AVST SPOTLIGHT

EDUCATION ISSUE

1,100+ Campuses Build Bridge to Digital Future

SDSU Turns to AVST Reaps High ROI

Case Study: University of Toronto’s Cloud Strategy

Is SKYPE FOR BUSINESS in Your Future?
Welcome to TeamQ™ – the innovative informal call center solution from AVST that facilitates collaboration among workgroups. Your campus has many teams fielding calls, solving problems, juggling multiple service requests. These busy knowledge workers include the admissions office, IT help desk, financial aid office, counseling office, health services clinic, library – to name a few. TeamQ delivers high ROI by giving teams access to vital call center features at a fraction of the price of other solutions. Think UCD, ACD, agent desktop control with informative screen pops, supervisor interface, reports and much more.

- Essential Call Center Features
- Affordable Price
- Goes Mobile – Delivers Calls to Deskphones, Mobile and Softphones
- Enables Agents to Multitask and Control Their Call Workflow
- Works with All Major PBXs
- Supports up to 250 Agents

Campus communications just got better.

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Welcome to SPOTLIGHT

Education and the World of Digital Business

It’s fitting that we devote this issue to the education sector, one of AVST’s largest markets. We’ve been in business for more than 30 years and currently serve over 1,100 education customers, including the largest public and private universities in the United States. Find out why so many esteemed institutions rely on AVST’s unified communications (UC) solutions by reading my personal blog found on page 10.

To help tell our story of commitment to the education sector, inside this issue the University of Toronto and San Diego State University both provide insight into their evolution to the private cloud and mobility. These case studies (pgs. 6 and 20) illustrate how higher education is aligning with key IT technology trends. AVST wholeheartedly embraces this proactive strategy. Find out what’s on tap for us in 2015 (p. 5) and learn what lies at the heart of our CX-E solution (p. 8).

Leading industry analysts also weigh in on AVST. Jay Lassman, an independent consultant whose UC industry experience includes 14 years with Gartner, Inc. reviews our new TeamQ™ informal call center (p. 14) and reports on how it can help organizations save up to 77 percent on monthly costs compared to a formal call center solution. Dave Michels, an independent industry analyst and consultant, reveals why AVST’s Atom® is fast becoming the preferred virtual personal assistant for organizations of all sizes (p. 18).

Inside this issue we also track our latest integration with Microsoft Skype for Business (p. 12), and we offer up a handy checklist of the 28 most important things to know about unified messaging (p. 17). We also make the case for hybrid cloud (p. 16) as the enterprise cloud of the future and look forward to your feedback on that topic.

Finally, this Spotlight edition wraps with a thoughtful interview featuring AVST Chief System Architect Roger Visser (p. 22). He’s a tinkerer, an art aficionado, a classic rocker and a 27-year-veteran of AVST. As you read through the pages here, I hope they open the window on how AVST is bridging organizations to the world of digital business. We look forward to helping you get there.

Sincerely,

Denny Michael
Senior Vice President of Sales and Marketing, AVST
The Bridge to Your Digital Future

Helping organizations be proactive and relevant by aligning their institutions with key technology trends lies at the heart of AVST’s unified communications solutions. Mobility, Cloud, Skype for Business, Internet of Things (IoT), Security and Consolidation are all top IT priorities for 2015. Let AVST help bridge you to the world of digital business.

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AVST SPOTLIGHT 5
San Diego State University

Turns to AVST

The campus is relying on the company’s CX-E platform to support 200,000 calls per week.

Background

With an enrollment of 34,000 students, San Diego State University (SDSU) is the largest university in San Diego, as well as the oldest and one of the largest in the 23 campus California State University (CSU) system. As a leading public research university, SDSU employs 9,600 faculty and staff with 188 degree programs offered across more than 90 schools, departments and programs.

SDSU had an outdated Octel Aria voicemail system in a distributed environment both on its main campus and in several remote locations. Once that system was announced end of life, SDSU sought to acquire a next-generation Unified Communications (UC) solution that would seamlessly integrate with its existing telephony and email system, deliver advanced mobility and business process automation capabilities and have the highest resiliency to support its high call volume. The hunt for a replacement was on.

