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Case Study Series – Uniphore Software Systems

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About Villgro

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In the second quarter of 2012, four years after launching their start-up company Uniphore Software Systems, co-founders Umesh Sachdev and Ravi Saraogi felt optimistic. They had formed the Chennai-based technology company in 2008 to help businesses reach across language and geographic barriers, and target new customers.

Uniphore’s core competence was in speech-enabled applications for mobile phones. Through its speech recognition and voice biometrics technology, Uniphore was enabling secure access to mobile content and services for underserved populations, particularly rural India’s semi-literate and illiterate people. The company offered multilingual, customized solutions to its customers, which are businesses across five industries – agriculture, banking, education, healthcare and retail. The Uniphore concept was working: its applications were reaching two million end-users. The company has reported profits since 2010, and is still growing. Additional external investment, though, would accelerate this rate of growth exponentially.

Speech technology was beginning to catch the attention of Indian businesses, and to maintain its technological and service advantages, Uniphore required long-term investment in areas such as R&D, human resources and marketing. To ensure that Uniphore continued its positive growth path, Sachdev and Saraogi were actively seeking funding. But a few questions lingered in their minds: Would new investors recognize and appreciate the value of Uniphore and its singular vision? What was the best way to build the Uniphore brand and educate potential customers around speech-based mobility solutions? In mid-2012, they were not sure about the answers, but they were determined to find the best path forward to become pioneers in the fast-growing industry of enterprise mobility.

The Enterprise Mobility Industry

According to the Telecom Regulatory Authority of India (TRAI), India’s mobile subscriber base stood at 903.72 million connections in January 2012.\(^1\) Consumer awareness of the value of mobile technology has triggered a digital revolution whereby myriad new applications are available that can turn a mobile phone into an entertainment center as well as a complementary workstation. According to global research firm Gartner, mobile penetration in India is currently at 51% and growing rapidly, likely to cross 71% by 2016.\(^2\) Though TRAI and Gartner report different statistics, they are in agreement that the depth of India’s mobile penetration is rapidly expanding, and therefore, has important implications for the private sector.

For businesses, mobile technologies have been a game-changer for operations and, ultimately, the bottom line. As employees have increased access to devices like smartphones and tablets,

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\(^{2}\) Ibid.
organizations have learned to incorporate these technologies into the evolving business landscape. The result has been the automation of business that drives efficiency, a concept known as ‘enterprise mobility.’ Mobile technologies have enabled the provision of value-added services that, for example, allow an organization to standardize and automate internal processes or to capture business insights in real-time. Industries leading demand for enterprise mobility solutions include banking, healthcare, hospitality, manufacturing and retail.

India’s enterprise mobility industry is relatively young. Interest in the industry is recent, and media and scholarship are only just emerging on the subject. Since 2009, India’s enterprise mobility industry has grown significantly and is expected to continue this upward trend until 2015. The enterprise voice industry in India is currently valued at US$ 24 billion. Speaking about the general enterprise mobility industry, Praveen Bhadada, Director of Global Consulting at Zinnov Management Consulting, states: “Enterprise mobility in India certainly has a billion dollar potential in the next five years. We will see over 40% [year-on-year] growth for the segment over the next five years.”

Industry growth has been attributed to key factors such as innovation, entrepreneurial activity, stronger mobile device penetration and greater adoption of mobile platforms. Nearly 24% of digital start-ups in India are in the mobility space. By 2015, it is projected that the country will have over 100 million active mobile Internet users, according to a study entitled “The Enterprise Mobility Study: Indian Market Analysis” by Zinnov Management Consulting.

Despite India’s high mobile penetration, the advantages of enterprise mobility do not reach every person with a mobile phone. The most important challenge faced by the industry is the usability of mobile applications. In order to use enterprise mobility, users must incur an additional cost of such services. There are two costs to bear: the cost of the “smart” device itself, which can range from INR 2,500 (US$ 50) to INR 50,000 (US$ 1,000), and the cost of service access. For the average mobile phone user in India, these costs may be prohibitively high. Most mobile phone users primarily use their phone to make or receive phone calls and text messages: India has more traditional mobile users than smartphone users; smartphone penetration in India is under 20%. Relatively low penetration of smartphones in the Indian market means that there is low usage of GPRS applications. Another facet of usability is the issue of unintuitive applications that are not easy or convenient to use.

In a heterogeneous country like India, though, usability has a more basic, overarching dimension regarding language. The Indian Constitution recognizes 22 official languages in the country, but it is reported that, in actuality, there are nearly 400 languages and over 600 dialects. Most mobility applications, however, assume a working knowledge and competency in

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3 Uniphore Software Systems. “Uniphore: Speech-Based Mobility Solutions on the Cloud.”
5 Ibid.
6 Uniphore Software Systems. “Uniphore: Speech-Based Mobility Solutions on the Cloud.”
either English or Hindi. With approximately 40% of Indians being illiterate and many more semi-literate, as well as only 4% of the population being English-literate, access to mobile content and services are out of reach for the majority.

