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THE RADICATI GROUP, INC.

Unified Communications as a Software as a Service (SaaS) Opportunity

A whitepaper by The Radicati Group, Inc.

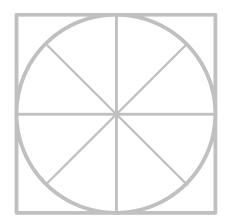


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INTRODUCTION

Unified Communications presents an exciting new business opportunity for Service Providers. It allows providers to offer new services at a premium price to both consumers and businesses, while building customer loyalty and reducing "churn". In particular, UC solutions allow Service Providers to effectively target the business SME market which overall represents a higher revenue opportunity than consumers, due to its propensity for premium, value-added features and stronger customer loyalty.

The worldwide UC as SaaS market is expected to reach 46M subscribers in 2008, and grow to 136M subscribers by 2012 (including both business and consumer customers). Revenues in this market are expected to grow from \$6.9 billion in 2008, to \$28.7 billion in 2012. Figure 1, below, summarizes this strong revenue growth.

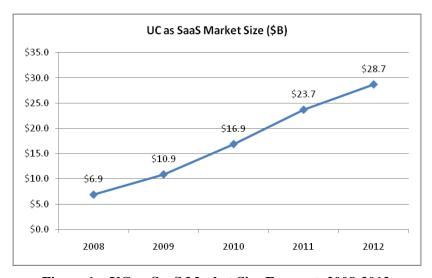


Figure 1 – UC as SaaS Market Size Forecast, 2008-2012

This paper looks at how Service Providers can best leverage the emerging market opportunity for UC delivered as SaaS. It also introduces CommuniGate Pro, a comprehensive UC solution designed specifically Service Providers. In particular, the paper discusses:

- What is Unified Communications.
- How UC as SaaS benefits SMEs.

- How Service Providers should choose the right UC platform.
- The CommuniGate Pro platform.
- A brief cost analysis.

1.0 WHAT IS UNIFIED COMMUNICATIONS

Unified Communications (UC) enables organizations to communicate quickly and more efficiently by bringing together the multitude of communication channels in use today, such as: email, voice, Instant Messaging, presence, calendar/scheduling, wireless, and video, file sharing and more, into a consolidated infrastructure that allows users to be easily located and contacted in real-time. UC also serves to make wireless devices an extension of the PBX, as well as the desktop for messaging and file access, in order to provide access from any device, anywhere in a streamlined way.

Business professionals, today, recognize the increasing overload of dealing with multiple, different channels of communications. The idea is to turn communications from chaos into a productive working experience that will allow professionals to be more responsive and efficient in their work.

With UC, employees can work more efficiently as teams. Here are some typical scenarios:

- i. <u>Collaboration</u> an individual working with a colleague on a contract proposal can begin an instant messaging conversation, then through presence information see that that colleague is available and begin a voice or video call, and finally perhaps involve one or more additional parties as the conversation progresses and there is a need to draw in expertise from other individuals. This type of situation occurs constantly in business today, and the ability to draw in all the appropriate parties quickly is essential to completing tasks efficiently.
- ii. <u>Customer Service</u> also, in a customer service situation, through the use of UC a customer service specialist can access a list of experts in real time, identify through presence information which expert is available, get an issue resolved and quickly get back to a customer. This type of efficiency is essential in many business environments, today, where customer response times are critical to retaining or securing new customers.

Unified Communications offers both individuals and organizations many important benefits, such as:

- More Effective Communications as companies extend their operations to more locations and add workers with home offices, keeping in touch with their employees can become a challenge. The need for efficient communication and accountability continues to be the number one reason behind UC adoption. To ease the task of communicating efficiently, UC solutions must integrate with corporate directories (such as LDAP or Active Directory), individual contact lists, as well as calendars and scheduling information for automatic management of each user's status and availability for calls and meetings.
- Makes it easier to Manage Multiple Devices UC solutions enable users to view all messages in a single mailbox, notwithstanding of the device or media channel they were originally sent from. Users are free to think about the content of a message, and their communication priorities, rather than worry about the type of device or application being used to send or receive it, and whether or not it will be accessible to the recipient in time. Since all data is stored centrally, any message or data can be accessed anytime from anywhere, even while traveling, irrespective of the device being used.
- *Improve competitiveness* being able to communicate effectively and in time, can make the difference between success or failure. Ensuring that employees can get back to customers quickly, can exchange information with partners effectively, and have all data accessible from anywhere at anytime can provide a real differentiation in today's business world.
- Integration with Business Processes As more UC solutions offer integration with important corporate applications, such as CRM, ERP and many others, users can quickly gain access to databases via their UC interface, or mash-ups, enabling them to provide better customer service, finish projects on time, and gain critical insights into their work.
- Adoption of Related Technologies UC also allows companies to harness the benefits of many new, emerging communication technologies, such as:
 - Presence Presence information allows users to initiate communications in their preferred way, and provides employees with a tool to better manage their work

