

Standards in the Contact Center: Why You Should Care

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SIP...HTML...VoiceXML...SOAP... You hear these acronyms and many more bandied about with great frequency. But what do they really mean and why should you pay special attention to these particular terms versus any others? From my and my employer's perspective, these are exceptional because they are all acronyms for standards.

Open standards are particularly valuable to contact centers because they deliver increased compatibility between components, enabling true interoperability. In doing so, they make it easier, faster and less expensive for companies to implement new and emerging technologies that have the power to greatly enhance customer experiences and improve customer loyalty.

Most importantly when vendors provide standards-based applications, it opens the door to selecting those vendors not based on the product's bells and whistles, but more importantly on the services, support and training they provide after you buy their products. This paper highlights the value that open standards-based applications can bring to the contact center and why you should be demanding them from vendors.

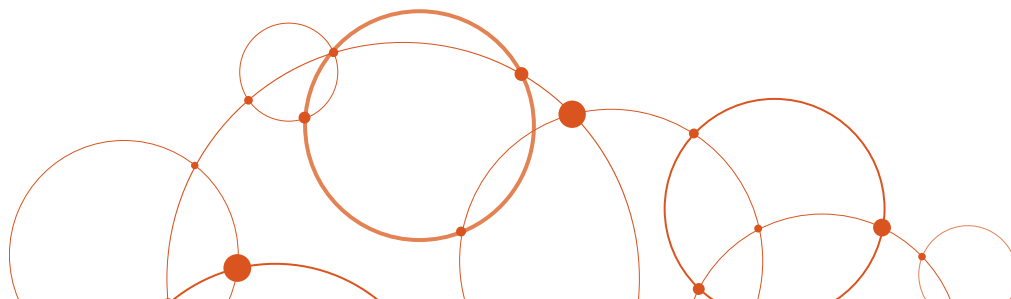
What are Standards? The Time-Tested Answer

At the risk of stating the obvious, let me level set why one should bother with standards. Open (non-proprietary) standards are simply publicly available specifications, that dictate how a standard must behave, and enable disparate computer hardware and software to easily "speak" to one another. Anyone can obtain and implement a standard and users can generally download implementation guidelines for free via the Internet. Users then develop their own code or buy third-party code that incorporates the specifications of the particular standard and works in concert with intended applications, systems or platforms.

Standards are not a radical new concept. In fact, it is reported that standards can be traced as far back as 7000 B.C. when the Egyptians used cylindrical stones as units of weight. Standards have become very prevalent across the entire high-tech world, not just in contact centers.

A standards-based application or system must be built to certain specifications, just like a house. A home builder is required to follow established parameters, but the ultimate look-and-feel of a house can be customized, just like a standards-based solution, depending on the needs, wants and tastes of the builder or the prospective homeowner.

Standards are not a radical new concept. In fact, it is reported that standards can be traced as far back as 7000 B.C. when the Egyptians used cylindrical stones as units of weight. Standards have become very prevalent across the entire high-tech world, not just in contact centers. Open standards provide a common platform upon which computer hardware and software can "speak" to one another. They deliver increased compatibility between components and enable true interoperability. For example, open standards are providing an important common platform that is enabling the merging of telephony and Web services, and allowing multiple applications and systems to communicate with one another, regardless of whether they are voice, chat, instant messaging (IM), audio or video, as long as they all conform to the same standards.



Getting to the Heart of it All – Why Should Contact Centers Care about Standards?

Contact centers, and enterprises in general, are moving from hardware-based time-division multiplexing (TDM) to software-based Internet Protocol (IP), causing open standards to become increasingly important. Incorporating standards will allow companies to realize a number of important benefits:

- **Greater control** that enables companies to select the products that best meet their needs rather than the technology that their vendors are mandating; e.g. Interactive Voice Response (IVR) is moving to a voice portal and incorporating VoiceXML (VXML) – which enables the solution to work on many platforms.
- **Increased choice** as companies gain the ability to eliminate vendor lock-ins, and ultimately realize additional cost savings and greater efficiencies.
- **Faster implementations** through “plug and play” integration, enabling companies to save time and money on initial deployments.
- **Scalability** by enabling companies to readily and inexpensively grow their operations as their businesses expand.
- **Reduced complexities** by delivering a common protocol that connects the people, processes, systems and applications that support the business.
- **Decreased costs and increased interoperability** because less customization is needed to make the various applications interoperate which has the potential to significantly reduce customization related professional services.

