White Paper

Buying Guide: On-Demand vs. On-Premise IVR Systems

Selecting a Deployment Platform for Voice-Based Services

NOVEMBER 2008

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> *Tellme is a great example of making technology serve the needs of real people, not the other way around.*
>
> Walt Mossberg
> *Wall Street Journal*

Introduction

Voice-based self-service applications are increasing in both their value to the enterprise and their overall complexity, scale, and rate of change. As a result, companies need to carefully evaluate the different deployment models available in the market – Premise-based, Traditional Hosted, and On-demand – when planning an investment in their voice applications. The choice of platform should weigh the organization's business goals, as well as its need to manage the risks of operating the solution. To determine the most appropriate platform for a specific deployment, leaders should consider these five key factors:

1. What is the strategic value of the self-service channel, and how does each platform support the goals of the business?
2. What is the capacity profile of the application, and what are the requirements for reliability and availability?
3. How will the platform protect and extend the investments I have already made?
4. How future-proof is the solution? What feature enhancements and technology upgrades are anticipated?
5. What is the total cost of ownership for the different platform options?

The platform on which a business chooses to deploy its voice applications can have a big impact on the success of the project. Depending on the program's goals, an premise-based, a hosted, or an on-demand platform may provide a better return.

This document will discuss the architectural differences between premise-based, traditional hosted, and on-demand IVR deployments and the relative advantages and disadvantages of each for the enterprise. The goal is to provide a framework for business leaders deciding between the different deployment options in the market.

Why invest in the phone channel?

Despite the growth in web-based self-service applications, the phone remains a primary customer touchpoint. Across industries, customer care call volume is increasing, and companies are experiencing a change in how and when their customers want to engage, particularly as mobile and multimodal device usage increases. The availability of online resources has trained consumers that the information they seek should be relevant and immediately available. Additionally, more and more companies view investment in their phone channel as an opportunity to enhance their brand, not just to target cost-reductions.

In parallel with these trends, the complexity of telephony systems and voice technologies is accelerating. Thanks to advances in speech recognition and interface design, more complex tasks are automatable. For example, it is now possible to troubleshoot a DSL outage, order pizza for dinner, or resolve a package shipping problem all within voice-based applications. However, these advances come with a price: backend and web service integrations require larger on-site teams to design and manage applications, and the rate of technology change far exceeds that of traditional IT deployments, with major updates typically available every 9-18 months (compared to the expected 3-5 years for other networking investments).

Because customer care costs scale linearly with agent work time, there is a strong business case for optimizing agent resources by achieving higher self-service rates -- each percentage improvement in automation rate can yield tremendous savings. At the same time, quality of service and customer satisfaction are key to maintaining and strengthening customer relationships. Only well-informed investments in new technologies can generate better ROI by increasing automation or reducing underlying costs.

Given these environmental variables, the platform on which a business chooses to deploy its voice applications can have a big impact on the success of the project. Depending on the program's goals, a **Premise-based**, a **Hosted**, or an **On-demand platform** may provide a better return. To determine the most appropriate platform for a specific deployment, leaders should consider these five key factors:

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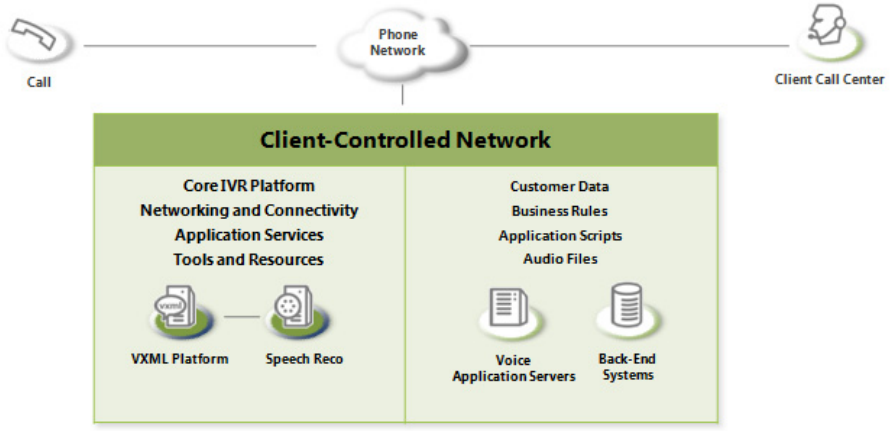
What are the choices for deploying voice applications?