- day based on calendar events or other inputs such as phone activity or IM session activity.
- VoIP offers great cost savings on calls, and is an integral part of any UC deployment.
- O WiFi Convergence a convergence of VoIP and WiFi, provides seamless connectivity of mobile devices to the VoIP network. It enables richer and more interactive UC communications among users with lower costs by leveraging the home, office, or roaming WiFi networks.
- o *SIP* the integration of SIP enables UC vendors to provide high-quality multimedia user experiences for voice, video, chat, and other forms of communications that are interoperable. SIP has become the standard for devices like IP Phones, CPE equipment, and software, both client and server. Like email, UC technologies must be compatible with a wide range of vendors to insure ubiquitous usage across the marketplace.
- o Instant Messaging with XMPP an open standards technology that removes barriers between isolated networks, and allows interoperability, much in the same way email broke down the barriers of closed messaging systems such as AOL, Compuserv and others. XMPP, today, is supported by many public networks including GoogleTalk, and Yahoo!. Client support for XMPP ranges from open projects like Pandion, Jabber, and Trillian to corporate solutions like those from Apple (iChat) and CommuniGate Pro.
- 3G provides higher bandwidth for application requirements, and offers quick information transfer and advanced services for UC suites. In the future, 4G is expected to expand upon these benefits, offering even higher bandwidth, portability and worldwide roaming.
- PC to Mobile SMS (also called "land line SMS") Allows users to send SMS
 messages to mobile devices from the desktop. The solution typically just routes
 the specially formatted message (in SMS format) to the SMSC or a service such

as Clickatell. This is a very powerful tool for sending alerts, or notices about missed calls.

- Mobile access to the PBX Full business class services like call transfer, conferencing and "dial tone" access from the PBX to mobile devices.
- Mobile Push real-time OTA (Over The Air) synchronization services for messaging, calendar information, contacts, and shared folders.

2.0 UC AS SAAS BENEFITS FOR SMES

Up until recently, Unified Communications was available only at a hefty price tag, mostly to very large companies willing to uproot their existing infrastructures, and invest heavily in new products, services, and IT resources in order to implement a UC solution. So while the benefits of UC have been in demand by businesses for a while, the price tag associated with the deployment of a UC solution has often been out reach of most, except a few larger companies.

Fortunately this is changing rapidly, thanks to lowering broadband connectivity costs, which make Software as a Service (SaaS) offerings accessible to businesses of all sizes. SaaS offerings bring even the most sophisticated technologies within the reach of small and medium businesses at an affordable price.

Software as a Service (SaaS), is increasingly presenting an attractive way for companies of all sizes to reduce costs and simplify administration, while deploying new technologies at a fraction of the cost of in-house deployment.

With SaaS, businesses no longer have to manage and maintain their own solutions in house. This frees up company resources, enabling businesses to focus on their core operations. Some of the many benefits of SaaS include:

- *Smaller onsite IT staffs* hosted solutions avoid the hassles associated with setting up, running, managing, and maintaining an on-premises solution.
- Lower implementation costs due to lower expenses for initial design, planning and set up, as well as lower licensing fees and not having to deal with hardware compatibility issues.

- Access to the most up-to-date technology hosted solutions provide a seamless upgrade
 path to the latest versions, and technology without the added costs, while with onpremises solutions businesses have to continually incur the costs of staying current with
 the latest product releases.
- Predictable costs hosted solutions charge on a user/month basis, which allows
 businesses to accurately budget their costs on an annual basis, and plan their investments
 accordingly.
- Flexibility Hosted solutions can offer modular services for groups of employees e.g. mobility to the sales and executive teams, or simple messaging for logistics staff, this cuts down costs by allowing SMEs to pay only for the services they use, while providing them with the flexibly to easily sign-on and off different services.
- Stronger solutions for smaller businesses thanks to a hosted solution, smaller businesses can typically afford to access a much more technologically advanced solution than what they would normally be able to afford to run on-premises.