**Speech-Based Mobility Solutions**

Although people talk and interact with their mobile phones, mobile awareness is focused on text-based applications. This is in large part due to the fact that most Indians own a basic mobile phone. The average consumer knows the basic functions that her phone can accomplish, but she may not be aware of the possibilities beyond sending and receiving phone calls and text messages. She also may not know that speech technology exists and can enhance the mobile experience.

Most mobile applications are predicated upon a text- and visually-based experience. When a person uses such an application, she has to look at her phone screen and, as needed, work with the mobile keypad. Few applications today optimize the use of speech technology, or voice recognition, for interaction. This is a sphere of technology that may seem most popular and suitable for disabled persons, but there is greater potential for speech-based solutions beyond this niche market. Businesses have only recently recognized the scope for speech technology as a complement to other mobility solutions they already employ. Recent examples are automated telephone support offered by service-oriented companies (e.g. speaking a credit card number versus dialing it) or, more specifically, Apple Inc.’s integration of the Speech interpretation and recognition interface (“Siri”) in its 2011 iPhone models.

Speech technology depends on interaction with a mobile user, thereby making speech recognition essential. Different speech speeds and patterns have to be embedded in the technology for recognition and resulting processes to be accurate. Various speech recognition systems have existed since the 1940s, but continuous speech technology, or recognizing “natural” speech without pauses, has existed for over 20 years. Its early iterations were unsophisticated, especially in India where there are many languages, dialects and accents that need to be recognized for the technology to be useful. Although it is still a work-in-progress, speech technology is far more advanced today with stronger recognition capabilities. For example, one facet of speech technology is voice biometrics or vocal print. Voice biometrics is identification of a person by measuring her unique biological vocal characteristics against unknown voice samples. This identification technology is being employed today to literally open doors: an authorized person’s voice is verified by a security system that thereby unlocks a door.

At present, most demand for speech-based mobility solutions comes from businesses. There is a clear and evident linkage between streamlining businesses and employing mobility applications to enable and enhance efficiency. As the IT sector has grown in the last two decades, companies are savvy about the role of technology and how, for example, it can “...increase collaboration and productivity, provide real-time insights into enterprise data,
accelerate decision-making, and enhance customer relations.”\(^7\) It is a financial and effort-driven investment to incorporate such solutions into existing infrastructure and processes. It is for this reason that most enterprise mobility businesses adopt the B2B model.

On the other hand, individual consumer demand for speech-based solutions is more of a niche market: consumers currently remain ignorant of the value of speech-based technologies. Despite the fact that the first applications developed by speech businesses followed a B2C model, the everyday consumer may not be aware of the benefits of speech-based technology in daily life, and is therefore not yet asking for it. Limited supply or competition translates into higher prices for value-added services. Also, since the purchase of mobile applications occurs online or over a mobile network, consumers may be reluctant to pay for anything online using a credit card due to potentially unsecure electronic transactions. A final consideration regarding consumer demand is usability issues. Applications may be inaccessible to the individual consumer due to a language barrier, no access to a smart device or unfriendly application interfaces.

**Industry Challenges**

Arguably, speech-based mobility solutions may have the most untapped potential of enterprise mobility solutions on the market today. For speech technology and complementary solutions to make more headway in the market, the industry must overcome the challenges that come with lack of awareness and comfort levels.

Though speech technology has existed for more than 60 years, it was still primitive until about five years ago. The technology’s ability to distinguish between accents, for instance, was severely limited. From the technology standpoint, a company must collect thousands of voice samples to support a robust speech recognition platform. Any speech-based technology needs to account for variations in accent and pronunciation; a high-level of understanding and interpretation is required. For this reason, it has taken many years to fine-tune speech technology to make it more adaptable and efficient. Take the example of Nuance Communications, who provides part of the technology behind the aforementioned Siri: the company went public in 1992, but it took the company more than 20 years to polish its R&D and design what today is considered a groundbreaking technology for Apple’s iPhone.

CTOs and other highly placed technology officers who are in charge of their respective company’s technological platforms would have long been aware of speech technology. However, because of the past inefficiency of the technology, these leaders would likely have had a bad experience that marred their impression of speech technology’s potential as part of their business model. Enterprises providing speech-based mobility solutions, then, face the challenge of re-educating its target customers on the technology’s merits and undo the damage of their previous negative experiences.

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\(^7\) “Accenture Mobility in India is leading the way.” *Accenture*. 
Adopting a mobile technology into a company can be a time-consuming and capital-intensive process as the enterprise learns to replace pen-and-paper processes with mobile phones. Depending on the needs and usage of the speech technology, it needs to be customized for each user organization, and each organization would then require training on how to use it. It requires an upfront investment, as well as an ongoing one to update and maintain the technology, as needed. And most importantly for decision-makers within organizations, for speech-based mobility solutions to gain further ground as a viable technology across businesses, it must first be clear how such a solution will impact the bottom-line.