Open standards also enable vendors to decrease platform-associated development costs. As a result, the cost to develop new solutions and products continues to decrease. For example, the prices for session initiation protocol (SIP) devices, such as phones, has dramatically decreased over the last several years. In turn, this has made the implementation of Voice over Internet Protocol (VoIP) in the contact center significantly more reasonable. And because platform development costs have decreased, vendors can now increase their Research and Development (R&D) investments in the applications that ride on the infrastructure, which lends itself to quicker development and delivery of more robust applications.

Open standards are particularly valuable to contact centers because they eliminate the idea of “black boxes.” In the past, companies were required to buy one big “black box” from one vendor, containing all of the basic application components they needed. When the company wanted new functionality, they had to go back to their vendor and have them add and integrate new software or hardware with the applications. This was a time-consuming and sometimes cost-prohibitive process that limited enterprises to only purchasing additional solutions from the one vendor that was building their “black boxes.”

The recent advent of standards-based applications has given contact centers the newfound power to disaggregate the components within those “black boxes” and provide them the freedom to choose the solutions and vendors they want to work with, and the ability to easily interoperate various systems and applications. This increased flexibility and efficiency means that contact center agents can be more versatile and effective as they handle customer inquiries received via multiple channels – voice, email, and chat. These factors then have the potential to increase agent and customer satisfaction, reduce complexity and costs, and potentially provide a healthier bottom line.

The Ongoing Evolution of Standards

As open standards continue to mature, we will see the development of a number of new and innovative products and services. For example, VoiceXML is replacing proprietary self service voice portal applications because of the benefits it provides as an open standard; it can run on any standard-conforming vendor’s platform, enabling customers to eliminate vendor lock-ins; and, as a common protocol that is widely known by developers, it allows companies to decrease development costs. And as further evidence of the ongoing evolution of standards, state chart extensible markup language (SCXML) is being developed as part of an attempt to revise and improve the Voice XML language to factor out the flow control logic. SCXML, which can be used with VoiceXML separately, will allow companies to control and integrate a variety of business processes and back-end systems.

Another open standard, SIP, is beginning to open up opportunities for presence management, allowing SIP-based, VoIP-enabled contact centers to detect a user's availability on a network, and route communications to that user at the best possible phone number. Many companies will one day use presence management to extend customer service and sales from the contact center throughout the organization. And, this ongoing evolution will continue indefinitely as standards-bodies regularly analyze if there are opportunities to make technology better, faster, cheaper.

Are Standards Right for Your Contact Center?

Of course, standards are part of every contact center. After all, T-1 and E-1 for trunking is a standard that's been around for quite some time. However, if a company is currently using a system that is completely integrated and meets all of its needs, it obviously doesn't make sense to dispose of existing technologies. That said, as companies require new functionality or capabilities, they should seriously consider incorporating standards-based applications for future implementations. The following items should be considered when deciding whether to implement standards-based or proprietary solutions:

Many vendors claim to provide standards-based applications, when in fact, they are providing a mix of proprietary and standards-based solutions. In many people's minds, proprietary means that the solution is original and provides a differentiation when it comes to making buying decisions. But that doesn't necessarily mean that the product is the superior offering.

- **Vendor reputation** - standards don't guarantee reliability or scalability. Does the vendor have a lot of experience and a good track record in the field? What kind of reputation do they have for quality products/offerings and for taking care of customers?
- **Vendor support capabilities** - are in-house resources needed? Can the vendor provide in-house support if it is needed? Can they deliver adequate worldwide support?

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Also, it's important to remember, that even if a company opts to go with a vendor that incorporates standards into its solutions, the company should check to make sure that the vendor can guarantee that the system meets the standards' specifications. Reputable vendors will have established a policy for interoperability testing or some type of standards certification once the product has been built.

Start Demanding Standards-based Applications

Standards also and maybe most importantly, force vendors to compete on the services, support and training they provide, not just on the products themselves. That is truly the differentiator for any company - innovative products that also provide true breadth and value of the services offered, the responsiveness to support requests and the comprehensiveness of their training.

Overall, by not incorporating standards, technology innovation is being stifled and contact centers are limited to cookie-cutter solutions provided by their vendors, rather than solutions that fit their specific needs.

And for vendors, in the long run there is no downside from incorporating standards-based technology into product offerings - it allows them to focus on providing value-added applications and ensuring that service and support are the differentiators for the business.

The fact is that open standards present contact centers with a number of benefits and opportunities that simply cannot be ignored. The time is now for these centers to start demanding standards-based solutions from their vendors.