3.0 CHOOSING THE RIGHT UC PLATFORM

While UC as SaaS, undoubtedly represents an excellent new opportunity for Service Providers, choosing the right UC platform makes the difference between success and failure. There are many vendors currently on the market touting their UC solutions, however, what they offer is often radically very different and can be seriously deficient in terms of functionality, or cost excessively to meet the profit margin requirements of commercial ISP deployment.

For instance, white label solutions (such as Google Apps, Microsoft Live, and Yahoo) represent a quick way for Service Providers to offer a UC service to their customers, however the downsides of this approach can include (just to name a few):

- Loss of subscriber account information to the white label provider,
- Lack of control over the quality of the service,
- Most of these vendors offer their own SaaS solution like MS Live and Google Apps, that will directly compete with the services offered by the provider using the white label.

More troubling is that these companies can drop prices radically to seek market share directly resulting in churning the providers subscribers,

- Exposure to sudden changes in product direction, or pricing models on the part of the white label provider.
- Loss of subscriber loyalty or "stickiness" to the Network Operator, as users can move to another competitive provider for "network access products" such as ADSL, or Cable when rates dip in the market.

On the other hand, popular hosting platforms, such as Microsoft Exchange Server 2007, which lacks native voice and telephony components, requires a great deal of customization and careful integration with a long list of components in order to assemble a true, working UC solution.

While certainly all of the necessary components can be assembled into a UC solution, the costs of integration and the length of the design, installation and deployment process are such that Service Provider margins can be quickly eroded. In addition, small changes in functionality or feature set can represent major new design projects. More importantly, the on-going administration effort which requires management of a complex system assembled through components from multiple vendors becomes a major time and financial drain.

Therefore, it is important for Service Providers to focus on identifying the right platform supplier from the start, preferably one that offers a fully integrated platform designed from the ground up to be a UC platform for Service Provider use. Only by choosing the right platform on which to build value added UC services, Service Providers can ensure high margins and position their businesses effectively for future growth.

Some of the key considerations Service Providers need to focus on when selecting a UC platform supplier include:

- Choose a high-density platform needless to say the higher the capacity and scalability of the platform the greater the revenue generation potential it offers. Service Providers need to plan for growth, and look for platform solutions that scale easily without a major upheaval of their existing infrastructures (e.g. billing, provisioning, etc).
- Choose a multi-tenancy solution multi-tenancy is key in ensuring strong economies of scale through the use of a reliable, shared platform, while allowing providers to pass some of their cost savings on to customers. Multi-tenancy platforms are normally designed quite differently from on premise-based "Enterprise Class" solutions. The

platform needs to be able to "virtualize" individual "hosted enterprises", while providing a single system image to ensure management of systems that could have thousands of "virtualized" instances running.

- Reliability clearly a platform's reliability must be of primary concern since the Service Provider takes on all uptime responsibilities through Service Level Agreements (SLAs). "Change Management" of a large UC solution must have the capability to conduct updates or service the system while "Hot", through methods like moving services to another "Virtual" location, or cluster so users are never brought "off-line".
- Modular Class of Services A platform that allows services to be put into templates of "groups of services" so users or companies can be moved up or down in "service classification" as defined by these groups. This is a fundamental feature of a system designed for large scale hosting. The Class of Services component enables the Service Provider to upsell packages of services to the customers in the system. The solution should be capable of being switched on and off through APIs that integrate with provisioning systems and allow easy and fast administration from a single interface.
- Integration with existing billing and provisioning systems all Service Providers have significant investments in existing billing and provisioning systems. A platform that integrates well from day one with existing solutions with a solid set of APIs such as Parlay X, Diameter (AAA), and Radius offers the best opportunity for low upfront capital investments.
- Fast go-to-market time in a highly competitive industry it is essential for Service Providers to partner with a platform supplier that can offer fast go-to-market time, and also provide seamless upgrades and new components as market needs evolve.
- Future-ready An integrated platform that is able to handle the requirements of tomorrow with the ability to easily snap-in new feature modules, and help to differentiate from competitors in branding and feature sets. The platform should have a development environment for new applications on the server and desktop, such as widgets giving the provider a way to produce unique applications without vendor lock-in.

