The Association of Theological Schools
Report to the ATS Leadership Education Council
Information Technology and Education Technology
Research Synthesis and Insights

Table of Contents

Introduction

The Association of Theological Schools (ATS) designed this research project to understand the current natures of both the Senior Information Technology role and Senior Education Technology role at the member schools with particular attention to how these roles have changed over time. From this better understanding of current technology leadership, the intent is to forecast the needs of leadership in the future and to identify the needs that should be addressed in an updated curriculum for leadership education at ATS.

The Senior Information Technology (IT) role and Senior Education Technology (EdTech) role are administered in a staggering gamut of ways within theological schools including having a sole person fulfilling both roles (Dual-Tech) or multiple persons in separate departments.

Very broadly speaking, the IT role covers the areas of administration of the computer network (hardware and software), technical systems, data management, telecommunications, user accounts, and desktop support.

Also very broadly speaking, the EdTech role covers learning technologies that would be used in teaching such as a learning management system (LMS) or other distance learning systems, supporting faculty with instructional design, classroom technologies, and creating course materials with a focus on pedagogy.

The research team consists of

Research Lead and Design by Deborah H.C. Gin, MDiv, PhD | ATS Director of Research and Faculty Development

Qualitative Interviews and Analysis by Ariana Monique Salazar, MDiv/MA, Research Analyst, Pew Research Center

Quantitative Survey and Analysis by David C. Wang, Th.M., Ph.D. | Editor, Journal of Psychology and Theology | Associate Professor of Psychology, Rosemead School of Psychology, Biola University

Synthesis and Insights by Julie Newton | Senior Director of Information Technology | Austin Presbyterian Theological Seminary

As the subject matter expert and role advisor for this project, my insights and perspective are formed by my range of professional experiences. Information Technology is my chosen vocation for over 23 years including serving at 2 seminaries for more than 16 years altogether.

Beyond academia, I have a broad perspective gained from technical roles at start-ups, as a technology consultant, and non-technical roles in sales, marketing, event planning including at an association. My management experience is from diverse environments from small organizations in 2-person departments and from a larger organization with 30 direct reports on my staff.

In addition to a business degree, I have earned technical certifications as Microsoft Certified Professional (MCP), Certified Information Systems Security Professional (CISSP) and Certified Cloud Security Professional (CCSP).

For ATS, I have served on the ATS Technology in Theological Education Group (TTEG) committee since 2015, where we plan programming through-out the year and coordinate our annual conferences.

Methods

The research design included both a quantitative survey and qualitative interviews to gather data based on key research questions. The research questions were developed based on topics created for the larger ATS Leadership Education Study that began in 2020 to understand six leadership education groups—CEOs/Presidents, Chief Academic Officers/Deans, Chief Financial Officers, student life personnel, development officers, and technology leaders.

The quantitative survey was conducted in December 2020. It had an excellent response of 110 out of 300 invited to participate based on their roles. The demographics of the respondents were overall consistent with the demographics of ATS, as can be seen in detail in Appendix A.

The qualitative interviews were conducted to explore deeper into the research questions. The 26 interviewees were chosen from the larger 110 survey group to gather a representative demographic sample across all characteristics of ATS member schools. Interviews were conducted with IT, EdTech, and Dual-Tech leaders between January 5, 2021 and February 26, 2021.

As you can see in more detail in Appendix B, interviewees are 42% IT leaders, 35% EdTech leaders, and 23% are those who serve in both capacities ("Dual-Tech") at their institutions. The racial composition of the interview sample is White (69%), Black (12%), Asian (12%), or Other (8%). Along gender and age lines, from the interview sample, men or people age 50 and older are somewhat more likely to be IT leaders than women and younger adults. Meanwhile, younger leaders are likely to serve in EdTech positions.

The institutions represented in interview data are evenly distributed across US geographical regions including Puerto Rico and a few Canadian institutions. The schools tend to have doctoral programs (77%) and are stand-alone institutions (73%). The institutions represented are mostly mid-sized (35%) or large (58%). About a third of the institutions represented in the sample are independent (35%) and are about half are denominational (54%) with 50% of the institutions specifically affiliated with the Mainline tradition, 38% with Evangelicalism, and 12% are Roman Catholic or Orthodox (see Appendix B).

The sample is also considered in light of economic indicators reported to ATS. The vast majority of institutions (81%) are financially stable or better in terms of their primary reserve ratio.

Format of report

This report is organized around 3 key aspects of technology leaders: 1) Current Nature of the Roles, 2) What's Changed and 3) Look to the Future. In each aspect, research questions were utilized to focus on themes. Research findings are discussed with offered insights for ATS to consider on each aspect.

Due to the range of IT and EdTech responsibilities, some of the research findings are applicable to both groups or only one. When the findings are similar, they are discussed together as "technology leaders" and when the findings are divergent, they are discussed separately as IT, EdTech, or Dual-Tech.

Throughout this report, all respondents' names are pseudonyms and other identifying information has been generalized or suppressed to maintain respondent privacy.

These are the primary research aspects and questions:

1) Current Nature of the Roles
- Attaining / Background / Pathways to Role
  - *What are the pathways to the role?*
- Effectiveness Levels
  - *What predicts effectiveness in the role?*
  - *What leadership models have been most effective?*
- Responsibilities
  - *What is the nature of the work (including doing the work of multiple roles)?*
  - *How is it distributed?*
  - *Relationships to other roles?*
- Impact on Organizational Change
- Resources / Budget
- Satisfaction Levels
  - *What predicts satisfaction in the role?*
  - *How adequate is compensation?*
- Retention
  - *How difficult was it to find/recruit/retain team members?*
  - *What are the common retention durations?*
  - *What are the strongest predictors staff actively looking for other jobs?*

2) Changes to the Roles
- *How has the role changed?*
- *Changes during own duration of service?*
- *Changes during COVID?*

3) Look to the Future
- Programming Needs
  - *Where are the preparation gaps?*
  - *How should ATS change its programming in order for it to be the "go to" resource for you?*
- Future questions

Current Nature of the Roles

Our research clearly shows there is great variation in theological schools for titles, roles or where technology is managed within the organizational structure.   The Senior Information Technology (IT) and Senior Education Technology (EdTech) roles and responsibilities are very dissimilar from other theological schools including some having a sole person fulfilling both roles or other schools having multiple persons in separate departments.

To illustrate this, according to the survey, there are 27 substantially different titles for 57 persons reporting as the Senior Information Technology role at their organization and 38 substantially different titles for 63 persons reporting as the Senior Education Technology role at their organization.

In our interviews, some technology leaders described a variety of duties that would be considered outside of a technology role including serving on faculty, library management, accreditation compliance, Title IX duties, and more. Some of these technology leaders include VPs with a wide range of responsibilities that include overseeing the IT department and/or external IT consultants; or smaller schools with many cross-discipline roles assigned to the same person.

This is confirmed during ATS IT/EdTech conferences as technology leaders discuss their varied roles. As addressed below, our research supports that this may be directly related to the non-standardization of the pathway to a technology leader position at a theological school.