How Aspect Meets Those Demands

Aspect believes that standards open doors, and we fully stand behind the use of open standards in the contact center for a number of reasons:

- Standards are vendor neutral and therefore provide our customers with more choice; customers are given the opportunity to mix and match products,
- Standards create a positive and beneficial vendor-customer relationship,
- Standards make our customers' contact centers more productive, and
- Standards give us a solid platform upon which we can develop new technologies that easily interoperate with other contact center solutions.

Because we believe that SIP, VXML and other standards are good for our customers, we are committed to continuing to invest in open standards, and we are working hard to incorporate them into our broad range of solutions.

As the largest company focused on the contact center, it is our honor and our obligation to lead the development and deployment of standards that complement the needs of the contact center. For example, Aspect is extremely active in various industry standards organizations that impact the contact center industry, including the SIP Forum, the VoiceXML Forum, and the World Wide Web Consortium (W3C).

Our employees are working alongside other industry experts to develop the emerging standards that we believe will greatly benefit our customers, including:

- **State Chart XML (SCXML)** - a general workflow language that can be used to control and integrate a wide variety of business processes and back-end systems. It is currently in the early development stages, but we think it will be a valuable tool that will help standardize contact centers.
- **VoiceXML 3 (V3)** - another promising new standard that we are intimately involved in developing. Upon completion, VoiceXML, for voice self-service applications, will enable speaker verification, more powerful media processing, and better control flow, among other features.

As further evidence that Aspect firmly is committed to incorporating standards-based technology, we are focused on incorporating SIP into all of our applicable product offerings. Currently, each product in our Signature product line, our Aspect Unified IP product, and many of our PerformanceEdge product offerings have SIP-based VoIP capabilities. And, we are in the process of adding these capabilities to all of our other product offerings.

As further evidence that Aspect firmly is committed to incorporating standards-based technology, we are focused on incorporating SIP into all of our applicable product offerings. Currently, each product in our Signature product line, our Aspect® Unified IP™ product, and many of our PerformanceEdge® product offerings have SIP-based VoIP capabilities. And, we are in the process of adding these capabilities to all of our other product offerings. The neutrality provided by SIP makes it even easier for our customers to interoperate their Aspect solutions with front-end and back-end systems and applications from other vendors that develop SIP-based solutions.

Recently, we have also added Microsoft® Office Communications Server 2007 Speech Server as an embedded component of our voice portal product, which leverages Media Resource Control Protocol (MRCP), a communication protocol that enables a speech self-service system and a speech recognition system to speak to one another. Because it leverages this standards-based technology, it allows vendors, like Aspect, to speed-up system development, and provide customers with more choices relating to speech recognition and text-to-speech technologies. This is an emerging protocol that is expected to enable improved self-service interactions for consumers at a very positive price point.

In addition, the company is fully supporting open source solutions, like Asterisk, to provide standards-based IP PBX capabilities at a fraction of the cost of proprietary PBXs. In fact, Aspect has implemented Asterisk at its own corporate headquarters and many branch offices to enable a straightforward integration with its contact center platform, as well as to benefit from the flexibility that an open, customizable solution provides.

Aspect will continue to provide leadership and sponsorship for open standards in the contact center. We recognize that doing so ultimately brings our customers more choice and more flexibility to their contact center, which enables them to provide higher levels of customers service and helps reduce overall contact center costs. As a result, we are committed to embracing standards as they are being developed, and are dedicated to incorporating them into our future products as appropriate.

Addendum:

Subdividing the Standards

There are essentially two different types of open standards – interface standards and application standards – both of which impact contact center-related applications.

Interface Standards

Interface standards, sometimes referred to as Protocol Standards, are very important and should be of great interest to today's contact centers. These standards enable the exchange of information between two or more, typically different, systems. There are four Interface Standards that have a big impact on contact centers:

- **HyperText Transfer Protocol (HTTP)** is a standard protocol that enables web clients and servers around the world to request information from each other and respond to one another. HTTP, which is used daily by those who surf the Internet, enables computers to easily and safely exchange documents with other computers, and ensures that they are readable by different systems.
- **Web Services** is a software system that is designed to support interoperable machine-to-machine interaction over a network⁵. Built on industry standard protocols, Web Services transport messages between network applications, regardless of platforms or devices.
 - **Simple Object Access Protocol (SOAP)**, a protocol used in Web Services, allows one computer or application to send instructions or requests to another computer or application. Other protocols can accomplish this, but SOAP is unique because it incorporates XML and HTTP. This combination enables tighter integration with XML standards as well as the architecture of the web, provides more versatility through protocol independence, and delivers faster performance than other XML-based protocols.
- **Session Initiation Protocol (SIP)** is a standard protocol that initiates, modifies and terminates interactive communications sessions. It enables users to be contacted wherever they are located at any particular moment. For example, a user might have a PC, a laptop, a cell phone, an IP phone and a Blackberry. SIP considers dynamic location information and reaches the user on the best possible device. SIP-enabled applications are becoming very common in the contact center and allows for easy integration of products and implementation and use of VoIP.
- **Media Resource Control Protocol (MRCP)** is a communication protocol that enables a speech self-service system and a speech recognition system to speak to one another. MRCP is most important to voice portal vendors because it allows them to speed system development, and provide their customers with more choices relating to speech recognition and text-to-speech technologies. This is an emerging protocol that is expected to enable improved self-service interactions for consumers.

Market acceptance ultimately determines which technologies become standards. Take, for example, the case of H.323 versus Session initiation Protocol (SIP). H.323 was well on its way to becoming a standard when the market realized that it was too complex and rigid. As a result, SIP became the accepted standard. SIP provides much of the same functionality as H.323, but it is less complicated and easier to implement, and it performs better.

Application Standards

Applications Standards divide the system into three pieces – the platform on which the applications run, the tools that build the applications, and the applications themselves. Key Application Standards include:

- **Extensible Markup Language (XML)** is a general-purpose markup language. It enables anyone to originate and use a markup language for many types of applications and problem domains. XML's primary purpose is to facilitate the sharing of data across different information systems, particularly systems connected via the Internet.
- **HyperText Markup Language (HTML)** is a markup language that enables users to create web pages with hypertext and other information. It allows for various tools such as text treatments, bullet points and paragraphs, which help users organize content. The more recent version of HTML, called XHTML, is based on XML and is a more flexible and powerful language than HTML. It serves essentially the same function as HTML, but is more modular and customizable.

- **VoiceXML** is a standard XML format for specifying interactive voice dialogues between humans and computers⁶. VXML is designed to handle text-to-speech, digitized audio, and speech recognition, among other items. Its major goal is to bring the advantages of web-based development and content delivery to interactive voice response applications⁷. VoiceXML seems to be surpassing proprietary self-service applications because of the benefits it provides as an open standard.

Leading Authorities

Open standards are not created or owned by one specific company. Instead, they are developed by groups of people who are experts in their respective fields, who study the needs of the market and work together to determine how those needs can be met in a proficient and cost-effective manner. Standards continuously evolve and are generally maintained by sponsoring, non-profit organizations such as:

- **American National Standards Institute (ANSI)**, which coordinates the development and use of voluntary standards in the United States and represents the needs and vices of U.S. stakeholders in standardization forums around the globe. The institute oversees the creation, promulgation and use of thousands of norms and guidelines that directly impact businesses in nearly every sector¹.
- **International Telecommunication Union (ITU)** is an impartial organization within which governments and the private sector work together to coordinate the operation of telecommunication networks and services, and advance the development of communications technology².
- **The Internet Engineering Task Force (IETF)** is a large, open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet³.
- **World Wide Web Consortium (W3C)** develops interoperable technologies – specifications, guidelines, software and tools – to lead the web to its full potential. W3C is a forum for information, commerce, communication, and collective understanding, and an international consortium where member organizations, a full-time staff and the public work together to develop web standards⁴.

¹ The American National Standards Institute (ANSI). http://www.ansi.org/about_ansi/overview/overview.aspx?menuid=1

² International Telecommunications Union (ITU). <http://www.itu.int/aboutitu/overview/purposes.html>

³ The Internet Engineering Task Force (IETF). <http://www.ietf.org/overview.html>

⁴ World Wide Web Consortium. <http://www.w3.org/Consortium/>

⁵ World Wide Web Consortium. <http://www.w3.org/TR/2004/NOTE-ws-arch-20040211/>

⁶ Wikipedia. <http://en.wikipedia.org/wiki/VoiceXML>

⁷ World Wide Web Consortium. <http://www.w3.org/TR/voicexml20/>

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About Aspect

Aspect provides software and consulting services that turn the potential of unified communications into real business results across the enterprise and in the contact center. Applying 35 years of insight and experience, Aspect helps more than two-thirds of the FORTUNE Global 100, as well as small and medium enterprises, power their business processes with communications. For more information, [visit www.aspect.com](http://www.aspect.com).