Hearing Is Believing

As with many large universities, SDSU receives a high volume of calls. In fact, during busy times, the campus reports an average of 200,000 calls per week, with the greatest volume stemming from student services like enrollment (admissions, advising, etc.), financial aid and account services (collections, cashiers, loan disbursement, etc.). With such a high level of activity, it was essential that SDSU select a UC solution that could handle its mission-critical voice application requirements.

SDSU opened up a bid process and considered two alternate solutions in addition to AVST: Avaya® and Esna. AVST’s CX-E solution had a great reputation and came highly recommended to SDSU from trusted university peers. Additionally, CX-E had an Octel TUI (telephone user interface) that would allow for easy migration and minimal training for SDSU’s end users. There was also an extensive set of next-generation mobility and business process features offered by CX-E – all developed on a highly scalable and resilient platform architecture designed for maximum uptime. All of these attributes tipped the scales in favor of AVST.

A Smooth Transition

As SDSU had expected, the transition to CX-E was smooth and painless. Notices were sent to all faculty and staff, giving them a heads up of the upcoming cutover with highlights of the new features. Thanks to the Octel TUI, the transition was so seamless that only a handful of users signed up for the free training session. Long-time AVST reseller ACP of Carlsbad, CA helped implement CX-E and provided excellent local support during the transition.

“We reaped 4X savings in maintenance.”

Riny Ledgerwood, SDSU Director of Voice Services & ATI
CASE STUDY

“With an average of up to 200,000 calls a week, we needed a system that could reliably handle such a high call volume and provide a platform for growth. CX-E from AVST was the only solution that fit the bill.”

Kathleen Sullivan, SDSU Voicemail Administrator

CX-E – The Right Interoperability to Support UC Components in the Cloud

With CX-E, SDSU received not only an upgraded voice application solution but also an extensive list of new mobility and business process integration features. Unified messaging was on top of SDSU’s list, but the campus needed a solution that could integrate with its existing Google™ Gmail™ system. SDSU’s hybrid cloud approach to implementing UC was not a problem for AVST as CX-E was designed to deliver unified messaging to any email system (whether on-premise or in the cloud). “We were very impressed with CX-E’s flexibility to integrate with our Google Gmail email system and make messages accessible through mobile devices or a web client. It was just so easy,” said Riny Ledgerwood, SDSU Director of Voice Services & ATI.

4X Savings in Maintenance Plus Enhanced Resiliency

Another key benefit of AVST’s CX-E solution for SDSU was economics. SDSU’s maintenance costs are much lower with CX-E than its legacy solution. In fact, the university’s older Octel system was four times more expensive to maintain than the new AVST UC solution.

CX-E also provided SDSU with better options for resiliency. CX-E was implemented using a deployment architecture of three call servers and one system server. The system server is the system management and control console. It provides a centralized location for the system database as well as the message store. The call servers run the real-time applications. They are responsible for answering calls, accessing information and recording messages. By deploying multiple call servers, all integrated with a single system server, the deployment at SDSU achieves a high level of redundancy. In the event of a call server failure (or when a server is shut-down for maintenance), the remaining call servers continue to handle the call traffic with no disruption in service.

The Future is Bright with CX-E Mobility and Campus Automation Capabilities

SDSU plans to take its use of CX-E to the next level in the coming year to capitalize on its powerful speech-enabled features. First on deck is the campus-wide telephone directory, with the goal of replacing its existing directory with one that is speech-enabled. SDSU also plans to utilize Atom®, AVST’s next-generation personal assistant for faculty and staff personal productivity improvements. Thanks to the flexibility of the AVST CX-E UC platform, the faculty and staff of SDSU have and will continue to reap the benefits of a comprehensive UC solution for years to come.
Take charge and own your communications future.