Attaining / Background / Pathways to Role
What are the pathways to the role?

There is no one pathway into a technology leadership position in seminaries today. Some, like EdTech leader Leah at a large Mainline school, work their way up the ladder, starting at their institutions even as student workers. Many interviewed credit their technical skills or their experience in higher education with their attaining their current role.   Technical training in engineering, library science, or computer science are present in the interview data, especially among older respondents (age 40 and over), but religion-related fields are more widespread, especially among EdTech and Dual-Tech administrators.

The most recent previous positions held by these leaders help illuminate part of their pathway. IT leaders are more likely to come from a for-profit business (31%) or HigherEd (20%) compared to the other C-level positions at theological institutions. Only CFOs and CDOs were likely to have worked in the business sector at their previous position. EdTech leaders are most likely to be from another HigherEd institution (31%) or directly from graduate theological education (23%).

The hiring process was found to be similar between the technology leader survey participants. Approximately 50% were invited to accept the job (without an application and interview process). The traditional job hiring process (with application and interview) was the pathway for only 25% of our leaders. And another 20% were asked to apply and then were hired. Illustrating this non-traditional hiring theme is one Senior IT respondent from a small denominational school who said this isn't their primary role: the organization "just added this to my job". It is not uncommon to not have a predecessor in their role. It is noteworthy how many candidates are internal or hand-picked rather than selected from a public hiring process.

Relevant technical degrees or certifications are not required for hiring, according to many of our interview respondents (see fig. 1). 44% have no formal education for the work they do. Meanwhile, about a third (31%) of IT, EdTech, and Dual-Tech leaders have at least some technology education. Just 13% of technology leaders have at least some training in education, and these chiefly fill EdTech positions. While academic journeys into senior IT, EdTech, and Dual-Tech positions may seem unrelated to their professions, the one thread that unites a large majority of technology leaders (75%) interviewed is having some background in theology.

FIGURE 1

More than academic training, work experience matters most for the career trajectories of technology leaders (see fig. 2). Across IT, EdTech, and Dual-Tech roles, experience leads them to their current position. Just over 40% of each group said their skills were the primary reason they attained their position. After their skills, the EdTech leaders said their education was the most important whereas IT leaders attribute their jobs to their innate abilities.

FIGURE 2

IT
What has helped you attain the current role you have?

Growth and development of skills	46%
Innate abilities	37%
My education	30%
Effectiveness in prior leadership role	26%
Personal determination	21%
Someone who advocated on my behalf	18%
Support and mentoring I have received	14%
My networks	14%
Recognized educational leader	11%
Other	2%

EdTech
What has helped you attain the current role you have?

My education	43%
Growth and development of skills	41%
Innate abilities	24%
Effectiveness in prior leadership role	24%
Someone who advocated on my behalf	22%
Recognized educational leader	16%
Personal determination	14%
Support and mentoring I have received	14%
My networks	11%
Other	5%

When asked about professional mentors and advocates in the survey, there was a rough 60/40 split between those without mentors and those with mentors. For IT leadership, there is no gender difference between the recipients of the mentorships but the mentors were overwhelmingly male (79%). Overall, EdTech were slightly less likely (5%) to have mentors and slightly more likely to have female mentors. This may play out because there were more female EdTech respondents to the survey than female IT leaders.

Insights to ATS: When considering programming specifically for tech leaders who are new to Higher Ed, theological education and/or leadership, program design is made difficult by the disparate nature of the technology leadership roles at the institutions and variety of paths taken to attain their roles. Institution-level orientations at ATS schools would assist technology leaders understand the big picture and organizational culture to be able to contribute meaningfully faster.

Cohort groups would also be beneficial at the early stages of their service. If ATS offered coordinated cohorts by size or school type, that would be welcomed. Services like BrainDate could be effectively used to identify connections that tech leaders would find worth their time.

Effectiveness Levels

What predicts effectiveness in the role?

What leadership models have been most effective?

Effectiveness in a technology role is crucial, and we explored the traits that are considered necessary for effectiveness in the technology leader's roles.

In order to get a sense of what technology leaders feel is necessary for longevity in their positions, they were asked a hypothetical question: "If you were hiring someone for your position, what qualities or skills would you look for to ensure their effectiveness in your role?" By far, most stated responses relate to interpersonal skills and other character traits.

Unsurprisingly, technical skills were also reported by multiple interviewees as important for effectiveness in their position. Dual-Tech leader Abraham and others feel, "A broad range of technical abilities, everything from resetting passwords to running cables to writing some basic scripting knowledge" would serve his replacement well.

According to many technology leaders, it is the non-technical skills that help them be most effective in their positions. The vast majority of IT and EdTech leaders in theological schools indicate that their jobs are more interpersonal than technical. Some refer to qualities such as friendliness, customer service or "bedside manner." Others discuss it in terms of communication skills—speaking and writing well or listening and seeking to understand. Lydia, an IT leader explains, "My job really is bridging the gap between everybody else on this campus, executive leadership, deans, all these other people, and [IT]." Patience also came up as a desirable quality to manage workloads, for training faculty and staff in technology, and for supporting users.

QUALITIES FOR EFFECTIVENESS

Technology leaders mentioned many interpersonal traits or skills that are important for effectiveness in the long term for their roles.

- Ability to explain clearly
- Adaptability to constant change
- Clear written communication
- Collaboration
- Creativity
- Cultural sensitivity
- Customer service (friendliness)
- Flexibility
- Leadership
- Listening skills
- Patience
- Strategic Planning
- Understanding business
- Understanding pedagogy

When asked which aspects of their backgrounds best prepared them to do their jobs well, many pointed to project management experience or explained that experiences with vendor management, business negotiation, and problem-solving leadership help them do their jobs well today.

EdTech leaders most identify with the statement "I have helped my institution innovate and apply novel ideas to more effectively achieve its goals". This suggests that creativity is prized in the EdTech side, where IT leaders were slightly more likely to choose to identify with the statement "I have led my institution through significant change" and less likely with the former statement.

Responsibilities
What is the nature of the work (including doing the work of multiple roles)?
How is it distributed?
Relationships to other roles in the institution?

Institutions of ATS address technological responsibilities in different ways. It is unsurprising that in larger schools, technology leadership roles are more defined like you would see in similar-sized companies in the private sector. In smaller schools, there is more overlap with responsibilities not considered to be IT or EdTech (such as spiritual formation, fundraising, grant writing, library services, teaching, and institutional effectiveness). For schools that heavily rely on 3rd parties to provide technology services, there is more management of the managed service provider (MSP) or consultants.

In the case of Elizabeth, a Dual-Tech leader at a large Evangelical school, responsibilities were collapsed under one roof. She created a stable organizational structure in her department that allows her to manage a staff of about 20 over the disciplines of IT, education technology, media, website and marketing, and user support staff. This type of structure allows technology leaders to see the big picture necessary for organizational strategic planning.