**The Competitive Landscape**

The most successful providers of general enterprise mobility solutions in India are international giants like Oracle-Siebel, SAP AG and Astea International. Offerings of companies like these, though, may not necessarily fit into the budgets of India’s small and medium-sized enterprises (SMEs), which make up the vast majority of India’s business landscape and who cannot afford to spend more than an average INR 100 (US$ 2) per employee.⁸

Speech-based mobility solutions exist as a nascent subset of enterprise mobility, and as such, the competitive landscape is yet to be mapped. Currently, enterprise mobility players in general would be the major competitors to those focusing on speech-based mobility solutions. An example of a major enterprise mobility player is SAP⁹, the Germany-headquartered software multinational corporation that develops business operations and customer service-related tools. It offers a variety of customizable technology solutions – including robust analytics, cloud, database and mobile business practices – for companies, irrespective of size, and in diverse industries.

There are other players in the voice space, whom Uniphore sees more as potential partners than competitors. The closest technological purveyor of speech-based mobility solutions in India presently comes from cloud telephony, or automated telephone applications that can be accessed from any phone. Cloud telephony offers businesses an alternative to traditional phone systems that are location-bound. These solutions lower operating costs, and are quick and easy to use for businesses of any size. An example of a cloud telephony solution is the virtual call center. A business can set-up a phone number which will be answered by a customer service agent on her own phone from anywhere or customers can be automatically called to confirm product or service details. Companies such as Exotel, Knowlarity, KooKoo Telephony and Plivo are providers of cloud telephony solutions in India. The extent of each company’s market share is unknown.

- Bangalore-based **Exotel**¹⁰ offers cloud business phone systems to India’s SMEs. The start-up seeks to help SMEs manage customers on incoming phone calls and text

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⁸ Ibid.
¹⁰ Exotel: [http://exotel.in/](http://exotel.in/)
messages without setting up a physical call center or having to deal with the constraints of having only one phone number. Exotel has built a secure virtual business phone system that has helpful features like extensions, voicemail, conference calls and a SMS keyword responder, among others. Currently, Exotel reports that a variety of small businesses have already adopted its phone system.

- **Knowlarity**\(^{11}\), in Gurgaon, has developed an extensive cloud telephony platform that is simple and useful for India’s SMEs. The platform known as “Knowlus” was developed in-house using open source technologies. Its products include: the phone answering service SuperReceptionist, Internet-based fax service Superfax, cloud-hosted conference call application SuperConference, interactive voice response (IVR) solution SuperCaller, and an instant group communication tool called Phone All. Since its start in 2009, Knowlarity has grown from a small start-up based in a garage to a 100+ person company reporting multi-crore revenues.

- From Hyderabad, **KooKoo Telephony**\(^{12}\) is an interface that allows users to customize and build IVR telecom applications, office private branch exchange (PBX) and outbound campaigns. The interface can be integrated with any existing web application with just few lines of code. KooKoo describes itself as “a web page [that] is accessible from the phone rather than the browser”: it takes phone commands from a user and executes them. KooKoo is free for trial usage, and after the trial, businesses pay only for their usage.

- With operations in India and the U.S., **Plivo**\(^{13}\) developed an open source framework that creates voice-based applications that can make or receive calls from any phone, Skype and Google Talk (Gtalk). It allows developers to integrate telecommunications features, including voice calling or text messaging, to their applications. Developers are thereby able to have their applications interact with phone systems by using programming languages they are already familiar with.

Cloud telephony solutions function as clear add-ons to existing applications to boost the interactivity of company-customer relationships. They complement already installed services by automating processes, as well as adding voice recognition to the service experience. These solutions improve efficiency and cut overhead costs, and some may even allow for customization so that a business can tailor these applications to its needs. Though these solutions improve access to information and services, they do not enable access. These solutions have broken the initial barriers of what speech technology has to offer, but have yet to take it to the next level.

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\(^{11}\) Knowlarity: http://www.knowlarity.com/
\(^{12}\) KooKoo Telephony: http://www.kookoo.in/
\(^{13}\) Plivo: https://www.plivo.com/
Uniphore Software Systems

The Founders

Umesh Sachdev and Ravi Saraogi met as undergraduate students at Jaypee University of Information Technology in Himachal Pradesh. They complemented each other well: with Sachdev’s strong understanding of business strategy and Saraogi’s operational expertise, as well as their shared ambition of developing technology solutions for telecommunications, they were a natural pairing.

Sachdev is the CEO of Uniphore. He has extensive experience in business relations. At Uniphore, he serves as a liaison between global companies and technology businesses. He has led the design and implementation of several technologies such as a theft security product, an application for the visually impaired and a voice-based platform. He has co-authored papers and developed patent applications on speech recognition and speech biometrics. In 2009, the Ministry of Science and Technology’s Technopreneur Promotion Program named Sachdev an innovative entrepreneur.

Saraogi is the COO of Uniphore. His career has spanned technology operations, including evaluating, recommending, testing and installing new technologies. He has lead initiatives on mobile security, wireless network development and mobile learning applications. At Uniphore, he manages daily operations, as well as material and human resource planning. Saraogi is an active member of the Mobile Payment Forum of India, where he identifies and develops business opportunities in the field of mobile payments.