San Diego State University, along with the largest public U.S. university, the largest private U.S. university, and half of the University of California campuses, all rely on AVST’s unified communications solutions. We bring educational institutions into the digital future by building best-of-breed applications on the industry’s most interoperable unified communications (UC) platform. CX-E works with the infrastructure you have today and will support whatever infrastructure you plan to acquire in the future. Now, your call control solutions, email systems, mobile devices, presence engines and data infrastructure can all work in harmony. No other UC platform offers a higher level of interoperability. CX-E allows you to make the most of your existing and future UC infrastructure – it’s UC your way.
Unified Messaging
Cloud, premise, hybrid – unified messaging delivered your way.

Personal Assistant
“What would you like to do?” Make your work life easy with Atom®.

Speech
Enable the power of speech for your organization.

Mobile Client
Secure mobile access for your business communications.

Voicemail
We reinvented voicemail for your future.

Automated Attendant
Greets and routes calls for faster resolution.

Fax
Deploy the latest in digital faxing with RightFax®.

IVR
Accelerate information flow to your business and customers.

Notification
Outbound notification for critical events and activities.

Call Center
TeamQ®, the informal call center solution for next-generation workers.
TOP 10 BUSINESS TRENDS IMPACTING EDUCATION IN 2015

1. Student Success
2. Reinventing Credits
3. Global Competition for Students
4. Rethinking Business Models
5. Retreating Political Responsibility
6. Competency-Based Education
7. Learning Analytics
8. Data-Driven Decisions
9. Consumerized Expectations
10. E-Research

Source:
Gartner Analyst(s):
Jan-Martin Lowendahl,
Terri-Lynn B. Thayer,
Marti Harris, Bill Rust

PUBLISHED: 26 NOVEMBER 2014
AVST Vice President of Marketing  
Denny Michael reflects on the education sector.

During my travels, I’ve visited with hundreds of professionals from the education sector. AVST regularly participates in industry conferences, as well as other education-oriented events. The organizations and opportunities are geared toward IT professionals who serve schools, colleges and universities. Our participation with them reinforces AVST’s commitment to education.

AVST has been in business for more than 30 years and currently serves over 1,100 education customers, including the largest public and private universities in the United States. Our reputation in the education field is backed by our ability to connect new and existing technologies, so schools and universities can keep their critical IT components in place while at the same time deploying new advanced unified communications applications. Today, educational institutions have mobile, cloud and security initiatives before them, and AVST offers innovative solutions to address them. With people, businesses and things communicating, transacting, and sharing data with each other, a new digital world has become a reality.

When I consider the number of educators and their IT counterparts that I’ve talked to, I’m amazed. Most of these people know who AVST is, they use our solutions, and they continue to engage with us to ensure their future needs are met. It’s humbling to know that, in some way, AVST has an impact on education. We aren’t teaching vital lessons, we aren’t working toward curing disease in a university lab. Our passion is to build unified communications solutions that transform productivity. We want to ensure that students, faculty and administrators communicate better. What we do is a little more complicated than that and arguably less noble, but it’s AVST in a nutshell.

Thank you to all the universities, colleges, and K-12 institutions that have trusted our unified communications solutions for more than three decades and have allowed us to join in what is a very honorable calling. ◆
Microsoft’s increasing presence in the enterprise unified communications market has many companies now looking very closely at Skype for Business as a PBX. Some businesses have moved or are considering moving to Skype for Business as their sole PBX solution. Others are integrating Skype for Business into their existing PBX environment for use by specific departments or branch offices.

Many companies already use Skype for Business for the rich unified communications offerings, including presence, instant messaging and conferencing. However, during the evaluation of using Skype for Business as a complete enterprise PBX, companies are turning to AVST to enhance the Skype for Business offering.

To the right are eight areas where AVST can help organizations crossing the bridge to make Skype for Business their PBX.

AVST has been a Microsoft Partner for more than 10 years and a technology partner for over 20 years.