Other interviewees spoke of added responsibilities affecting their ability to get everything done. Leah's large Mainline institution had a series of layoffs; video and website responsibilities were added to her EdTech workload. Benjamin, an EdTech leader at a mid-sized Roman Catholic seminary thinks it's unrealistic to assume that his position can continue to take on more roles. It is common to see an addition of duties in times of staff reductions without consideration of the elimination of less-essential responsibilities.

When asked who administers the technology systems, about 75% said that IT/EdTech administers all or almost all systems, 20% were a mix between

departments and IT/EdTech, and 4% said that each department administers their own system at their school. The best practice for many campuses is to have IT oversee all technology on campus as part of a comprehensive strategic plan, while empowering individual departments to administer the system if current staffing skills and resources allow.

Listed responsibilities show that only 50% of IT leadership consider technology and infrastructure for the school to be one of their top 4 areas of responsibility. Less surprising is EdTech's top 3 responses: technical support/training for faculty, EdTech software administration, and online courses and curriculum. Computer security is not in the Top 5 for 80% of IT leadership, suggesting the large range of responsibilities pushing it to a lower priority.

Relationships within the institution are widespread across campus as indicated by Rebecca, a dual-tech leader at a large Mainline seminary, "Technology nowadays, every single thing that every single person does is on us. No matter what their job is at the seminary, no matter what they do, we're supporting it."   Strictly EdTech roles may have less cross-campus reach but deeper relationships with faculty.

Impact on Organizational Change

As technology has a greater impact on every aspect of the organization, strategic opportunities to fulfill the school's mission are being missed by not inviting technology leaders to the decision-making table.

Students are the heart of every school. When technology is used correctly in an education setting, it can be used to enable student learning while preparing them for their next step in a world that is increasingly tied to technology in all aspects. Not every problem needs a technology solution, but without a knowledgeable technology leader at the decision-making table, it is difficult to discern the value of all the available options.

In all the different kinds of leadership cabinets, about one-third of technology leaders interviewed are involved to at least some extent, including 16% who serve

on these decision-making bodies. But an even larger share of IT, EdTech, and Dual-Tech leaders combined (48%) report having no involvement in executive teams. Many of these technology leaders who do not serve on executive teams mentioned they are still figuring out how to influence strategic decision-making (see fig. 3).

FIGURE 3

I have ongoing strategic conversations to ensure resources are used to fulfill the school's mission.
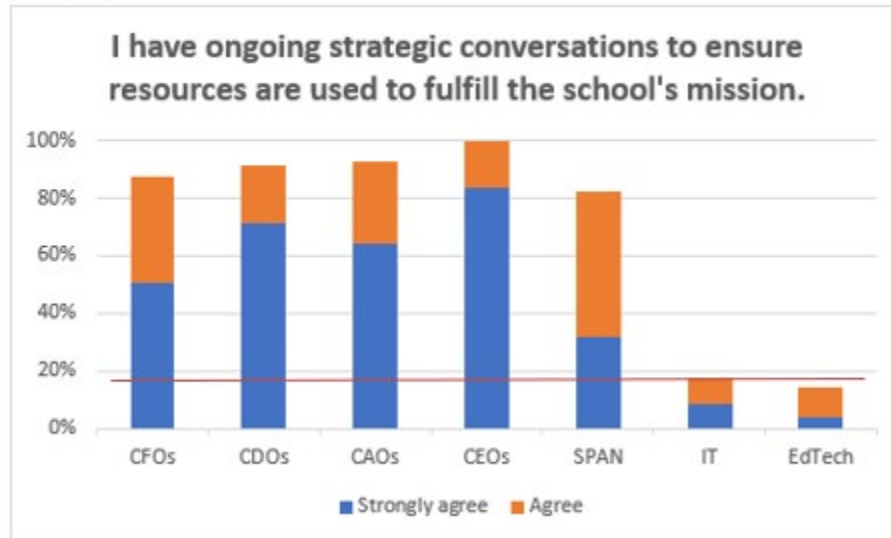
Insights for ATS: ATS might consider creating strategic planning training for various senior-level roles specifically with the perspective of technology for theological schools. It should be a hands-on instruction that includes both organizational level models and department level models. Great value would be created from a three-day working seminar where the participants leave with practical strategic plans to bring to their executive team.

Resources / Budget

Technology leaders were asked about their resources, including budget and staffing. In both areas, most technology leaders expressed a lack of resources to fulfill their technology responsibilities (see fig. 4).

In a world with finite resources, the predicament in many of our schools is a disconnect between expectations and resources based on a lack of communication and understanding. Budgets should be utilized as an indicator of the importance to the organizational mission. In addition to a clear strategic plan, a transparent budget is an excellent communication tool. It is a way of showing your priorities in a world with limited resources. If it is expected that all programs and initiatives have equal priority, then it is not possible to do justice to any of them

> "Give me enough **money**, **manpower,** and **minutes**, and we can do anything."
>
> - Capt. David Liapis, 92nd Air Refueling Wing

without having vast resources at hand.

FIGURE 4

Does IT have an adequate budget?

Does EdTech have an adequate budget?

33%

67%

■ Yes ■ No

45%

55%

■ Yes ■ No

FIGURE 5
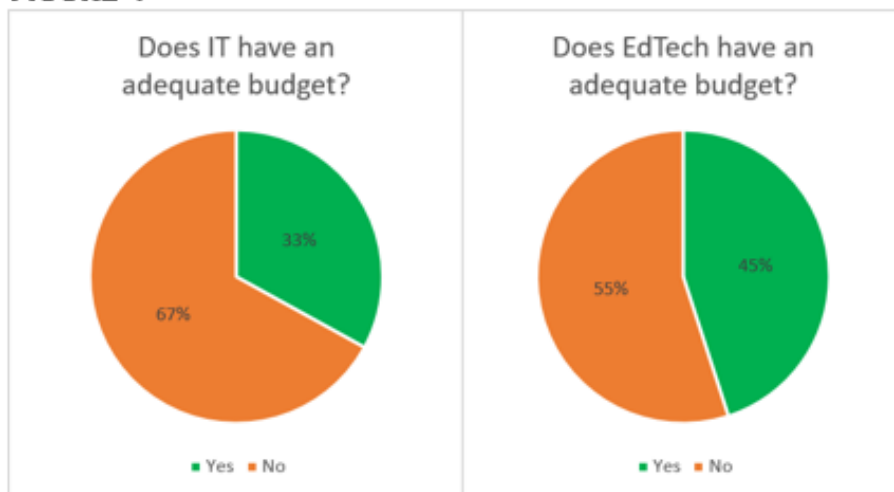
Surprisingly, technology leaders report they are not an active part of setting a designated budget for their departments. 93% of the IT respondents and 82% of EdTech said they are not involved in the budget-making process and that budgets are determined by senior-level executives (see fig. 5). Only 18% IT and 28% EdTech said they have a designated budget at all. According to technology leaders interviewed, senior management also at times makes technology-related budget or hiring decisions without fully understanding the technological field and their needs.

Do you participate in the budget-making process?