The Innovation Journey

Even though India’s significantly large illiterate and semi-literate population has access to basic mobile phones, they are not be able to take full advantage of available electronic content and services. Uniphore Software Systems co-founders Ravi Saraogi and Umesh Sachdev knew they wanted to work in the mobile technology space and reach the rural masses. After months of research, they discovered that people would like to use their mobile phones in the same way that they use the Internet: to access information and services easily, and have their questions answered, in their own language.
In 2006, Sachdev and Saraogi launched their first start-up called Singularis Technologies, the idea of which emerged out of an academic competition they participated in. At the time, they believed that a gap in the telecommunications industry was lost phones. They therefore developed a tracking device for phones that enabled a user to find, or track, her lost phone. Although Singularis gained some traction, the business did not take off because of restrictive government regulation.

To learn more about the industry and its needs, the co-founders met with numerous stakeholders, including Professor Ashok Jhunjhunwala from the Indian Institute of Technology in Madras (IIT-M), now Chennai, who sits on the board of many well-known Indian corporations. He agreed to mentor Sachdev and Saraogi as long as they agreed to be a part of his business incubator at IIT-M, the Rural Technology and Business Incubator (RTBI). They agreed, and it is while working with RTBI that Sachdev and Saraogi understood an issue much larger than lost phones: the issue of access to mobile-enabled information and services, especially for illiterate and semi-literate Indians. The market opportunity was ripe as well with the country’s mobile penetration being high, more businesses enabling access to content and services via mobile devices, and businesses embracing mobility solutions as part of their operational models. In 2008, the co-founders launched their second start-up, Uniphore Software Systems.

“We spent a lot of time understanding what would make mobility work in the Indian market,” says Sachdev. “Out of this came the hypothesis and focus of Uniphore.” Sachdev and Saraogi learned that people with basic mobile phones were excluded from having access to a majority of applications requiring greater literacy or more sophisticated phone technology. They realized what the missing link was in the telecommunications scheme: how a voice-based application could work on any kind of phone and allow companies to interact with customers 24/7 in any language. Therefore, it seemed obvious to add a voice component to mobility applications to allow businesses to reach a wider audience using mobile technology.

Sachdev and Saraogi settled on creating mobile value-added service (VAS) applications using vernacular speech recognition and voice biometrics. They had the technology, but wanted to take it to the next level: how could they make it more accessible for someone like a farmer? The desire to reach the rural masses added another dimension to their business model. While there were many organizations that sought to meet the same end, they adopted different means. Sachdev explains: “Few peers in the enterprise mobility space focus on the rural hinterland. There is competition from other sources, but Uniphore takes on the job of convincing why voice makes more sense than biometrics. There is a lack of people in the immediate space, but there are other approaches to the same problem.”

During their first year at RTBI, Sachdev and Saraogi created a prototype of the technology they wanted to employ in the lab. The technology of that first prototype is the same as what is employed by Uniphore today with significant improvements regarding dialect recognition, noise
conditions and the ability to create effective and secure passphrases, among other technology and security improvements.

Their association with RTBI was a tremendous support for their new venture. They sought academic guidance and were rewarded with validation for their business idea. In retrospect, Sachdev notes that their biggest challenge at start-up was the co-founders’ maturity as entrepreneurs. They needed to learn how to run a sustainable business. As part of the RTBI family, Sachdev and Sarasogi received entrepreneurial mentorship, which was invaluable, and they raised funding fairly easily.

In their minds, Sachdev and Sarasogi were trying to create a B2C service, but their research efforts taught them that they should be operating in the B2B space. They learned that to reach out to end-customers directly meant that Uniphore would have to be “masters of content and technology providers”: customers need information and assistance to execute transactions across various industries with whom they interacted. Sachdev and Sarasogi realized following a B2C model meant the company would be stretched too thin and, therefore, decided that the company focus should be on its core competence, speech technology. Uniphore shifted its target customer focus to industry leaders who could adapt to content relevance in their respective fields.

Since Uniphore’s inception, Sachdev and Sarasogi have received a continuous education about the market in which they operate, marketing and segmentation. When Uniphore entered the B2B market, their target customers, large corporates and NGOs, were not yet keen on investing in the technology. Potential customers were comfortable with signing up to use the technology, but beyond that, they were not ready to commit because they did not see the inherent value. Voice was a new technology for this segment and they could not yet see all the benefits. Uniphore addressed this challenge by educating potential customers with data on the vast outreach that voice could bring them, the security that the technology could ensure, and the convenience and intuitiveness of the technology. Seeing this data convinced potential customers that speech technology would add value to their businesses.