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<th>CX-E Solution</th>
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<td>Keeps voice messages out of Exchange or ability to restrict forwarding of messages in Exchange</td>
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<td>Compliance concerns</td>
<td>Maintain separate message store with unique retention policy</td>
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<td>Reluctance to change user experience/ minimize retraining</td>
<td>TUI emulations to match existing user experience</td>
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<tr>
<td>Migrate to Skype for Business Enterprise Voice over time</td>
<td>Simultaneously supports up to 10 telephony integrations; centralization across multiple locations/time zones and PBX platforms</td>
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<tr>
<td>Requires mission-critical voice features</td>
<td>30+ years of feature development: Delivers robust voicemail, automated attendant, IVR and call center</td>
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<tr>
<td>Flexible automated attendant menus</td>
<td>Maintain different business hours, operators, holiday schedules, for each department and location</td>
</tr>
<tr>
<td>Users have more than two phone numbers</td>
<td>Users define multiple phone numbers including home, alternate office, temporary numbers and more</td>
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<tr>
<td>Self-service access to company information</td>
<td>Custom IVR scripts can access company data and speak the information to callers, or automatically send via callout, text or email</td>
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EVALUATING THE ROI OF INFORMAL CALL CENTERS

By Jay Lassman, Independent Research Consultant

Summary
AVST’s TeamQ™, an innovative informal call center solution, delivers traditional call center functionality at a fraction of the cost when compared to formal ACD solutions. Analysis reveals TeamQ reduces software and maintenance costs by as much as 77 percent.

What is an informal call center?
The informal call center is a simplified version or subgroup of a full-blown contact center solution. Informal call centers typically consist of workers who manage their own time, work flows and processes. Business areas that benefit most include sales, service or technical support functions, particularly when requirements tend to be well delineated, recurring or cyclical. Goals of informal call centers include:

- Improve customer access to company subject matter experts
- Enhance internal help desk and HR services with efficient call handling and shortened wait times
- Route calls to groups of people rather than individuals
  - Improve call completion rates
  - Eliminate need to hunt for the right resource

Agents control workflow – pull calls, reserve calls, redirect calls and decide when available.
Why TeamQ?

TeamQ capitalizes on call handling, call routing and other functionality inherent in AVST’s CX-E platform, which is a full-feature enterprise-class unified communications solution that has substantial global penetration in virtually every vertical market. TeamQ’s capabilities include:

- Group call queuing such as ACD and UCD capabilities
- Agent desktop control
- Screen pops
- Push and pull modes
- Supervisor interface
- Reports

TeamQ is designed to give agents control of their call workflow. Agents decide which call to pull first, indicate when the call is complete, reserve a call if they are already on another call and redirect a call to someone else.

The solution can be cost-effectively deployed as part of an enterprise-wide messaging infrastructure, or it can supplement an existing formal contact center. It’s also important to point out that, because it runs on the CX-E platform, TeamQ is compatible with virtually all telephony and UC core platforms from vendors such as Avaya, Cisco, Microsoft, Mitel, ShoreTel, Alcatel-Lucent, Unify, GENBAND, Broadsoft and more.

Conclusion

The table above indicates that the annual savings for TeamQ (per agent) compared to a formal call center solution represents 77 percent. The savings give organizations the option to provision more TeamQ licenses or significantly reduce call center expenditures. Either way, TeamQ yields a significant cost advantage for agent staffing requirements versus a formal call center. Just as important, TeamQ includes a CTI capability, which eliminates the expense associated with provisioning a separate link that is usually required to support integration with most telephony systems.
When it comes to unified communications (UC), there’s no doubt that hybrid cloud deployments are a reality today. In fact, many medium to large enterprises have already undergone hybrid cloud deployments. At one time it was thought that the hybrid cloud was merely the first step to a full public cloud UC deployment. But times have changed. The reality is many enterprises view the hybrid cloud as their final destination.

A hybrid cloud deployment for UC – call control, email, messaging, conferencing, fax, contact center, etc. – is appealing because of the wide array of options it presents to businesses. Sensitive components can live behind the corporate firewall, while other elements take advantage of the elasticity and quick provisioning of the public cloud. In addition to protecting important corporate data, hybrid cloud deployments can leverage existing IT infrastructure investments and protect ROI. Many corporations have made significant investments in their on-premise technology and are reluctant to discard assets just to gain benefits of the public cloud.