	100%
	80%
	60%
	40%
	20%
	0%

IT   Ed Tech

■ Yes ■ No
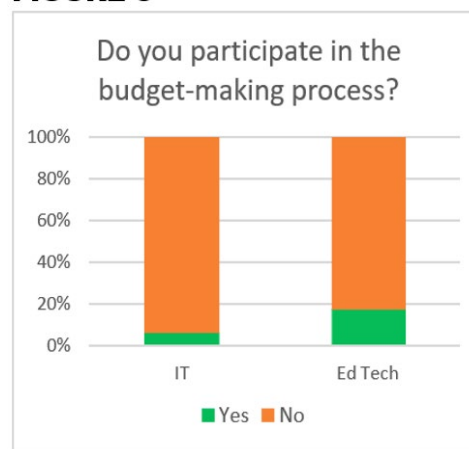
Technology leaders report advocating for new staff, particularly in the area of user support, so they can attend to more strategic or managerial responsibilities. One Dual-Tech leader from a stand-alone, mid-sized seminary expressed that staffing is one of the most pressing concerns facing his institution today, but he feels his request for more people has been ignored and has no recourse to pursue change.

Some institutions are short of staff because they fell on hard times before COVID, resulting in layoffs. Other schools simply do not have the financial resources to even hire a full-time technologist. For example, Dual-Tech leader Solomon reports that he is not a staff member at his mid-sized school, but an independent contractor who works directly with the president.

Staffing limitations create great strain on some technology leaders – some of whom are currently seeking employment elsewhere due to the disconnect between resources allotted and added responsibilities of the roles. Working in an under-resourced environment is a large source of stress according to both IT (44%) and EdTech (37%).

Outsourcing Tech Services

Many institutions contract out for technology staffing services. This may include hiring by hour consultants to provide specialized skills as needed, by project to transfer workload due to lack of in-house staffing, or by standing agreements with Managed Service Providers (MSP).

Outsourcing refers to a staffing service, which is not the same as using a cloud service (like Populi or Brightspace). Although they do normally include support, they are selling their product as Software As A Service (SaaS).

Our survey showed, on average over 9 weeks of consultant time is purchased for IT, and EdTech respondents report close to 16 weeks on average of consultant time.

Our member schools responded that they were using outsourcing for help desk support, IT infrastructure (networks/servers), online course development services, pedagogical specialists, LMS consulting, and more.

For some technology leaders using a lot of outsourcing, one of their primary responsibilities is vendor management including the back-and-forth translation of needs of a theological school to service providers. Some schools forwarded the survey to their outside consultant providing the IT or EdTech service.

25% of those surveyed are part of a consortium or a related school to a larger university that provides a range of technology services from helpdesk, network management, or student information systems.

Outsourcing has been in flux for many years with some theological schools reporting satisfaction with 3rd party vendors and others bringing the roles back in-house due to unfavorable results. This mirrors what is occurring in the private sector.

Satisfaction Levels

What predicts satisfaction in the role?

How adequate is compensation?

Interviewees were asked what they find most satisfying about their role and what they find least satisfying. Everyone found some aspect of their job satisfying, even identifying their reasons for staying in light of their salary and other factors.

From the survey, a large majority reported overall they are satisfied or very satisfied with their current job: 78% for IT and 82% for EdTech (see fig. 6).

FIGURE 6
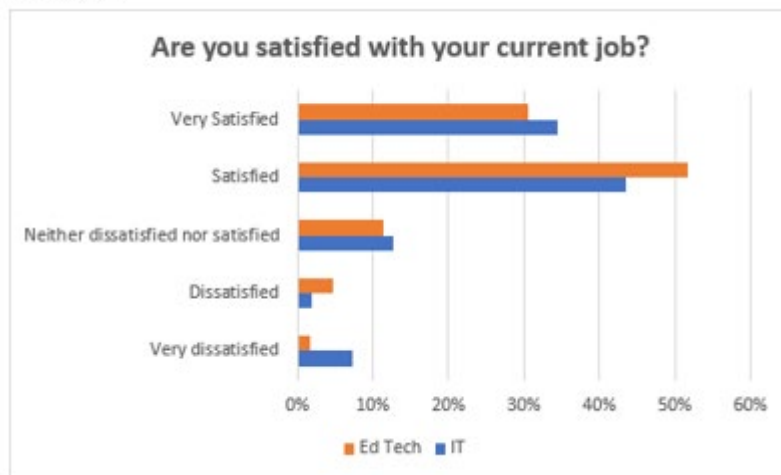
The technology leaders surveyed reported being most satisfied with:

· the work they do
· personal relationship with their co-workers
· the functioning of their work team

All technology leaders interviewed agree: the mission of their institution is the most satisfying aspect of their job. This is even true among those who report strong dissatisfaction, saying of the school's mission: "It's good. It's worthy, and as long as we stick to the mission, it's great."   The other most notable response is the positive view of the ever-changing nature of the work. Technology work draws people who are interested in learning and doing new things.

At the same time, a striking theme that emerged in the interviews is how undervalued a significant portion of technology leaders feel. This is reflected in how they report being treated: like they are invisible, like their position is of lesser importance in decision-making, and like their time does not matter much.

The least satisfying aspects for the technology leaders surveyed are:

· promotion opportunities

- professional development opportunities
- their salary
- resources available for the work

IT leaders report notably less satisfaction of salary than their EdTech counterparts.

> The interview researcher reports that Abraham does not feel like his position is considered. He describes "rogue IT"— when technology-related decisions are made without consulting him, like integrating a new software that may not even be compatible with other systems the institutions use. He is contacted with technology requests on the weekend or during late hours, like 9 pm or 10 pm. He also feels like his family is suffering as a result. "The workload is unmanageable. …Morale in our office is probably 1 out of 10."
>
> Abraham, Dual-tech leader from a mid-size school

Retention

How difficult was it to find/recruit/retain team members?
What are the common retention durations?
What the strongest predictors of staff actively looking for other jobs?

For IT, after their own leadership style the most important factors for staying in a role are the organization's leadership and satisfaction with the work they do. For EdTech, it was only their own leadership style and their happiness with their own work that was significant to predicting retention.

When retaining departmental personnel, the only positions described to have difficulties with retention are the entry-level positions like EdTech Specialist or Help Desk Support. Whereas, once the personnel depart, all positions described are considered to be somewhat difficult to fill. The ease of hiring personnel with tech skills is a highly localized degree of difficulty – it stands to reason that a school in a small college town like Boulder, CO or Bloomington, IN may have an easier time hiring than a school located in a hot technical job market like Austin, TX or Seattle, WA.

> "I'm almost there … of where we live in an area where the cost of living has really outpaced what our organization can provide."
>
> EdTech leader in a tech hot spot metro area

One EdTech leader with 5-8 people on his team stated the need for "Retaining effective employees through better salary packages and more opportunities". At smaller institutions, there is no upward mobility possible compared to larger

institutions. As a result, it is not surprising to see that promotion opportunities are the least important work feature in our survey responses since expectations on upward mobility are likely to be self-selecting during the job acceptance process.

Multiple technology leaders tie their faith to the larger purpose of their institution. Some understand the seminary's mission to be a part of the mission of the Church, which they get to contribute to by working there. Some consider their work to be a ministry—a service they do for God. To another administrator who worked her way up in the institution from being a student worker, "[T]he main reason I've stayed is that I believe in the mission of the school."