Core Offerings

After four years of operation, Uniphore sees its impact clearly. It has been able to help businesses attract and retain new customers, promote business growth and reduce business costs. Uniphore has identified the following seven capability areas in which its technologies add value to a business:

- **Multilingual voice recognition** of 14 Indian languages where interaction is wholly by speech without need for keypad inputs by the caller;
- **SMS gateway systems** that allows for low-cost text messaging as a complement to voice services;

- Secure identity authentication by way of **voice biometrics**, which is as secure as fingerprints or iris verification;

- **Cross-platform compatibility** is built into Uniphore’s solutions so that mobility applications function flawlessly across all phone types;

- Pay-as-you-go **cloud telephony** services that enables business scale-up with no additional capital expenditures;

- Offering both **3G and GPRS-enabled mobile applications** allows for flexibility in solution-type; and

- **Banking and payment systems integration** brings m-commerce to the masses.

Uniphore has five different business verticals for which it develops a variety of different speech-based solutions: agriculture, banking, education, healthcare and retail.

- In the **agriculture** industry, Uniphore works with all stakeholders in the agri space, including agriculture extension services, contract farmers and input providers. It has a combined user base of 250,000 farmers.

Uniphore sees mobile technology as a way for farmers and businesses to cut costs and raise crop yields. What Uniphore has done is combine IVR with SMS and GPRS technologies, creating a mobile advisory system. This allows a business to set up pre-scheduled voice and SMS announcements that provide customized information to farmers. In addition, voice-based surveys are also possible to get customer feedback on products and services. Through Uniphore’s multilingual speech recognition system, farmers can access information about services at any time.

Uniphore also helps agriculture businesses optimize their field force. Field agents can spend more time on activities that require their presence, such as responding to farmers, since
the mobile advisory system is the harbinger of information and alerts to clients. Sales agents use customized GPRS applications to electronically send information to the business in real-time. Uniphore’s voice biometrics technology can also be used to make sure that services are being delivered to a business’s customers by having farmers use a voice application for identity verification and service acknowledgement.

- **Uniphore** has low-cost, voice-based solutions for the **banking** industry. It works with financial companies and m-commerce providers to provide their respective services in local language options and to integrate voice and SMS alert systems. Using voice biometrics, a customer can call the system and verify her identity. Then with speech recognition, the system interacts with the caller to process her request.

  Uniphore’s platform supports savings, transfers, loans and trades, as well as mobile top-ups and bill payments. Its clients have 500 active outlets and 150,000 customers.

- **Education** is the youngest vertical in Uniphore’s business. Its technology allows governments and education companies to make mobile phones a medium for training and teaching. Businesses can, for example, send lesson plans, teaching tips and other tools to teachers via voice or SMS alerts. Multilingual speech recognition has a role here, too, wherein companies can direct automated calls to teachers in their local languages, as well as test their knowledge and skills. Uniphore’s technology is able to understand teacher responses and give them appropriate feedback.

  Multilingual speech recognition also has use for students. Uniphore has customized English accent and pronunciation training applications that interacts with a caller, allowing them to practice the English language.

- Through its mHealth applications, Uniphore has been able to assist the **healthcare** industry become more efficient. Its speech technology, or VoiceNet, lets governments and healthcare companies provide more accessible, efficient and personalized healthcare throughout India. For example, a speech-based query system enables telemedicine wherein patients record questions in their local language and a doctor will follow-up via a phone call or text message with treatment information. Speech-based telemedicine is also used as a continuing education tool for healthcare providers: mHealth organizations have the option of sending training materials via mobile phones and use multilingual speech recognition to test providers’ knowledge and skills. Healthcare organizations may also create self-help reference guides for patients: a patient calls into a system, describes her symptoms in her local language and receives feedback. Uniphore’s telemedicine and self-help guides can be used with the voice biometric system for patient identity verification and to create a medical history database.
In 2011, Uniphore’s VoiceNet platform won the Rockefeller Foundation and mHealth Alliance’s Innovators Challenge, which recognizes mobile technology that is innovating and improving health systems and outcomes around the world.

- With its mobile solutions for the retail industry, Uniphore has been able to automate paper-based processes and enable real-time information access for manufacturers. Its customized SMS and GPRS applications allow a business to share voice and text content with various parts in its distribution chain. Multilingual speech recognition enables a business to automate their sales force by having sales agents interact with the system in their local language to place a sales order, record their route or input stock information. Voice biometrics can also be used for identity verification.

Today, Uniphore has close to 50 employees and has served approximately two million end-users. It has 22 major customers and has developed a customized application for each one employing its patent-pending technologies, VoiceNet and mCAS. Of its five business verticals, agriculture has the most activity; through this vertical alone, Uniphore has reached near one million farmers.

**The Product Development Process**

Hosted on the cloud, Uniphore’s voice technologies are integrated with SMS and GRPS platforms. They can be used with any third party system. The product development process, including a pilot project, can take between three and seven months. The length of the process depends on how well Uniphore understands its customer’s industry. Given that every company

### BASIX Sub-K: Building an Application

BASIX Sub-K iTransactions Limited, a leading financial inclusion organization in India, supports small business owners to act as agents in their home villages and provides local access to banking services, savings, government payments, money transfers, utility payments and mobile top-ups. It faced a challenge in providing an economical and reliable medium for banks to connect with customers via local banking agents, given low levels of literacy and insufficient infrastructure.