The hybrid cloud serves the needs of more companies than any single cloud model (private or public) alone. But how do businesses determine which elements of their UC solution stack should remain on-premise and which should be provisioned from the public cloud? Consider each UC element and answer the following questions:

- Are there corporate governance or confidentiality concerns regarding corporate data?
- Is there a dedicated IT staff to support specific UC applications?
- How critical is the reliability of the communication solutions?
- How variable is the usage?
- Are there significant investments in on-premise UC equipment?
- Is CAPEX or OPEX the best economic choice for the specific UC solution?

Finally, when investing in new UC solutions, choose products that promote open standards and interoperability, regardless of whether they are deployed on-premise or in the cloud.

In a world where technology is constantly evolving and innovation drives change, flexibility is key. The hybrid cloud is the ultimate state for enterprises.
Looking to Deploy Unified Messaging?

AVST’s experience designing and delivering unified messaging has led to this list of critical considerations for evaluating UM solutions.

Interoperability
- Compatible with all telephony systems?
- Support both TDM and IP telephony environments simultaneously?
- Integration with all email systems (premise and cloud): Microsoft® Exchange, Office 365™, Google™ Gmail™, Lotus® Notes®, Novell® GroupWise® and any IMAP4 compliant email system?  
- Support for non-Windows clients (Mac, Linux, etc.)?

Architecture
- Voicemail and UM users on a single system?
- Support client-based UM users (dual store, email message on one server, voice and fax messages on a separate server)?
- Support server-based UM users (single store of messages on email server)?
- Support secure (web-based access) UM users?
- Support simplified UM users?
- Support a mix of UM architectures (e.g. server and client) on a single system?

Capability
- Meet user requirements to access UM via the desktop, web, phone, and any mobile device?
- Speech access to messages?
- Voicemail-to-text transcription?
- Desktop client support for local languages: Danish, Dutch, English, Finnish, French, German, Italian, Norwegian, Spanish, Swedish?

Enterprise Impact
- Support for adding and maintaining users from Active Directory?
- Does system modify the Active Directory schema?
- Different types of codecs based on customer needs?
- Support a message buffer (cache) to reduce impact on LAN/email?
- Offer web access using a variety of web servers and clients?

Secure Message Access
- Administrator ability to restrict certain users from saving copies of the message locally and/or restrict from forwarding messages?
- Can the messages be delivered using a secure streaming technology?

Functionality During a Network Failure
- Support all call processing applications?
- Take new messages?
- Support user greetings?
- Support the same user interface?
- Allow users to send new messages?
- Allow users to delete, forward and save new messages?

Cost
- Is total cost of ownership in line with my company objectives – cost of licenses, annual maintenance, additional hardware or software required to deploy UM?
“The use of virtual personal assistants is just beginning; assume that future interactions with your customers will be through virtual personal assistant technology.”

Gartner
A lot of what you see today is various vendors playing leapfrog with various new features and capabilities. Be it iPad docks, virtualization, or mobile apps, a lot of the stuff is just “me too,” rather than a new twist on communications.

These are some interesting innovations these days, one of them being Atom® from AVST. Atom is a fresh take on the personal assistant. There have been various attempts at this over the years, from Wildfire to Siri, but AVST is using it to empower the primary user as well as the caller. It is effectively acting like a 24/7 office manager that understands the context of a given situation.

Atom is really more of an architecture than a product. Initially, it will tie into AVST’s CX series of products, but that will expand as will its sources of information. Atom addresses the challenge of giving the caller more information (context) to determine the shortest path to resolution. For example, is it better to leave someone a voicemail or seek an alternative contact? The answer depends on the situation, and most people don’t regularly update their outgoing voicemail greeting with updated availability information.

Atom notes the primary user’s digital trail to ascertain context. It knows your location either from the geo-awareness within the mobile client (Android and iOS), or by sensing which Wi-Fi network is near. It also checks your presence status on Skype for Business. It views your calendar. It uses this information to ascertain the best way to process incoming calls. If your presence is in “do not disturb,” it will route incoming calls to your voicemail box. Atom is in sync with your calendar, and can notify callers you are “in a meeting and will be back at 10 a.m.”