> Caleb, an EdTech leader from a very large seminary, sees special providence in his being at his institution during COVID. "I felt like the right person at the right time. …There is that element of really feeling like … God somehow orchestrated this …You feel that sense of being needed by the institution and that you really can contribute to significant change at the right time."

Changes to the Roles

How has the role changed?
Changes during own duration of service?
Changes during COVID?

There is a well-known saying, "technology is change." Technology leaders in theological schools are expected to adapt and be knowledgeable about a wide range of specialties. As the speed of change increases, so does the necessary knowledge base of the technology professional.

> "We had a change in administration and a change in some upper-level roles to people who went from looking at technology as their enemy to people who thought of technology as a tool. Maybe that's a successful change…"
>
> EdTech leader at a large Mainline institution

Technological developments in society are constantly challenging seminaries to adjust to the demands of the consumer-based market (can your master's program succeed being less modern than your seminarian's kids' K-12 classroom?). The iPad wasn't designed for education but in less than a year, classroom trials were being launched.

This expands or adds new job roles and forces organizations to reconsider how technological responsibilities are being distributed among staff.   There is no standardization as theological schools grapple with the best organizational placement for a variety of technical roles. In this study, we discovered there is a spectrum of similar tasks located in varying departments across ATS schools. For

example, one Mainline school is currently struggling with the question after combing their LMS and SIS: where should the EdTech role be housed, with the academic dean or in the library?

When asked how their role has changed from their predecessor, most IT leadership commented on a movement away from just IT infrastructure work and into other campus-wide areas including classrooms, social media, faculty support, and training, with more recognition of the necessity of their role campus-wide.   15% of IT leaders surveyed think the importance of the role is now much more widely recognized across the entire campus.

> I feel like there's a lot more just general respect and recognition of my role as director of digital learning. I don't think there's anyone that would say that my role is unnecessary. It has become an essential role.
>
> Ruth, EdTech leader at a mid-sized Mainline school

At least a third of EdTech leaders find an increase in time spent providing technical support to faculty. Some mentioned that additional resources (staff or budget) are being allocated to support their increased overall workload.

There is increasing inclusion of IT leadership to be a part of the Executive Cabinet, as technology has a greater impact on every part of campus and organizational mission. Outside of theological schools, technology positions have increasingly become more strategically engaged in the organization's mission.   Deloitte's 2020 Global Technology Leadership Study states that "technology leaders were being called upon to serve as change agents." Deloitte's study also found that technologists can "play a pivotal role in shaping their organizations' resilience, recovery, and ability to thrive in the long term." Academia will likely follow the private sector to increase the strategic involvement of technology leaders. For example, former IT director Lydia was promoted to the executive level at her large Evangelical institution.

There is an increase in IT leadership concerns about vulnerabilities for Information Security including those that have already experienced ransomware, hacked websites, and cloud provider breaches like the one at Blackbaud.

Our survey shows a 3-fold increase in the use of cloud services over the last three years (see fig. 7). Cloud services can be a boon in remote working and learning, adding flexibility and the ability to scale up quickly.   This can affect budgeting as on-campus servers that were normally funded from capital budgets are being replaced by cloud services from operational budgets. There can be a trade-off as cloud services are generally more expensive but are more responsive to changing needs of students, staff, and faculty while reducing the need for on-campus server management.

FIGURE 7

% of Cloud Services in 2017 — bar chart (IT, Ed Tech) by category: None, 1-25%, 26-50%, 51-75%, 76-100%

% of Cloud Services in 2020 — bar chart (IT, Ed Tech) by category: None, 1-25%, 26-50%, 51-75%, 76-100%
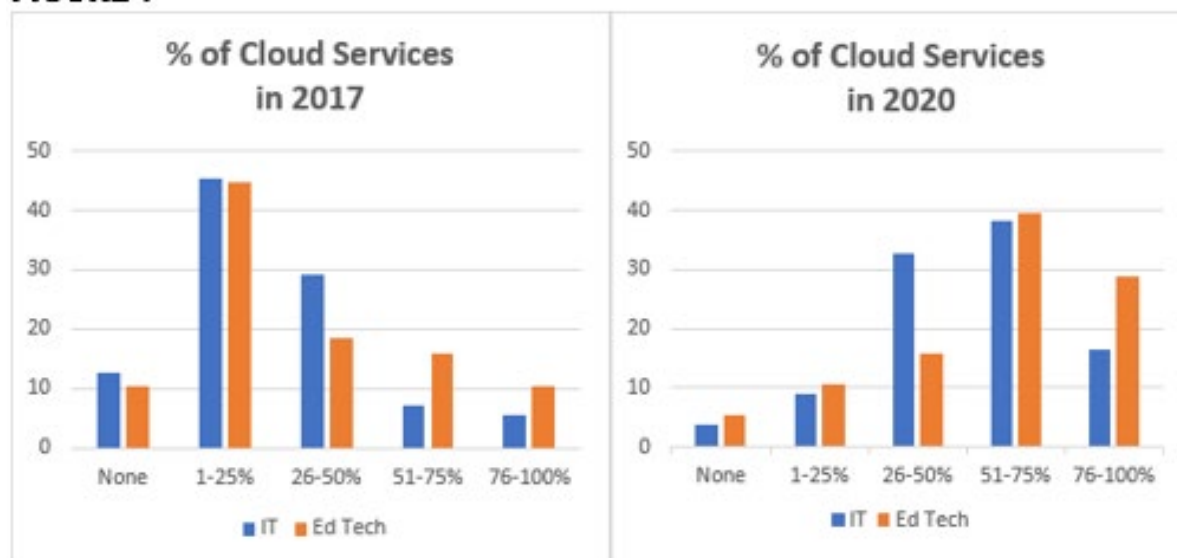
It was nearly impossible to ask technology leaders about how their roles have changed without immediately recalling developments and obstacles surrounding the pandemic. Seminaries varied in their preparedness for remote work. IT leader Paul said his institution was well-positioned to ramp up in terms of software, licenses, and faculty training. Some struggled because the technology at their institution is "behind by 20 years." The uncertainty surrounding the pandemic made the transition difficult for technologists and faculty. Many waited for parameters and decision-making from governments, host universities, and their own institutional leadership. For most technology leaders, COVID-19 was a stress test that led to creativity, problem-solving, productivity, and long hours. Workloads spiked especially in the area of user support. While user demands eventually decreased in the months that ensued, some report working 60 or more hour workweeks during the early months of the pandemic.

According to the interview researcher, for many interviewed, COVID was the turning point that forced everyone online. As one EdTech leader elaborated, "I had to do in three days what this organization was trying to avoid for years."

For many others, they reported that their institution was already almost fully online, so the transition was seamless.