Operators of voice-based applications have three primary platforms to choose between for deploying their services – Premise-based, Hosted, and On-demand. All three options are established deployment models, answering and automating billions of calls every year. This section discusses the high-level architectures of each of the three platforms.

Premise-based Platforms

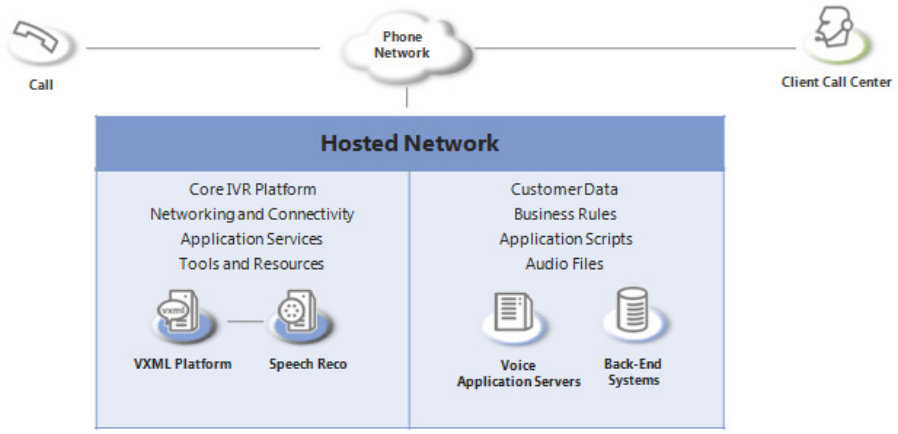
Traditionally, enterprises have deployed their self-service telephony applications within their own corporate network or datacenters, alongside any existing telephony or web-services equipment.



In this model, inbound telephony services, application logic, customer data, port capacity, and contact center call routing is handled by on-site hardware and software platforms. When a call arrives at the company's toll-free number, it is routed over the carrier network to the point of arrival at the client's network, where the application platform takes control of the call, handles any automated tasks, and passes calls to the contact center for agent handling.

Hosted Platforms

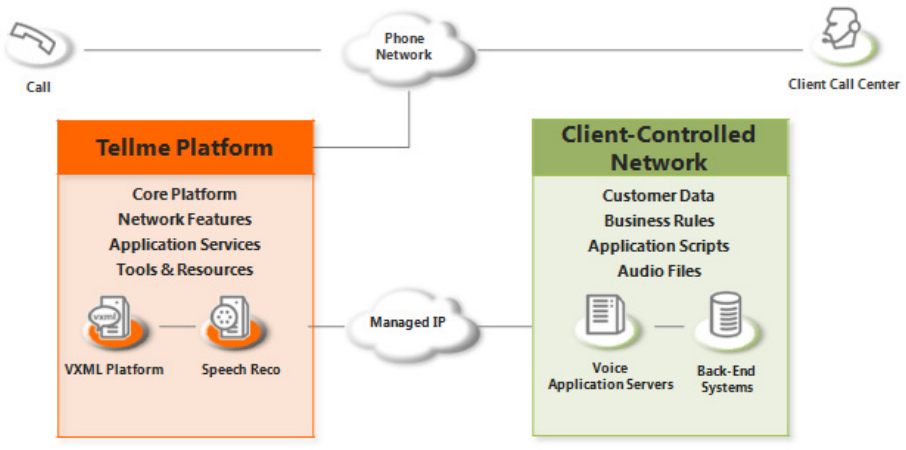
Hosted platforms use the same hardware and software as premise-based platforms to handle calls, but the applications, data and telephony hardware are physically located in the datacenter of a third-party provider. When a call needs to be handled by an agent, it is passed to the contact center back over the phone and data network.