Atom knows your location, business contacts, messages, and presence status. That might sound a bit creepy, but keep in mind AVST isn’t an advertising company – this awareness is kept within an organization’s private implementation.

It also has a rich UC feature set that includes unified messaging, hands-free speech recognition, single number reach, and mobile number protection. Atom provides unified messaging and works with a wide variety of email systems (premise-based and public cloud) and integrates with every major voice platform.

As a personal assistant, Atom can provide primary users with a speech interface to their own information. It uses a Nuance speech recognition engine to interpret spoken requests. For example, since it knows your contacts, it can “call John Smith.” Atom can “get new messages” and summarize the day’s appointments with “get my calendar for today.” Plus, Atom is multi-lingual.
Canada’s Largest University Selects AVST
Achieves Infrastructure Optimization Through Private Cloud Deployment

BACKGROUND
Established in 1827, the University of Toronto is Canada’s largest university, recognized as a global leader in research and teaching. Spanning across three campuses, with nearly 11,000 distinguished faculty and staff members and 72,000 students, the University of Toronto relies on resilient solutions to collaborate and communicate with its students, alumni and faculty every day.

CRITICAL OBJECTIVES
The University of Toronto was well aware of the benefits that deploying next-generation Unified Communications (UC) applications could bring, namely: increased productivity, accessibility and reduced operating costs. However, delivering these benefits would require careful planning. After a stringent five-month evaluation process with several leading Unified Communications providers – including Avaya®, AVST and Cisco® in the mix – the team, led by U of T Director of Telecommunications Debbie Stewart, selected AVST as its solution for success. AVST, was selected as the winning team that would best solve the University of Toronto’s critical organizational objectives:

- Centralize Messaging Across Three Campuses
- Achieve Continuous Application Uptime
- Replace Legacy Octel® Voicemail System
- Deliver Minimal Disruption and Retraining to Nearly 11,000 Faculty and Staff Members
- Deploy Unified Messaging to a Multiple and Evolving Email Landscape
- Integrate into Existing and Future Communications Environment for Investment Protection

CONSOLIDATED INTO A PRIVATE CLOUD FOR INFRASTRUCTURE OPTIMIZATION
Today, the University of Toronto has successfully centralized AVST’s CX-E UC platform into a private cloud model to reduce total cost of ownership (TCO). The university deployed CX-E within its main data center at the St. George campus, and it serves up the applications across the network to outlying locations in Scarborough and Mississauga.

“AVST’s unique ability to deliver unified messaging to any email environment gave us the ability to control our future.”
Bob Sawada
Telecommunications Manager, The University of Toronto
With the large volume of call traffic that flows through CX-E, the University of Toronto needed a resilient platform that would continuously answer phone calls, route calls and take messages 24/7. To achieve this objective, CX-E multi-server architecture was deployed; it consists of a System Server and multiple survivable Call Servers at each site. “AVST was the only solution that could scale multiple Call Servers and deliver the reliability that we needed,” said Debbie Stewart, Director of Telecommunications at the University of Toronto.

**IMPROVED CALLER EXPERIENCE**

With hundreds of diverse departments, such as admissions, alumni, campuses and libraries, the University of Toronto needed the most sophisticated and advanced Call Processing solution in the market today. With three decades of experience, AVST’s CX-E was up to the challenge. Today, CX-E is configured with over 300 automated attendant menus that route over 450,000 calls to the appropriate departments.

**MINIMIZED TRAINING TO 11,000 FACULTY AND STAFF MEMBERS**

The University of Toronto had relied on Octel for its voicemail and call processing requirements since 1990, but the university was now ready to deploy a next-generation UC feature set. “We still wanted some of the same functionality that our faculty was familiar with: they know how to delete a message, they know how to forward a message, and they know exactly which keystrokes to press to accomplish these tasks,” Stewart said. AVST mimics the command structure of the Octel telephone user interface, which minimized the retraining required for the university’s nearly 11,000 faculty and staff members.