By using the VoiceNet platform, which uses state-of-the-art voice technology, Uniphore developed a solution that allowed clients to access financial account information from their mobile phones, as well as perform a variety of different transactions. The voice biometric system applies the client’s voice as a unique PIN to verify her identity and ensure that transactions are 100% secure. Each local agent is given a mobile phone to approve customer transactions, as well as a Bluetooth printer to issue a receipt on-site. Uniphore integrated this mobile solution with Sub-K’s information management system so that clients automatically receive financial information via voice, text message and email alerts.

The impact of Uniphore’s solution for Sub-K was three-pronged. Multiple language voice technology made transactions easy to order and execute. This reduced the capital expenditure of banks, making low-value transactions possible. Since transactions were processed in real-time, all data is agreed upon and updated instantly. Money is then always accounted for and available at the bank’s end. Integrating Uniphore’s software with banks and m-commerce providers meant that Sub-K is constantly growing service offerings to its clients, furthering their mission of greater financial inclusion.
has unique operations, Uniphore spends a lot of time to understand them and then tailor its solution.

Application development, therefore, starts with understanding a customer’s industry and how speech technology can be relevant. Once a customer is convinced of Uniphore’s capabilities and the benefits of employing such voice-based solutions, Uniphore starts its discovery process.

The discovery process is an in-depth analysis of a company. Uniphore takes the time to understand daily operations, goals, infrastructure and values, among other key points about its customer. Based on the discovery exercise, Uniphore is able to propose a solution. It does not end there though: there will be back-and-forth discussions and iterations between Uniphore and its customer before a solution will be settled on and tested. When a pilot is unveiled, it is tested on a small scale to see how the application works as a solution. It is tested to see if it addresses the issue Uniphore set out to resolve and if it adds value to the customer’s business. The pilot study factors in customer’s feedback to update the application. Once this is done, the solution is rolled out on a larger scale.

The last four years of operation have taught Uniphore that though a business may know what it wants in terms of its overall business goals, it will not be clear on its technology needs. A business knows where it wants to go, but not necessarily how to get there and the role technology can play. It is for that reason that Uniphore has learned that it must play the role of a patient educator as well, teaching its customers and potential customers about how technology can be the game-changer in its business mix. “People recognize IT now as a means to an end, but they’re not sure how it works. Most companies never had mobility solutions before because it’s super new,” says Caitlin Marinelli, Director of Marketing and Communications at Uniphore.
The Business Model

Speech-based applications allow for the capture and delivery of information. Uniphore develops voice biometrics and speech recognition technologies for enterprise automation, mobile money and vernacular content delivery. It employs a systems-based platform approach to connect businesses to customers, employees and partners. The platform includes VoiceNet, Uniphore’s personalized voice-based information retrieval and transaction system, and mCAS, its mobile control and access system. Uniphore’s model helps it create highly customized applications for customers using its systems, based on their needs and preferences. Uniphore employs a balanced approach to each application and assesses how customized or standardized a client’s application should be. “Some companies don’t want customization,” explains Marinelli, “and want more out-of-the-box, standard product to save time and money.” The platforms can easily be integrated into a business with pre-existing systems. Uniphore also offers the option of hosting business information on the cloud so that a business can scale more affordably and with ease.

Marketing, Sales and Distribution

Uniphore has two major goals in its marketing efforts: building on the Uniphore brand at a macro level, and educating people and generating awareness around speech-based mobility solutions. They do this through marketing and communication initiatives in public relations, news stories, conferences and academic publications. These efforts are ongoing and define the long-run strategy of Uniphore’s growth.

There are no quantifiable figures on Uniphore’s marketing efforts just yet. The company’s official website was only launched in early 2012. In the short run, the focus is pre-sales marketing via Google ads, trade shows, case studies and white papers. These efforts are immediate and attract people to Uniphore. If buzz is created around the work Uniphore does, potential customers approach the company for more information and these convert into quality leads for the sales team. “It’s moving from a traditional ‘push’ to ‘pull’ model,” Marinelli explains.

Until late 2011, Uniphore’s primary marketing efforts followed a “push” model whereby the sales team would cold call potential customers or Uniphore representatives would be present at trade shows. These “push” tactics are still Uniphore’s modus operandi to meet sales targets, but the company recognizes that it needs to adopt more sophisticated marketing to maintain a first mover’s advantage in speech-based mobility solutions since voice technology is becoming more popular. Higher-level “pull” tools, such as case studies and PR, have now been added to Uniphore’s marketing mix to essentially draw potential customers to the company.
After a sale has been made and completed, a customer agent engages in training and support by going on-site to make sure that everything is running smoothly. There is a hotline for customers to refer to for any questions. For more solution-specific issues, each solution has its own product manager who can be contacted in the event of any deeper issues.

Uniphore does have repeat business from organizations that see the value in speech technology. Once one process has been automated for a customer, it may ask for other processes to be similarly automated. The automation of various internal processes saves a business time and boosts its bottom line.

**Social Impact**

Uniphore believes that social impact is driven through profitable business. Some of Uniphore’s clients in its four business verticals – agriculture, banking, education and healthcare – drive for social impact. By measuring its impact via its customers’ data, Uniphore has enabled its clients to deliver social impact to its customers.