Multiple technology leaders reported trying to escort their institutions into the 21st century via new technologies prior to the pandemic, but they were met with resistance. As a Dual-Tech leader said, the "faculty attitude towards using technology pre-COVID was really bad." Others report that convincing decision-makers to purchase new technologies was also challenging: Dual-Tech leader Solomon in a mid-sized Mainline institution said, "[I]t is very hard to convince

people to invest a huge amount of money in technology." The CARES Act was used to upgrade laptops in multiple instances, as Leah, an EdTech leader explained, "A lot of it ended up being really good, even though it came out of a really bad situation. The CARES Act funding that the institution qualified for was a way—we were able to strategically use those finances to improve the quality of our online courses and improve the technology that we had available. We were able to purchase new laptops for our faculty, which they were due for, but we didn't necessarily have the budget item for them".

> "I'm grateful for the CARES Act. That gave us a lot of margin to be able to" … "purchase technology and expand some of our technology."
>
> Levi, EdTech at very large Evangelical school

Despite having to grapple with various issues created by the pandemic, IT, EdTech, and Dual-Tech leaders are generally positive about their institution's response. They describe their institution's COVID response as ranging from "adequate" to "amazing." Most leaders interviewed reported that people at their schools stepped up to serve and get through the crisis together.

Future Needs

Programming Needs

Where are the preparation gaps? How should ATS change its programming in order for it to be the "go to" resource for you?

Future surveys

Technology leaders were asked about ways ATS can help support them in performing their roles. This could be tools, resources, programming, training or services—anything that would help them do their jobs well.

Based on findings from the study, my recommendations to ATS for services to offer to IT and EdTech membership are:

- Networking
  - Facilitate cohort networking
  - Increase engagement by outreach to new hires
- Research Hub
  - Be a resource for relevant emerging technological research
  - Be a resource for research into credentials best suited for theological schools

- o Be a resource for locating technology grants and low-cost professional development opportunities
  - ▪ Purchasing
    - o Create a purchasing consortium or assist with ad-hoc group negotiations
    - o Be a resource for research necessary for selection of products
  - ▪ Skill based training
    - o Host training from industry experts at a reasonable cost
      - ▪ Change Management skills
      - ▪ Decision making skills
    - o Coordinate peer training sessions from other ATS school colleagues
  - ▪ Hands-on seminars with "walk out the door" actionable proposals
    - o Strategic Plans
    - o Business Continuity/Disaster Recovery Plans
    - o Organization structure and staffing models

"There are so many other resources that are available out there. It's just more of cultivating those and funding them.", said Jonah, an IT leader. Most technology leaders would like to use modern IT and EdTech systems. Support from ATS in staying up-to-date with technology, including foreshadowing significant changes in the field could help many technology managers. When staying current in a fast-evolving technology world could be a full-time job for any technology leader, it would be an excellent use of resources to leverage a technical ATS researcher specifically to bring together and disseminate research for IT and EdTech.

> "ATS can be more intentional about making [it] possible for these institutions to share their insights and resources."
>
> Ezra, EdTech leader from large stand alone school

By far, the most requested service by IT, EdTech, and Dual-Tech leaders was to help them with more networking opportunities whether in person or online. Some are open to large-scale gatherings, but many are primarily interested in small-group settings.

For networking, several technology leaders are already a part of a subnetwork of ATS schools unofficially. Some have created a consortium in their city or convene semi-regularly with schools across the United States. And some have paired up around specific systems they are using, like a common Learning Management System; or around IT, EdTech, and Dual-Tech responsibilities. One group has been meeting annually for 15 years with technology leaders from schools similar in constitution.

There is an interest in ATS support with shared purchasing. This came up multiple times, to increase the buying power necessary for deals from vendors. One technology leader says he was able to secure cybersecurity training at a reduced rate for an informal group that was formed by posting on Engage. The request here is ATS help expedite this kind of purchasing on their behalf.

When offered a variety of skill-based training topics, of most interest to both groups were Strategic Planning and Change Management followed by EdTech preference for Conflict management and IT preference for Decision-making skills.

More particular requests from IT, EdTech, and Dual-Tech leaders related to credentialing. A few are pursuing or would like formal training related to their technical role. For example, Ruth and Jonah are essentially self-taught when it comes to instructional design with technology. Ruth mentions how certifications could help her on her professional journey. As there is an overabundance of credentialing programs for IT and EdTech, it seems the best if ATS could help to define the most relevant recommendations for roles in HigherEd theological education organizations.

It seems worth inserting that roughly half of the sample used this question as an opportunity to mention services ATS already provides. While some leaders mentioned they did not know anything about ATS, others celebrated some of the services they have enjoyed from the association. For many years, IT and EdTech had joint conferences with CFOs, offering formal cohort presentations on their area of expertise. In 2017, 2018, and 2019 the TTEG (IT group) met at different host seminary campuses for networking and informal cohort sharing. These mini-conferences consisted of open discussions of technology solutions (What are you using? Do you recommend it? Tell me about the project management? How much are you paying?), plus challenges specific to theological schools, budgets, services offered to students, faculty or staff and campus tech tours. Around 2018, the EdTech track lost its committee leadership and stopped doing programming and have been invited to the mini-conferences.

ORIENTATIONS, PLEASE

When technology leaders responded to an interview question about if ATS could help with initial job preparedness, some responded that they could have been served by an orientation to higher education, or theological education or even their own institution specifically.

Higher education orientation. Those coming in from non-HigherEd backgrounds found the organizational differences to be stark. Some felt an introduction to academia would have been helpful, covering the "big picture", to provide better context.

Theological education orientation. To highlight the context of theological education, ideally include the fields that people study but also how it "fits together," including denominations and key aspects of theological education.

Institution-specific orientations. General onboarding including insight into the seminary's culture, policies, programs, histories, or more specific role documentation from their predecessor would be helpful. Multiple people admitted to not knowing how things worked in the beginning, including expectations, benefits, and more.

When technology leaders were asked what would make them more apt to participate in ATS programming, both groups said they want:
1) presenters from similar schools,
2) experts from non-theological ed and/or
3) networking.

They are least interested in long meetings (over 3 days), meeting with mentors, connections with other ATS events, and 'high-value' locations.

Other technology associations mentioned during interviews include EDUCAUSE, HESS Consortium, Tech Soup, and Online Learning Consortium (OLC).

Insights to ATS: ATS should concentrate on benefits of being a curator and matchmaker in addition to its current role of offering networking and cohort webinars.

If ATS were to create a technical research hub with a technical researcher, it could leverage one person to provide over 270 organizations with curated information beneficial to all. IT leaders, in particular, do a lot of time-consuming research on purchasing products and services. ATS and Educause discussion lists are filled with "What are you using? Do you recommend it? How much are you paying?". ATS could be a resource of providing recommendations, pricing, and matchmaker referrals to current users. Currently, each purchaser starts from scratch, asking for recommendations from colleagues, listening to demos and sales pitches all to find out that the product is too expensive or doesn't fit their needs.

> "Any assistance that could be offered in actually consolidating, and actually communicating things that would be beneficial, things that would save my institution money and time, would be very welcome."
>
> Joseph, IT leader from a mid-size stand-alone school

Technical training is offered in abundance elsewhere and it is not useful for ATS to duplicate efforts already available for larger markets. However, there are 3 aspects of opportunity for training: 1) provide colleague presentations from peer institutions, 2) provide expert training at negotiated low prices and 3) research available low-cost training or certification recommendations.

