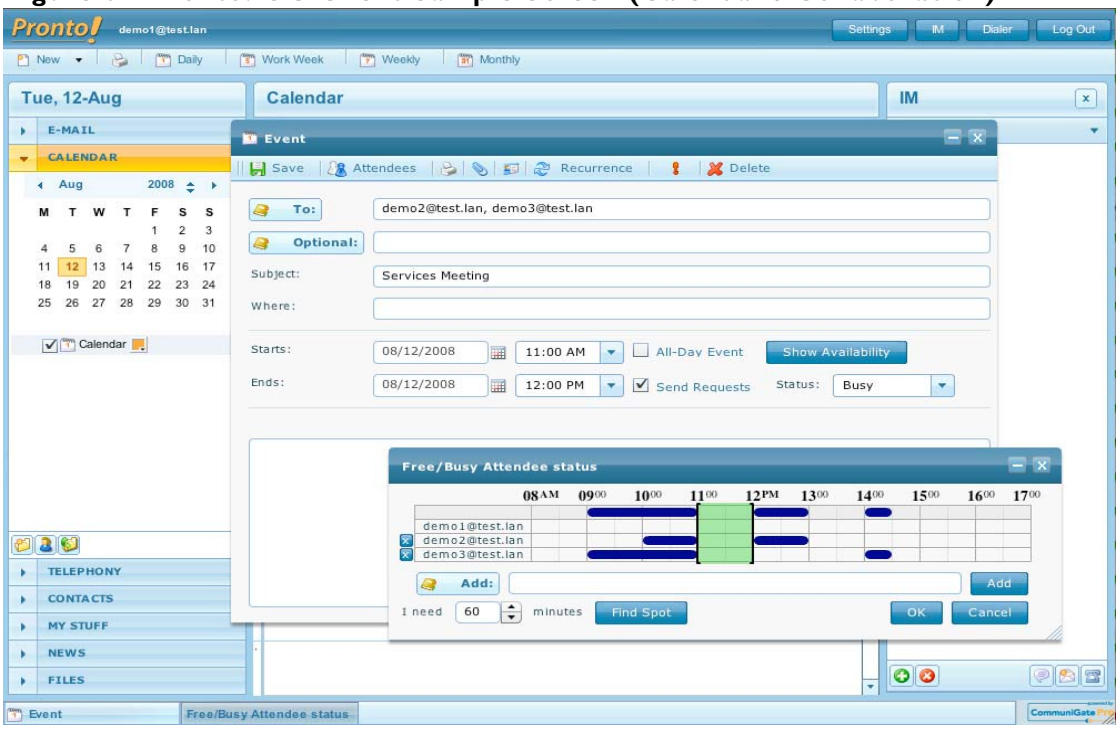


Source: CommuniGate Systems

Figure 5 - Pronto! UC Client Sample Screen (Rich Media)