In the field of agriculture, Uniphore has helped agriculture extension and contract farming companies to disseminate information, such as market prices, to one million farmers, many of them being illiterate or semi-literate.

Another example, the mobile advisory system, which provides customized information via pre-scheduled phone calls and text messages, has empowered farmers by potentially improving their livelihoods in a personalized, customized way.

In the field of banking and financial inclusion, Uniphore’s technology has shown that secure financial transactions do not need to depend on biometric data like fingerprints. Much of the BoP engages in hard, manual labor, which over time, distorts a person’s fingerprints. A person’s voice, however, is a unique identifier since it does not change in adulthood. In the financial inclusion field, since many of Uniphore’s clients work with low literate populations, voice biometrics plays a large role in ensuring data security of sensitive, personal account information.

Education, Uniphore’s newest vertical, also offers technology with potential social impact. Its first application is an English language training application. A business may purchase this application from Uniphore to teach its workforce to speak English. Multilingual speech recognition allows students to understand, practice and master intonation, word and syllable stress, liaisons, and pronunciation of North American or British English. Marinelli notes that the potential
impact of this application has a “huge” effect on self-esteem and the future employability of students.

Uniphore has also developed teacher training mobile applications, the success of which, however, still depends on teacher motivation. Although such an application may be helpful for a teacher’s career and her students, it is up to her employer – be it a school or a company – to push her to recognize the value in such mobile tools. So far, education businesses buy into Uniphore’s technological value. There has been some resistance from the end-user, the teacher, because they do not immediately see the benefit of such training tools. Also, if a teacher is part of a particularly low-tech population, speech-based applications may be very new and not necessarily intuitive. Uniphore is currently searching for ways to alleviate the transition from limited-to-zero technology use to integrating it into everyday life.

Uniphore has also developed applications for healthcare that have made social impact. For example, Uniphore developed an application for World Health Partners, a social enterprise bringing health-related information to rural Bihar and Uttar Pradesh that allows patients to call a number to ask diagnostic health questions and receive suggested prognoses. This application is not only useful for social enterprises and not-for-profits, but can also be easily scaled up and adapted for hospitals across the country. There is also the potential to build patient and healthcare provider follow-up into the application.

In another example of healthcare impact, a government team distributed malnutrition packets as part of India’s Integrated Child Development Scheme. The packets are given to mothers of children under the age of five. For each participant in the program, data needs to be entered, so that the Scheme’s managers can keep track of distribution and nutrition-related data. Uniphore has developed an application that allows a mother to authenticate her identity when she picks up the packet, as well as go through an information menu that feeds into the government’s back-end systems. This has weeded out inefficiencies and kept data on the malnutrition program up-to-date.

Key Partnerships

Over its four-year business life cycle so far, Uniphore has cultivated important partnerships. It has developed technology partnerships with Nuance, the developer of Apple’s famous Siri application, and Syntellect, a provider of self-service and live contact center solutions.

- U.S.-based **Nuance**\(^{14}\) is the developer behind Apple Inc.’s Siri application. It provides speech, imaging and keypad solutions for consumers and organizations worldwide. Nuance solutions range from requesting account information from a self-service phone-based solution to searching the Internet via voice. Uniphore works with Nuance to develop and promote speech technologies in India.

\(^{14}\) Nuance: [http://www.nuance.com/](http://www.nuance.com/)
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- **Syntellect**\(^{15}\), in the U.S., is a leading provider of self-service and live contact center solutions. For over two decades, it has deployed thousands of applications globally for the consumer products, financial services, government, healthcare, help desk and high technology industries. Syntellect is Uniphore’s partner in employing IVR technologies that enable human-like conversations for information exchange and transactions.

Since technology is an ever-evolving field and the focus of its business, Uniphore has critical research partnerships to help keep its solutions current and relevant.

- **Telecom Centers of Excellence (TCOE)**\(^{16}\) is a public-private partnership promoting capacity building, affordable local solutions, research and development, think tank activities and greater standardization for telecommunications growth in India. It builds an innovative environment by forging synergies among academic institutions, telecommunications companies and the Government of India. Uniphore works with TCOE on R&D for telecommunications products and services across various industries. The partnership has borne several technologies, such as Voicelock, which uses voice recognition to authorize specific people to enter a secure location.

- **India-UK Advanced Technology Center**\(^{17}\) is a virtual joint research initiative supporting collaborative doctoral projects and research programs between India and the U.K. Uniphore is an active member of the Center: it works with several academic and industrial partners to support product trials, such as an agricultural call center that can quickly respond to the queries of rural communities.

- **Mobile Payment Forum of India (MPFI)**\(^{18}\) is a network representing banks, telecommunications operators, technology service providers, regulators and the national government. It enables knowledge sharing, awareness creation, identification of common resources, resolution of common issues and standards development. It works with international bodies for the development of secure and reliable mobile payment services worldwide. Uniphore works with MPFI as a mobile payments solution provider by providing customized voice technologies to help the Forum advance mobile payments in India.