Workshops on a particular topic (like business continuity or strategic plans) for the purpose of completing a written plan in 2 or 3 days would be a practical efficient use of time and funds. This could provide cohort networking by working on a topic together with similar schools plus a labor-saving way to walk out with a ready proposal to bring to their executive cabinet or board.

Many of the interviewees mentioned interest in exactly the type of cohort networking that the TTEG group has been doing each year. But they may have missed it if they are not active participants in the Engage discussions lists. As a membership tool, an introduction to short ATS video with a list of accompanying list

of benefits particular to a role might be considered for engagement outreach to the staff of member schools.

To meet the future needs of technology leaders, ATS should focus on ways that provide cohort networking and substantial time or money savings.

Future research
The following topics may be worthy focal points for future research.

Post-pandemic: As this research was completed during the pandemic, it is difficult to know how much COVID has changed specific responses, and within this long timeframe of flux, there is unknown about long-term effects of changes to the role and institutions' use of technology. Post-pandemic surveys will tell us more in the future about what changes become permanent.

Satisfaction: Is there a correlation between technology leaders that report feeling valued at work and satisfaction?

Role next step: When technology leaders leave a position, is it likely to be to another theological institution, another type of school in education or to the private sector?

Security: Is there an increase of priority schools have assigned to information security? Is it a result of the increase targeting of educational institutions and small businesses? Are there resources that could help increase the security levels of ATS schools?

Enrollment: Do any changes in remote learning technology play a role in Enrollment Management? Has the widening of recruitment among schools that formally did not have online programs caused more competition for online students?

Conclusion

ATS fills a niche need for leadership education for technology leaders looking to interact with other theological school cohorts. As there is an overabundance of supply of technical education in the marketplace and a diversity of responsibilities across ATS technology leaders, it would be advantageous to offer programming that focuses on ways that provide a substantial time or money savings.

Leadership education for technologists would be best served by research and curation services. If ATS were to create a technical research hub with a technical researcher, it could leverage an individual effort to provide over 270 organizations with curated actionable information beneficial to all.

The Senior Information Technology role, Senior Education Technology role and Dual-Tech roles will be always in flux, challenging those supporting their organization's mission, and ATS could be a key support service for the technology leaders.

Appendix A – Quantitative Survey Sample

Composition of survey of 110 Participants:

24	Dual-Tech
33	Senior IT
39	Senior EdTech
14	selected Neither

Senior IT Sample	ATS/COA Database
14.0% Canada	15% Canada
47.4% EV 31.6% ML 19.3% RC/O 1.8% Jewish	44% EV 33% ML 22% RC/O 1% Jewish
15.8% Related	41% Related
15.8% Small (1-75 HC) 31.6% Mid-sized (76-150 HC) 31.6% Large (151-300 HC) 21.1% Largest (300+ HC)	22% Small 29% Mid-sized 27% Large 21% Largest
50.9% Denominational 28.1% Independent 19.3% Roman Catholic / Orthodox 1.8% Jewish	54% Denominational 23% Independent 22% Roman Catholic / Orthodox 1% Jewish
3.5% Doctoral Universities: Highest Research Activity 14.0% Doctoral Universities: Higher Research Activity 15.8% Doctoral Universities: Professional-Larger 26.3% Doctoral Universities: Professional-Smaller 26.3% Master's Colleges & Universities: Larger Programs 14.0% Master's Colleges & Universities: Smaller Programs	5% Doctoral Universities: Highest Research Activity 15% Doctoral Universities: Higher Research Activity 20% Doctoral Universities: Professional-Larger 25% Doctoral Universities: Professional-Smaller 17% Master's Colleges & Universities: Larger Programs 18% Master's Colleges & Universities: Smaller Programs
22.8% Female 73.7% Male 3.5% Did not answer	12% Female 88% Male
7.0% Asian or Pacific Islander 3.5% Black, African American 0% Native American, First Nation 5.3% Hispanic, Latino(a) 80.7% White, Caucasian 3.5% Other / Did not answer	6% Asian or Pacific Islander 6% Black, African American 1% Native American, First Nation 2% Hispanic, Latino(a) 85% White, Caucasian

Senior Ed Tech Response Set	ATS/COA Database
9.5% Canada	15% Canada
39.7% EV 47.6% ML 11.1% RC/O 1.6% Jewish	44% EV 33% ML 22% RC/O 1% Jewish
17.5% Related	41% Related
15.9% Small (1-75 HC) 22.2% Mid-sized (76-150 HC) 33.3% Large (151-300 HC) 28.6% Largest (300+ HC)	22% Small 29% Mid-sized 27% Large 21% Largest
58.7% Denominational 28.6% Independent 11.1% Roman Catholic / Orthodox 1.6% Jewish	54% Denominational 23% Independent 22% Roman Catholic / Orthodox 1% Jewish
4.8% Doctoral Universities: Highest Research Activity 12.7% Doctoral Universities: Higher Research Activity 23.8% Doctoral Universities: Professional-Larger 30.2% Doctoral Universities: Professional-Smaller 14.3% Master's Colleges & Universities: Larger Programs 14.3% Master's Colleges & Universities: Smaller Programs	5% Doctoral Universities: Highest Research Activity 15% Doctoral Universities: Higher Research Activity 20% Doctoral Universities: Professional-Larger 25% Doctoral Universities: Professional-Smaller 17% Master's Colleges & Universities: Larger Programs 18% Master's Colleges & Universities: Smaller Programs
36.8% Female 63.2% Male	12% Female 88% Male
9.5% Asian or Pacific Islander 6.3% Black, African American 0% Native American, First Nation 3.2% Hispanic, Latino(a) 79.4% White, Caucasian 1.6% Other / Did not answer	6% Asian or Pacific Islander 6% Black, African American 1% Native American, First Nation 2% Hispanic, Latino(a) 85% White, Caucasian

Appendix B – Qualitative Interview Sample

Fully 35% of respondents are Ed Tech leaders, 42% IT leaders, and 23% serve in both capacities (henceforth "Dual-Tech") at their institutions.

Men in the sample and adults age 50 and older are somewhat more likely to be IT leaders than women and younger adults. Meanwhile, younger leaders are more likely to serve in Ed Tech positions. Most participants are White (69%). Aside from one Asian respondent, no Black or "Other" races—composed of Latinx or mixed-race groups—serve as IT leaders.

About a third (35%) of the institutions represented in the sample are independent and 54% are denominational. Half of the institutions are specifically affiliated with the Mainline tradition, 38% with Evangelicalism, and 12% are Roman Catholic or Orthodox. Most of the schools (58%) tend to be large and doctoral universities (77%). A large majority (73%) are also stand-alone institutions and tend to house a large share of people working in Ed Tech (31%) or Ed Tech-related field (23%). About one-in-four participants (27%) work in a related institution— a school that is connected or related with another academic institution. The institutions represented in the data are about evenly distributed across US geographical regions. A few interviews take place with leaders from located in Canada and Puerto Rico.