With the hosted model, businesses still maintain control over the application, and are responsible for all software licenses, capacity build-out (ports) and hardware upgrades. These services are all completely segregated within the hosted data center, sharing no common hardware, software or infrastructure. Telephony systems may be managed by the hosting provider, or the provider may offer these services for a recurring management fee.

On-demand Platforms

On-demand platforms offer a different approach to voice application management. Instead of building and maintaining separate capacity and hardware for each client or application, on-demand vendors offer a service where the core application platform, telephony features, tools, and management services are available on an on-demand basis. In this model, client companies continue to maintain control over their application logic, business rules, and customer data, but are not responsible for the maintenance and upgrades to the hardware in the network.



Tellme – the largest on-demand voice application platform

Unlike traditional premise-based or hosted providers, Tellme does not build and manage islands of ports and speech resources dedicated to specific customers or applications. Instead, Tellme operates a shared infrastructure distributed across multiple, geographically redundant data centers that provides support to all applications simultaneously.

This provides our clients the following benefits:

- **Dynamic capacity allocation.** Incoming calls use any port on the Tellme Network, and ports are not assigned to specific clients. This means unexpected spikes never surpass the capacity of the network; clients don't have to invest in mostly-unused capacity.
- **Shared network improvements.** Because the Tellme Network is a shared resource amongst all clients, every upgrade to the infrastructure benefits all clients, with no downtime or additional costs.
- **Economy of Scale.** Tellme can leverage important network optimizations and improvements for its clientele that would be too costly for individual companies. For example, Tellme invested heavily to support native VoIP processing; this job may have been too expensive for most companies to do on their own.
- **Pay for what you use.** Tellme charges based on network usage, offering a true pay-as-you-go pricing model. Advanced features like outbound notifications are also available on an as-needed basis.

Five Key Considerations

Strategic and Business Value of Self-Service

> *"What is the strategic value of the self-service channel, and how does each platform support the goals of the business?"*

Because the phone is a primary communication channel between companies and their customers, within many industries it is a key point of strategic differentiation. Depending on the needs of the business, the deployment platform may need to support many different goals, including:

- Cost savings and/or revenue generation
- Brand differentiation
- Customer satisfaction and retention
- Continual rollout of new services and features

Different platforms support these initiatives in different ways. Deploying applications on a **Premise-based** solution, provided the correct team is in place to support it, can deliver on goals like revenue generation and customer satisfaction. However, acquiring and operating a reliable, high-capacity voice platform infrastructure can be very costly.

Hosted platforms, on the other hand, provide many of the same application-level benefits of the premise-based deployment option, but may also allow companies to decrease their investment in networking infrastructure.

For companies looking to improve their strategic investment in the phone channel, an **On-demand** solution provides some compelling time-to-market benefits in addition to the overall cost savings achieved by eliminating the costs of building and maintaining the platform infrastructure in a premise-based or hosted model First, with capacity and features on-demand, new applications and services can be deployed without further capital investment; with a VXML application hosted on a webserver, new content can be delivered to customers in real-time, and application development times are significantly reduced. The flexibility of these platforms allows businesses to be more nimble with their voice offerings and more effectively manage their interactions with customers.

Capacity and Availability Profile

"What is the capacity profile of the application, and what are the requirements for reliability and availability?"

The pattern and variability (also referred to as "spikiness") of call volume received by a particular application is a key data point when considering the three different platforms. It is also important to consider the service's needs for application availability (or "uptime") and overall reliability of the platform. This second point is particularly important, as achieving high levels of availability requires significant ongoing investment on behalf of the supporting IT organization.