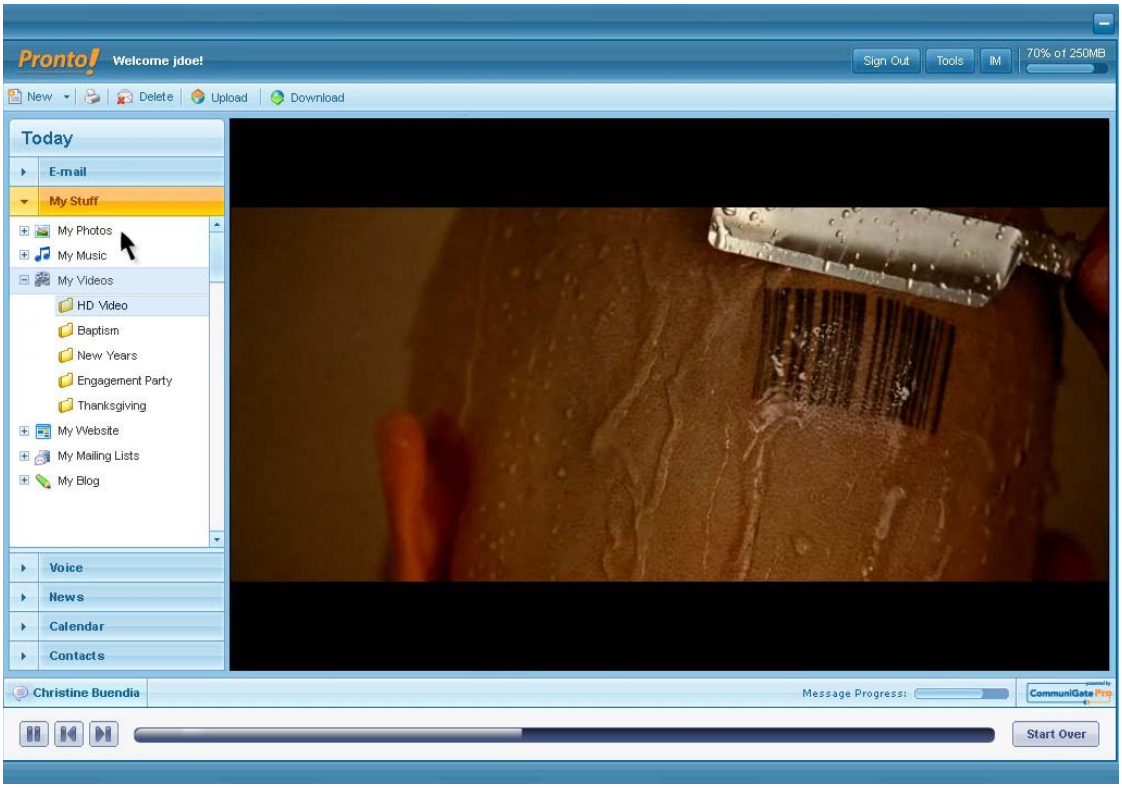
Source: CommuniGate Systems

Figure 6 - Pronto! UC Client Sample Screen (Calendar / Collaboration)



Source: CommuniGate Systems

Figure 7 - Pronto! UC Client Sample Screen (HD Video and Audio)



Source: CommuniGate Systems

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The Pronto! UC client offers value added features including call control (e.g. "click-to-call" from the user's name in an e-mail or IM session or from the address book) and calendaring (e.g. shared calendar management). In addition, it can help enterprises increase productivity by reducing human workflow latency due to communication inefficiencies, enabling employees to make use of their "down time" or time away from the office to stay in touch via their mobile phones (which can act as the corporate desktop phone, as an extension number with CommuniGate MobiConnect). Another benefit of Pronto! is its efficiency at scale: the product scales to support both consumer and enterprise subscribers, with virtual domains on the multi-tenant UC platform (CommuniGate Pro) which makes it appealing to carriers seeking to offer UC in the SaaS model. CommuniGate Pro is ultra-efficient, supporting densities 25x higher per server than enterprise class UC systems like those from Microsoft, Cisco or IBM. The CommuniGate Pro UC platform has a Dynamic Cluster feature that allows growth and change management occur without user impact and provides nearly unlimited scale.

Pronto! is also extensible or customizable, allowing operators to drive brand and service differentiation. Pronto! has a framework to insert "modules" that can be applications themselves which run inside Pronto!. Or the module can access external applications and services and simply present the data back to the UI. Carriers have been trying to move the center of gravity back to their own networks by changing their bargaining position and introducing their own sticky applications and drive loyalty in user portals and interfaces. Examples of this include Vodafone LIVE! (in Europe) or Sprint PCS "Vision" and Verizon Wireless "Get It Now" (in the U.S.).

By creating this extra loyalty, wireless operators hope that they will be able to increase user "stickiness" and consequently reduce churn.

CommuniGate Pronto! Benefits

Pronto! offers many advantages to both end-users and the service providers themselves, including, among others:

- ***Service Creation Environment***

  Pronto! connects to the CommuniGate Pro Internet Communications platform via the XIMSS API (XML Interface for Messaging, Scheduling, and Signaling), which allows the rapid development of lightweight clients and interfaces that can call upon web and XML capabilities or skill sets. XIMSS enables broadband and wireless operators to quickly design user interfaces, build portals, mashups and widgets interface with broadband modems, or link to external applications and services without the need to incur performance hits or use middleware or heavy protocols.

- ***Compact, Powerful and Very Efficient (50x times more compact than a desktop application)***

  Pronto's footprint is small (less than 2 MB in size), and it relies upon lightweight XML requests to the server, significantly enhancing the overall performance on the network at scale. It works with any major operating system and browser combination such as; OSX, Windows, Linux or Solaris that uses Flash 9 or higher.

- ***Appeal to SMBs and to Operators***

  Pronto! allows small and medium businesses to get the benefits of UC on a hosted basis (via an operator) without the need to undertake expensive CPE (Customer Premises Equipment) upgrades of legacy TDM PBX or KTS (Key Telephone System) infrastructure. It is also appealing to service providers since it gives them the opportunity to target the sweet spot of the enterprise marketplace (SME) which is still under-penetrated. The idea for these operators is to offer UC (along with a customized Pronto! client) in a SaaS (Software as a Service) fashion.

- ***Real-Time Collaboration***

  Pronto!'s sleek interface enables end-users to get status updates of their buddy list, allowing them to get presence and location information on the fly. Collaboration is becoming more effective with free/busy information to schedule calendar items. This could be potentially leveraged as a mobile targeted advertising application.

- ***Media Integration***

  Pronto! supports HD quality video (H.264) and Audio (AAC3) and its design allows the creation of powerful mashups with external Digital Content such as video provided by the Adobe Flash Media Server™. Applications such as video mail and VOD (Video On Demand) can be packaged to address residential subscribers, or business subscribers can be served by modules that deliver corporate HD training videos and webcasts. CommuniGate Systems has enabled an API within the Pronto! framework that allows ISVs and third party developers to implement plug-ins or other applications. This powerful feature turns Pronto! into a client side application server, leveraging the power of the network over a fast and efficient session which translates into a good user experience and higher densities at scale.