The sample is also considered in light of economic indicators reported to ATS. The vast majority of institutions (81%) are financially stable or better in terms of their primary reserve ratio. And student expenditures in most schools have stayed relatively stable, as well. Still, in a plurality of cases, 42% of theological institutions are in the red in their annual SIR surplus. Among schools that show improvement on all three measures, none house any Ed Tech roles.

TABLE 1: CHARACTERISTICS OF THE SAMPLE

	General Sample		Ed Tech Officers		IT Officers		Dual-Tech Officers	
	N	%	N	%	N	%	N	%
Totals	26		9	35%	11	42%	6	23%
Men	15	58%	4	15%	7	27%	4	15%
Women	11	42%	5	19%	4	15%	2	8%
Age 20-39	5	19%	4	15%	1	4%	0	0%
40-49	6	23%	3	12%	1	4%	2	8%
50-59	8	31%	0	0%	6	23%	2	8%
60-plus	7	27%	2	8%	3	12%	2	8%
White, Caucasian	18	69%	6	23%	10	38%	2	8%
Black, African American, African Canadian	3	12%	1	4%	0	0%	2	8%
Asian-descent or Pacific Islander	3	12%	1	4%	1	4%	1	4%
Other	2	8%	1	4%	0	0%	1	4%
West	5	19%	2	8%	2	8%	1	4%
Northeast	5	19%	4	15%	1	4%	0	0%
South	6	23%	2	8%	2	8%	2	8%
Midwest	6	23%	1`	4%	3	12%	2	8%
Puerto Rico	1	4%	0	0%	0	0%	1	4%
Canada	3	12%	0	0%	3	12%	0	0%
Large	15	58%	5	19%	7	27%	3	12%
Mid	9	35%	3	12%	3	12%	3	12%
Small	2	8%	1	4%	1	4%	0	0%
Evangelical	10	38%	2	8%	6	23%	2	8%
Mainline	13	50%	6	23%	4	15%	3	12%
Roman Catholic / Orthodox	3	12%	1	4%	1	4%	1	4%
Doctoral: Research and Professional (PhD,ThD,ProfD)	20	77%	8	31%	7	26%	19	73%
Master's Colleges & Universities	6	23%	1	4%	4	15%	1	4%
Financial indicators								
Primary Reserve Ratio								
Decline	5	19%	2	8%	2	8%	1	4%
Stable	18	69%	7	27%	8	31%	3	12%
Improvement	3	12%	0	0%	1	4%	2	8%
Annual SIR Surplus (in number of years)								
0 or 1	11	42%	5	19%	3	12%	3	12%
2 or 3	9	35%	4	15%	5	19%	0	0%
4 or 5	6	23%	0	0%	3	12%	3	12%
Spending per student								
Decline	10	38%	4	15%	5	19%	1	4%
Stable	15	58%	5	19%	5	19%	5	19%
Improvement	1	4%	0	0%	1	4%	0	0%

Appendix C – Qualitative code tree

CODE TREE		
Officer title	Time in their position	
Factors that created a pathway into current position	Theology-related	Experience
		Social networks
		Education
		Skills
		Other
	Technology-related	Experience
		Social networks
		Education
		Skills
		Other
	Academia-related	Experience
		Social networks
		Education
		Skills
		Other
Factors that helped officers be effect in their positions	Theology-related	Experience

CODE TREE		
		Social networks
		Education
		Skills
		Other
	Technology-related	Experience
		Social networks
		Education
		Skills
		Other
	Academia-related	Experience
		Social networks
		Education
		Skills
		Other
	Other	Interpersonal
		Management
		"God lining things up"
If you were hiring someone for your position, what qualities/skills would you look for?	Theology-related	
	Technology-related	

CODE TREE		
	Academia-related	
	Interpersonal	
	Leadership/teaching	
	Other	
Approaches to leadership	Doesn't really lead	
	Relational leader	
	Servant leader	
	By example	
	Visionary	
	Being teachable	
	Leading up	
	Communicator	
	Hands off	
	Other	
How is effectiveness of work assessed?	Process	
	There is no assessment	
	Feelings about assessments	
Significant organizational change	Type of initiative	New software
		New hardware

CODE TREE		
		Methodological/Approach/Policy
		Interpersonal
		Meaningful impact;/influence, not sig
		Both
		Other
	Definition of significant organizational change	Multi-level (students to leadership)
		Multi-department
		Longlasting
		Qualitatively good
		Cutting edge
		Policy/protocol/systemic change
		Other
	Indicator of decision-making power	
Time	How is time distributed?	A lot of time (50%-plus)
		Some (25%-49%)
		Little (0-25%)
		NA
	Which aspects take too much time?	Paperwork
		Meetings
		Tech work

CODE TREE		
		Management
		Other
		Nothing
	Which aspects are they unable to devote enough time to?	Paperwork
		Meetings
		Tech work
		Leadership
		Further research
		Other
		Nothing
Institutional responsibilities	IT vs. Ed Tech	User support
		Managerial
	Embedded/related	
	Is there an aspect of institutional work that they think their position should have a more central role in?	Yes
		No
	Which aspects would be better served by other roles on staff?	Paperwork
		Meetings
		Tech work
		Management

CODE TREE		
		User support
		Other
		Position appropriately defined
	Are there false expectations of your time and role at your institution?	Yes
		No
Changes to role	Pre-tenure changes	New hardware
		New software
		Online education
		Hiring/firing personnel
		Department structure
		Other
		First in position
	Pre-COVID changes	New hardware
		New software
		Online education
		Hiring/firing personnel
		New to position
		Other
	Post-COVID outbreak changes	New hardware

CODE TREE		
		New software
		Online education
		Hiring/firing personnel
		Other
	Describe how have these changes have gone.	Positively
		Negatively
COVID-19	Assessment of institutions crisis planning	Pros
		Mixed
		Cons
	Feelings about COVID-related budgetary decisions	Pros
		Mixed
		Cons
Has your institution hired or contracted out online education systems?	No, and why not? Are they considering it?	
	Unclear	
	Yes old	
	Yes new	
Executive leadership	How do they make strategic institutional decisions	Description of bureaucracy
		Role of values in decisions
		Respondent involved

CODE TREE		
		Not involved
	Level of trust among them scale	9-10
		7-8
		1-6
		Positive review
		Neutral review
		Negative review
Satisfaction	Reasons for staying/satisfaction	People
		Believe in the mission
		Satisfied with pay
		Feels like God
		Interesting work
		Feels valued
		Has to stay
		Other
	What is least satisfying and why?	Paperwork
		Pay
		Meetings
		Tech work
		Management

CODE TREE		
		People/politics
		There is nothing unsatisfying
		Not feeling valued
		Other
Ways ATS can help	ATS familiarity	
	Training - courses, webinars	
	Services - work/research done on their behalf, grants, info/resource sharing	
	Networking - conferences, social media	
	Orientation	World of theology
		Educational culture
		Institution-specific
		Standards
		Professionalization
		No orientation needed
		Other