Premise-based platforms are well-suited to handle applications with consistent, predictable call volumes, both over the course of a day and seasonally. Businesses must purchase and provision enough capacity to handle any spikes in traffic that the application might receive – including unplanned spikes caused by external factors. The risks of this approach are two-fold; there is a chance to either over-provision and waste money on unused capacity throughout the year, or under-provision and risk missing valuable customer calls during a surge in call volume. On-premise solutions also put the burden of managing the availability of the solution in the hands of the business – maintaining a highly available solution (99.99%+) requires significant investment in monitoring, hardware, and port redundancy that can be difficult to sustain.

Similarly, **Hosted** platforms are a great choice for applications with relatively flat call volumes. The primary difference between this option and on-premise is customers of a hosted solution gain the advantage of availability and reliability. Because the application, platform, and telephony hardware reside in a managed environment, the enterprise is not directly responsible for managing the service level (SLA) for the system's availability guaranteed by the vendor.

An **On-demand** platform is an ideal solution for both of these concerns. For applications that can receive significant spikes in call volume, an on-demand platform can provide capacity-on-demand; customers can run applications without concern of holding unused capacity or turning callers away when it's most important to speak with them. Deploying applications in an on-demand solution means only paying for the capacity used. Next, because network operators operate on pooled resources, companies can depend on the platform to provide very high levels of availability. Finally, on-demand platforms like Tellme are

geographically redundant, allowing customers to minimize their risk of service interruption without any additional investment.

Protecting and Extending Prior Investment

"How will the platform protect and extend the investments I have already made?"

The stable of technical and management capabilities necessary to build, deploy, and maintain the performance of a DTMF or speech-based application is rapidly expanding. Additionally, the rate of change in technology, whether IP-based telephony or speech recognition, requires companies to be increasingly nimble with the scope and frequency of their system upgrades. The choice of a deployment platform needs to protect and extend any prior investments businesses have made, whether in individual expertise or supporting technologies.

For companies that have already invested in IT and networking resources, design capabilities, and speech expertise to create and continually improve an application suite, a **Premise-based** solution may be a good fit. These solutions require large teams to effectively manage and optimize the performance of each individual application.

However, a corporation that has only partially developed the in-house expertise necessary to manage a complex IVR would benefit from the services included in a Hosted or an On-demand platform. For example, by selecting a **Hosted** provider, organizations that have already invested in application design and development, but lack expertise in systems integration and management could benefit from the managed services and existing infrastructure these platforms offer.

On-demand platforms offer even more flexible benefits for companies looking to optimize any prior investment in the channel, and at the same time extend those capabilities. Network providers continually refine and improve the core platform and application services and share the benefits automatically across all their customers. This means that companies will receive improvements to application performance, speech recognition, network architecture, and upgrades to standards (like VXML 2.1) as soon as they are available. At the same time, companies choosing to deploy applications on a network platform can easily retain control over the application itself. This combination of flexibility and the automatic upgrade cycle helps companies maximize their earlier investment in the channel while ensuring they continue to see performance improvements.

Future-Proof

"How future-proof is the solution? What feature enhancements and technology upgrades are anticipated?"

Not only should a deployment model be determined by evaluating past investment in a channel, there is a strategic need to ensure that the platform will remain relevant and continue to provide increasing value in the future. As business needs and the underlying costs of operating a voice-based service undoubtedly will change, companies need to select a platform that is as flexible and future-proof as possible.

Deploying an **on-premise** solution does not necessarily limit the flexibility of the solution in the future, but it may require additional expenditures (e.g., for hardware or software licenses) to add new features to the application. What's

more, because call volumes shift over time, the enterprise may be required to add new circuits and ports to support the traffic, or hold onto excess capacity that is no longer in use. Changing standards and protocols may also drive the need to further invest in the solution.