- Web 2.0 delivered especially for mobile users and small companies, having the
 flexibility to access UC services by a Rich Internet Application (RIA) is a huge
 productivity gain. Providers gain significant advantages using Web 2.0 clients due to the
 fast turn around time, and low overhead compared to maintaining software that must
 install on the user's computer.
- Cross platform support The market growth of the Apple Mac, as well as Linux desktops in markets like transportation, manufacturing and education dictates that a UC solution should not lock the Service Provider into a single market segment.
- Mobile access With the move from "cellphone" to "mobile Internet devices", partially
 driven recently by the advent of the iPhone, UC solutions must be mobile.
- Video delivery for integration to VOD/IPTV solutions offered by providers this means that is the system should adapt to heavily invested triple play solutions, such as display of information on TV (e.g. "you have new email") or playing IPTV content or video on the user's computer when away from the home TV. In the corporate world this means access to services like training videos, or other media broadcasts.

4.0 COMMUNIGATE PRO UNIFIED COMMUNICATIONS PLATFORM

CommuniGate Systems offers a comprehensive unified communications suite, **CommuniGate Pro**, which includes messaging, calendaring, mobility, instant messaging, presence services,
Rich Media Delivery, and VoIP. CommuniGate Pro is a unified communications platform that
provides feature-rich messaging and collaboration, directory services, address book management,
mailing lists, administrative management, and more. The platform supports multiple operating
systems, including Microsoft Windows, UNIX, Apple OSX, and Linux, as well as
synchronization with MAPI and POP3/IMAP4 clients, such as Microsoft Outlook, Microsoft
Entourage, Mozilla Thunderbird, and Apple (Tiger) Mail, to effectively share calendars,
contacts, and folders. The VoIP suite ships with a virtualized IP PBX that is fully scalable for
multi-tenant hosting, allowing businesses to streamline all their communications into
CommuniGate Pro.

Besides desktop clients and Webmail access, CommuniGate Pro provides an Adobe Flash-based Web 2.0 UC client called **Pronto!**, which provides dynamic desktop-like control and

customizability—much like AJAX and DHTML. Beyond its unique Web 2.0 client, CommuniGate Pro's instant messaging and presence services can interoperate with third-party IM platforms, such as Microsoft Office Communications Server (OCS), Jabber (XMPP) based servers and services like gTalk, and client technology such as Trillian, Pandion, and any other SIP/SIMPLE or XMPP clients (Jabber) like Apple iChat. In terms of wireless messaging support, CommuniGate Pro uses P-IMAP and the OTA (Over The Air) ActiveSync (AirSync) to natively support all Microsoft Windows Mobile 5/6 + devices, as well as a multitude of Smartphones like Nokia, HTC, Samsung and the iPhone 3G. CommuniGate MobiConnect (i.e. a new Mobile PBX application) brings the dial tone to mobile handsets and business class PBX services like call transfer and conferencing.

In addition, the solution offers advanced perimeter security and Session Border Controller features via CommuniGate Pro's **EdgeGate Controller**, as well as third-party plug-ins for antivirus (e.g. Kaspersky Labs, McAfee, Sophos), anti-spam (e.g. Mailshell, Cloudmark), and archiving.

CommuniGate Pro key differentiators include:

<u>Density</u> - CommuniGate Pro was designed to be a high-density platform. One of the
challenges of deployment of a large scale UC solution for hosting providers is power
management, and equipment expenses. Through the use of virtualization, a single system
image, and high density per server, many of these issues can be mitigated.

CommuniGate Pro has a unique architecture, providing all services from one platform that is Dynamically Clustered. The clustering technology is an all active architecture which allows nodes to be added or removed while the system is hot, and provides administration though a single system image. Thanks to this architectural concept, CommuniGate Pro requires less hardware, and less administration.