- ***Mobility***

  Pronto! also works in real-time with the Mobile access features of CommuniGate Pro such as AirSync (for the messaging, calendar, and PIM component) and CommuniGate MobiConnect - Mobile PBX services, CommuniGate Pro's Mobile Unified Communications technology that brings all the PBX features and "dial-tone" to the mobile handset.

  CommuniGate MobiConnect is a powerful, yet small and efficient application that currently links the (iPhone 3G) to the CommuniGate Pro PBX services as an

extension, just as if the iPhone were a desktop phone plugged into the corporate LAN. The application controls the CommuniGate Pro platform over the 3G or EDGE data channel, while using the regular high-quality GSM voice channel (not VoIP) for audio delivery. The application instructs the PBX to call the mobile, so calls initiated by the mobile user will actually become an inbound call to the mobile handset. When the mobile picks up, the user is presented with a dial tone, or the number he wishes to call begins to ring automatically. Calls that are coming from the mobile user (outbound) appear to the callee to be from the office line caller ID, and not the mobile number.

An Enterprise can really benefit from this powerful service, since inbound calls to the mobile are normally billed to the caller, in this case the corporate plan (wireline account). This enables the UC SaaS provider to provide a powerful mobile service and corporate telecom plan for the business uses, while the end users can still leverage their mobile handsets without usage of their personal mobile service contracts. Productivity is increased dramatically by allowing users to be connected to the PBX with the phone that is in their pocket all day long. Users can leverage having one handset, with one consolidated contact list, with no impacts to their personal identity or billing plans. Moreover, all management of calls on the PBX can be visually done on the iPhone MobiConnect application, such as call transfer without first terminating the call on the mobile, while still in the ringing state. MobiConnect also provides users with corporate audio conferencing services with drag and drop ease of use. The CommuniGate MobiConnect application is a powerful addition to the business subscriber based Unified Communications services provided by CommuniGate Pro.

- ***Extra Features***

  The Adobe AIR desktop version of Pronto! offers a host of extra benefits including higher performance HTML rendering, multi-session windows not restricted to a browser and advanced "drag & drop" from outside the application.

CONCLUSIONS

As Donald Tapscott, the influential speaker in Management Theory wrote in "Wikinomics: How Mass Collaboration Changes Everything":

"The corporation is undergoing the biggest change in a century. Due to deep changes in technology, demographics, business, the economy and the world, we are entering a new age where people participate in the economy like never before. This new participation has reached a tipping point where new forms of mass collaboration are changing how goods and services are invented, produced, marketed, and distributed on a global basis. This change does not wreck corporate profit. If understood, it presents far-reaching opportunities for every company and for every person who gets connected."

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UC is a state-of-the-art technology that will certainly stimulate increased collaboration in all enterprises by enabling users to successfully reach someone faster and more efficiently than ever before. In this discussion paper, we examined the UC market potential and the role that a SaaS UC solution such as Pronto! can play in helping ISPs and xSPs target the SME marketplace. Furthermore, the Pronto! user interface is a superior UC client for providers delivering UC in the SaaS model. Pronto!'s is extensible and customizable by a service provider while at the same time delivering value to the end-user, which can be a compelling proposition in the current UC marketplace.

In conclusion, the UC market is poised to grow at a tremendous pace, as discussed earlier, and the one segment that still remains somewhat underserved is the SME (Small and Medium Enterprise) space. A feature rich, high capacity and multi-tenant SaaS UC solution such as CommuniGate Pro and Pronto! can surely address this opportunity. Hence, Frost & Sullivan believes that by remaining committed to the development of additional Pronto! features, CommuniGate Systems can capture the necessary mindshare to be a top-echelon player in the UC SME market.

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Since joining Frost & Sullivan in February of 2001, Mr. Gruia has spoken at conferences such as Supercomm, VON, 3GSM, CTIA, IMS World Forum, IMS Expo, Futurecom (Brazil), IP Comm, Fierce IPTV, Intel Communications Summit, VON Canada, IP World Canada and Comdex Canada. He also writes articles for various publications (such as IMS Magazine, VoIP Magazine, Telecommunications Magazine and Telemanagement), has appeared on Report on Business Television (Canada) and 3GSM TV (Spain), and is often quoted in publications including Business Week, Forbes, Wired, Network World, IT Business, IT World, St. Louis Post-Dispatch, Washington Post Newsbytes, Seattle Times, The Globe And Mail, National Post and CIO Magazine.

Mr. Gruia is an MIT graduate in Electrical Engineering, and has accumulated years of experience in the telecom industry, having held several roles at Nortel Networks' Enterprise Division, where he earned a U.S. patent.

This paper is part of the ongoing coverage of worldwide information and communications technologies markets by Frost & Sullivan (www.frost.com), an international growth consulting company. Working closely with our clients, we use advanced market research methods to identify and analyze the critical market challenges they must address to become successful competitors in their industry.

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