**FACULTY CONNECTED THROUGH UNIFIED MESSAGING**

The University of Toronto utilizes various email systems and versions. AVST’s ability to deliver unified messaging to multiple email systems, both premise-based and in the public cloud, provided the university the flexibility of choice for the future, regardless of what email system is used today or tomorrow.

“CX-E is a workhorse – it takes 450,000 calls a month with over 300 automated attendant menus – and doesn’t even break a sweat!”

Debbie Stewart
Director of Telecommunications,
University of Toronto

**KEY TO SUCCESS: “PARTNER WISELY”**

“Partner wisely,” said Stewart. “Our key to success and overcoming any obstacles that came up was that we always felt AVST, Smart IP and the University of Toronto were one big team. It was by far the smoothest cutover I have experienced in all my years working for the University of Toronto.”

AVST’s solutions are deployed in more than 1,000 universities today. AVST’s unrivaled interoperability is highly valued by institutions that have made substantial investments in telephony, email, and other critical IT infrastructure components. AVST delivers productivity-enabling mobile, voice and business process applications – all while preserving customers’ existing and future IT investments. Protect your past and define your future with AVST.
How long have you been with AVST? 27 years

What does your work entail? I would divide it into two major parts: investigation and implementation. Investigation involves identifying what needs to be changed, then growing and expanding an idea or feature and determining the best way to implement or change it so the product moves forward while not breaking existing familiar functionality. The implementation part is really the nuts and bolts of defining the details and often actual code implementation.

What is your background (training, education)? B.S.E.E.T and M.S.E.E. and various CE classes along the way have allowed me to be involved in several technologies, including digital circuit design, integrated circuit design, signal analysis, digital signal processing algorithm design, speech recognition research, neural net research, engineering management, and of course software design.

During your time with AVST, what are some projects you are most proud of? Where do I start? Here are three. First, I really found the NTDIU (Northern Telecom Digital Interface Unit) hardware design to be gratifying, since it allowed me to apply several skills related to black box design. Second, redesigning the product architecture from the bottom up in CX 6.0 was quite challenging, but allowed CX to connect with nearly every PBX out there and have an application framework. Finally, introducing the multi-box architecture in CX 8.0, while also supporting speech recognition, allowed us to deliver a platform that is second to none in the industry.

What is the best part of the job? Probably the variety of tasks is the best part. I still enjoy coming to work every day. While there are often new ideas and features to explore, sometimes you can look at something and think “this is pretty mundane” or “this is just like what I did five years ago.” That’s the signal to look at it in a critical manner and ask, “is there a better and different way to do this?” Technology and ideas are advancing all the time. There are patterns everywhere, seemingly in unrelated areas. Our product is broad enough that many of these technologies, ideas, and patterns have direct applicability and benefits if we just pay attention.

Most challenging part? First, avoiding the impulse to needlessly over-engineer a feature or idea; second, supporting automatic upgrades without loss of features or data; and finally, remembering to go home at night.

Why have you remained at AVST? First, I love to understand how things work and how to make them work even better. Even as a kid I was compelled to take things apart and put them back together. Over the years, AVST has provided me with the culture and environment to disassemble, tinker, reassemble, and see new challenges; solving them in interesting ways. Second, the people are great! Each one has a particular expertise that is just what we need to continue to produce, market, and sell great products. One thing I have really appreciated over the years about AVST is that we honestly value each person in each job. This commitment is demonstrated by giving each person important responsibilities as fast as they will take them on, and then assuming they will come through. People here are not afraid to ask questions, pull up their sleeves, try new things, and help out others at the drop of a hat. It starts at the top. Historically, when we have backed away from that commitment, we have slipped backward.

What do you do in your spare time (hobbies/interests/etc)? My wife Linda and I frequent museums, especially art museums, whenever we can. I love all art, but especially impressionist art. We frequently attend the symphony, the ballet, the theater, and concerts of old 70s and 80s rock bands, most recently Fleetwood Mac, and Crosby, Stills and Nash.
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