In comparison to competitive offerings, a much smaller set of components are required. A typical Dynamic Cluster environment capable of hosting thousands of companies with an aggregate of millions of users, for instance, would require only the following product components:

- SAN or NAS Storage, Shared File System / Backend Servers with CommuniGate Pro.
- o Frontend Servers with CommuniGate Pro,
- Load Balancer/s,
- o PSTN Gateway/s,
- o Routing Infrastructure,
- Desktop phones (Polycom or other).
- <u>Class of Service Provisioning</u> The CommuniGate Pro UC platform has a powerful COS feature set that enables the provider to develop templates or packages of services based upon feature sets. Packages can be anything, but as an example, a provider can offer messaging, VoIP, or Mobility as separate offerings, and provide trials of new or additional features to convince customers to upgrade to another premium level.
- <u>Multi Tenancy</u> Due to the density of CommuniGate Pro and the integrated all-in-one software platform, one server can power thousands of multi-domains and host several thousands of users. Each domain or company can have a separate user base, and administration UI. However, users in one domain can share folders with other domains, so partner companies, or subsidiaries can leverage the power of CommuniGate Pro's Access Control Lists ACL management sub-system.
- <u>Reliability</u> CommuniGate Pro is known for its dial tone quality and 99.999% uptime through its unique Dynamic Clustering. CommuniGate Pro has proven its reliability in benchmarks with HP and IBM (10 and 25 million voice users). In addition, vendor-independent CT Labs using the Empirix Hammer load system proofed that in a small two server system with 1,000,000 users not a single call was dropped with 220,000 sessions activated.
- <u>Administration and Integration Feature Set</u> CommuniGate Pro allows easy administration via a secure web UI and delegated granular rules for remote administration. CommuniGate Pro has a rich set of APIs for integration into BSS/OSS or provisioning and monitoring technologies. These include: CLI API, Perl API, JAVA API, SOAP API, Parlay X, Radius, CDR Engine, and XML API (XIMSS).

- <u>CommuniGate Pro is a platform</u> unlike many enterprise class solutions, the CommuniGate platform has a full development language CG/PL for extensibility and creation of new applications. CommuniGate Systems created the XIMSS (XML Interface to Messaging, Scheduling, and Signaling) module which implements an open XML based protocol that web developers can quickly leverage for client side applications and external services. This protocol supports advanced RIA's (Rich Internet Applications) allowing them to access all server functions and applications in a secure and effective way. The CommuniGate Pro XIMSS module supports both *clear text* and *secure (SSL/TLS)* connections. The programming environment allowing network operators to provide new VAS (Value Added Services) solutions like a pre-paid calling applications, or integration into external data or application sources.
- <u>Wide range of Platform support</u> CommuniGate Pro runs on all major Unix / Linux operating systems like Solaris, AIX, HPUX, Linux, and BSD. For enterprise class onpremises deployments the solution can also run on Windows and OSX. CommuniGate Pro is one of the few UC solutions on the market today which offers such a wide choice of platforms. Client support also is rich, ranging from Mac, Linux, and Windows to Mobile devices like the iPhone, Nokia, and Windows mobile.
- User side Functionality The web 2.0 UC client, Pronto!, is one client with single sign-in for all UC applications including voice, VideoMail, presence, IM and calendaring. Due to a strong partnership with Adobe, CommuniGate Systems was able to deliver one of the first applications for Adobe AIR which is implemented in the "Pronto! on AIR" version for the desktop. Pronto! can be customized, branded, and extended to include new modules through the Pronto! modules SDK. Network providers will like the fact that Pronto! is modular for Class of Service provisioning and can integrate with advertising engines. Pronto!, using Flash 9 or higher, can deliver H.264 HD quality video for integration with IPTV/VOD solutions making the UC client a powerful delivery framework for mobile users wanting to access content when they are away from the home TV. In cooperation with CommuniGate Systems operators can create Mashups with widgets for any of the UC applications allowing integration to portals or corporate intranets and external services. Any design is possible in Ajax or Flash. CommuniGate Pro also ships with customizable webmail providing different skins to choose from with support for over 19 languages.

• <u>Freedom of client choice</u> - As CommuniGate Pro is standards based users can select which client to use; for instance, messaging and groupware clients like Outlook, Thunderbird, or Apple Mail and iCAL, and many others. CommuniGate Pro supports a wide range of IM clients for SIP/SIMPLE and XMPP, such as Windows Messenger 5.1, Apple iChat, Trillion, Pandion, and can link into services like GoogleTalk. CommuniGate Pro provides support for all leading SIP based IP Phones, such as: Polycom, Cisco, Thomson and Snom.

Table 1, below, summarizes how CommuniGate Pro compares against the key platform selection criteria outlined earlier in section 3.0.