For Uniphore, an essential part of its scale-up strategy is to form more strategic partnerships. The company defines scale as going “deeper rather than wider.” It seeks to reach new end-users within its five verticals: how can Uniphore cultivate 20 customers per vertical, for example? To achieve this depth, Uniphore’s technology solutions will need to become a necessary ingredient within its five target industries. An appropriate and effective strategic or

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\(^{15}\) Syntellect: http://www.syntellect.com/pages/default.aspx
\(^{16}\) Telecom Centres of Excellence India: http://www.tcoe.in/
\(^{17}\) India-UK Advanced Technology Center: http://www.iu-atc.com/
\(^{18}\) Mobile Payment Forum of India: http://www.mpf.org.in/
channel partner, then, would be a large industry player (e.g. the Reserve Bank of India) who
endorses not just speech technology, but specifically, Uniphore’s solutions for that industry
(e.g. banking and financial services).

Because a majority of Uniphore’s existing partnerships are R&D-based, Marinelli says they have
been easy to manage. With a partner like Nuance, though, Uniphore needed to think
strategically about what mutual value the two companies could bring to each other and who
can best serve what target customer and why. Since Nuance already has operations in India,
Uniphore realized that the partnership needed to be based on complementing one another and
not competition. Ultimately, both companies saw that working together was better than
working separately. The synergy is obvious: through its extensive R&D, Nuance had developed a
robust technology, and Uniphore’s reputation as a speech-based mobility solutions provider in
India made the company an attractive partner.

Present Challenges

Uniphore is facing the typical challenges of an organization growing beyond the late-stage start-
up phase. Its focus is on growing its presence within its target business verticals. Since early
2012, Uniphore’s management has been mulling over strategies on how to take the company to
the next level. They have been discussing ideas around deepening Uniphore’s reach within its
current market segments and how to prioritize needs in the face of limited funding. To achieve
this, Uniphore’s leadership realizes that the company’s sales function needs to be segmented.
Until recently, Uniphore’s sales agents were not assigned to any particular business vertical;
they work for all five verticals, but this was not an efficient way to build a sales base. Optimally,
each sales agent should be assigned to a specific industry and build expertise and networks
within that industry. Today, Uniphore has individualized sales agents for each of its business
verticals.

A significant challenge faced by Uniphore, though, is ramping up on more experienced, talented
human resources. What kind of human resources does the company need to push forward its
growth plans? Staffing for all relevant functions is critical. “We want to induct the right people
into the team. We don’t want to change the culture of the company drastically,” Sachdev
explains. “We have 35, 36 people now. In the next 12 months, by March [2013], we want to
double that number. We have to be careful with each one of these hires.”

Today, Uniphore’s greatest challenge is securing its next round of funding. Its business model
has been proven, as supported by the fact that the company has been earning profits since its
second year of operation. Every year, the company is growing by approximately 100%. Internally,
Uniphore’s team wants to accelerate its growth. For this to happen, they believe
there needs to be greater investment in human resources, marketing and R&D. These are
company areas that carry long-term returns, and Uniphore is searching for strategic investment
from a partner to propel the company to its next level. Uniphore is actively fundraising, seeking
funds from both traditional investment sources as well as impact investors. They are searching for funding from a partner who believes in the potential of speech technology and the consumer volume that is present in India. Uniphore hopes to secure funding by mid-2012.

The Future

Though Uniphore develops customized mobility solutions for its customers, it has still witnessed employment of its solutions that it could not have foretold. For example, a health application the team developed was designed for patients as a diagnostic tool, but it turns out that it also helps healthcare providers. Nurses began to use the application as part of their diagnostic arsenal to help them make an accurate diagnosis. “Very few applications go exactly the way we expect them to go,” says Sachdev.

To understand how applications are being used on the-ground, Uniphore has invested in a field adoption team. The team goes on-site and learns how the application is being used. This evaluation method helps Uniphore to not only keep an eye on the utility of their applications, but also to effectively work backwards and gain insights into any new revenue-generating activities that are coming out of application practice.

Sachdev explains that because Uniphore is a technology company designing both standard and customized solutions, it is futile to speak about plans for geographic or product expansion, at least over the next 20 months. Uniphore’s technology is not limited to a single geography, nor is it a single product: customized technology can operate anywhere in India, and Uniphore’s product focus will continue to be speech-based mobility solutions. Uniphore’s plans are focused, however, on capturing greater market share. Uniphore has had a first-mover advantage, and it needs to further capitalize on that and grab onto every available opportunity so that its solutions become more integral in the evolving business landscape.

As Uniphore continues to raise funds to help propel it into the next phase of its business life cycle, Sachdev and Saraogi are confident that they have begun to prove that speech technology can be a vital complement to existing business mobility solutions. Uniphore’s technology represented a considerable effort of both time and money, but the result has been a huge competitive advantage for the company. Sachdev and Saraogi believe that the right investors to work with will also buy into the value proposition Uniphore offers, as well as appreciate its singularity in the market today.