Hosted platforms provide some better insurance over future changes to the voice service landscape, primarily by helping to manage connectivity and evolving telephony protocols. However, these solutions still require the business running the application to continue their investment in software and new features required by their service roadmap. For example, if a company would like to expand their operations internationally, new languages, TTS, and international transport capabilities will need to be purchased. This model may work well for applications with a higher tolerance for slower upgrade cycles.

In general, **On-demand** platforms offer a host of services to their clients that provide this added value as a part of the core platform. Providers like Tellme also offer access to on-demand feature sets already native in the platform – there is no additional investment required on the part of their clients to add features like SMS and telephony outbound notifications, additional languages, or advanced text-to-speech (TTS) engine support. When the application roadmap requires them, they can be provisioned. The platform itself is also continually kept "evergreen." Customers automatically inherit functional upgrades as they're added, with zero downtime, zero development effort, and no incremental cost. These upgrades include improvements to speech recognition engines, speech grammars, bulk audio libraries, network infrastructure, and standards and protocol support, all of which contribute to the continued health and performance of all the applications on the network.

Total Cost of Ownership

"What is the total cost of ownership for the different platform options?"

Ultimately, when choosing between an on-premise or an on-demand deployment, the total cost of the system and the value derived will determine which platform is the best fit. With **Premise-based and Hosted** deployments, the owner of the solution is responsible for the cost of the hardware, software licenses, telephony equipment, and any software upgrades. The operating costs of maintaining the capacity needed to handle spikes in traffic and IT resources for maintenance and performance upgrades must also be considered.

By deploying instead to an **On-demand** platform, companies can reduce or eliminate many of these capital and ongoing expenses. Because the software licenses, maintenance, upgrades, and hardware costs are incurred by the platform provider, the owner of the application can eliminate a significant amount of capital expenditure. Additionally, there are cost savings to be found by only paying for the capacity used, and further benefits that can be realized from increased availability and better application performance over time due to continual platform refinements.

Conclusion

Ultimately, businesses considering replacing or upgrading their current voice applications need to choose a provider based on the financial and customer satisfaction benefits that particular solution can provide. Before choosing a vendor, however, it is more important for decision makers to consider the type of platform on which to deploy their applications.

For some companies who have invested heavily in network infrastructure, voice application development and design, and highly available, predictable solutions, on-premise or hosted platforms remain excellent deployment options. However, it is an expensive proposition to develop and maintain these disciplines and technologies for any organization. When assessing factors like the channel's strategic value, capacity profile, current investment in technology and expertise, future development needs, and TCO, an on-demand IVR platform is a compelling choice for many enterprises, large and small.

About Tellme

Tellme is the world's largest VoiceXML platform, improving automation and customer service performance for businesses across 2 billion+ calls every year. To deliver this world-class service, Tellme builds and maintains an award-winning platform that encompasses the following features:

Application Lifecycle Resources: Customers, partners and developers who build applications on the Tellme platform use Application Lifecycle Resources to develop and optimize their applications throughout the lifecycle of the application. Tellme offers a variety of tools to ease voice application management and drive insights that can increase task completion rates. Tellme helps you accomplish tasks such as: building and testing voice applications, changing your voice application in real-time, recording calls for tuning purposes, analyzing user segmentation and calling patterns, and much more.

Core Platform Services: Tellme experts manage, maintain and optimize the Core Platform Services to deliver the best performance on core platform functionality. Tellme's expertise in speech, audio and integrated customer experience enhance the quality of your inbound and outbound voice applications to enrich the caller experience, increase task completion rates and create opportunities for further business growth.

Network Services: Tellme's carrier-grade network leads the industry in scalability, security and reliability due to its attention to Network Services. Tellme customers enjoy both peace of mind and flexibility with a carrier-grade platform that supports the latest in network technology. With capacity on-demand, Tellme can easily handle seasonal or event-driven spikes in call volume, ensuring you are always available to your customers, and there's no bottleneck for important outbound communications.

For more information, visit http://www.tellme.com/business.