Key Considerations in choosing a UC Platform	CommuniGate Pro
High-Density	Yes
Multi-tenancy	Yes
Reliability	Yes
Modular Class of Service	Yes
Integration with existing billing and provisioning systems	Yes
Fast go to market	Yes
Web 2.0 support	Yes
Cross-platform support	Yes
Mobile Access	Yes

Table 1- CommuniGate Pro Feature Set Summary

5.0 A BRIEF COST ANALYSIS

This section provides a brief comparison of the cost components associated with deploying Microsoft Exchange Server 2007 and supporting products like Office Communications Server as a UC SaaS solution vs. deploying CommuniGate Pro.

In the case of a Microsoft Unified Communications plan, the following product components would be required, at a minimum, to implement a UC solution:

- *Hardware* this would involve:
 - o Servers (Microsoft Exchange Server 2007 requires new 64bit systems),
 - o Storage,
 - o PSTN Gateways,
 - o Switching equipment,
 - o Nortel IP Phones (or other similar Voice-over-IP equipment).
- *Software* this would involve:
 - o Windows OS 64bit,
 - Microsoft SQL Server,
 - o Microsoft Active Directory,
 - o Microsoft IIS Web server,
 - o Microsoft Exchange Server 2007,
 - o Microsoft Office Premium with Outlook 2007 & Communicator,
 - o Microsoft OCS 2007,
 - o Nortel VoIP/PBX (or other similar VoIP/PBX equipment).

In the case of CommuniGate Pro, the list of components to be assembled is much shorter as so much of the functionality is already part of the standard platform. The list would look as follows:

- *Hardware* this involves:
 - o Servers,
 - o Storage,
 - o PSTN Gateways,
 - Switching equipment.
 - o Optional SIP phones such as Polycom, Thomson, SNOM, Cisco
- *Software* would require:
 - o Operating system (choice of Solaris, Linux, BSD, AIX, HPUX),
 - o CommuniGate Pro Unified Communications server
 - Includes Pronto! UC client with Flash based VoIP softphone,
 - Includes Mobile access.

Table 2, below gives a brief side by side comparison of the different requirements for Microsoft Exchange Server 2007 and CommuniGate Pro.

Cost Component	Microsoft Unified Communications	CommuniGate Pro
Hardware	Servers	Servers
	Storage	Storage
	PSTN Gateways	PSTN Gateways
	Switching Equipment	Switching Equipment
	Softphone	Included (Pronto!)
Software	Windows OS	Operating System (can be any of Solaris, Linux, BSD,AIX, or HPUX)
	Microsoft SQL Server	n/a
	Microsoft Active Directory	n/a
	Microsoft IIS Web Server	n/a
	Microsoft Exchange Server 2007	CommuniGate Pro Unified Communications Server, includes full business class messaging, shared folders and calendaring
	Microsoft Office Premium with Outlook 2007 & Communicator	n/a
	Microsoft OCS 2007	n/a
	VoIP PBX	included

Table 2 – Microsoft Unified Communications vs. CommuniGate Pro

6.0 CONCLUSIONS

CommuniGate Pro was designed from the ground up to be a UC as SaaS platform. This makes it a very desirable choice for Service Providers of all sizes, as it can easily expand to support a broad range of subscribers. More importantly, CommuniGate Pro comes with all the key features a hosting supplier needs, such as: high-density, multi-tenancy, reliability, APIs for easy integration into existing applications, and a flexible easy to customize Adobe Flash-based Web 2.0 client.

UC as a SaaS represents an exciting new opportunity for Service Providers, as it offers an exciting new value-added offering that can attract both consumer and business customers, build stronger ARPU and increase customer loyalty. We believe that the hosting providers who enter the market first with UC SaaS solutions will also be the ones to more effectively build a strong customer base and position themselves as leaders in this fast-growing industry space.

It is important, however, that Service Providers partner with the right platform supplier from the start when selecting a UC solution, as the right platform will make the difference between building a strong revenue business, or merely meeting customer demand.

In addition to its platform technology, CommuniGate Systems also offers Service Providers its extensive expertise in developing business services. This ranges from expertise in developing new VAS applications, to training of the Service Provider's personnel, to working with the provider to devise effective new marketing and advertising campaigns. This makes CommuniGate Systems an ideal partner for Service Providers looking to bring new services to market.