Web and Video Conferencing: Evaluation & Recommendations

August 2019

Table of Contents

Executive Summary 4
Section 1: Background/Goals/Scope/Committee/Roadmap 5
Project Background 5
Project Description 6
Project Goals 7
Project Scope 7
Web and Video Conferencing Committee 8
Project Roadmap 9
Section 2: WVC General Pilot Information 9
Faculty Participants 9
Additional Pilot Information 11
Survey Responses 11
Key Survey Items 12
Section 3: Faculty Pilot Survey Information 12
Qualitative Feedback - Faculty 12
Advantages 14
Challenges 14
Section 4: Student Pilot Survey Information 15
Qualitative Feedback - Students 16
Advantages 17
Challenges 17
Section 5: Meeting Pilot Survey Information 17
Qualitative Feedback - Meetings 18
Advantages 20
Challenges 20
Section 6: Zoom Updates and Suggestions for Enhancements 20
Section 7: Impact on Faculty and Training Services 21
Section 8: Administrative (non-Faculty) Setup and Support 22
Section 9: Accessibility and Security 22
Accessibility 22
Security 22
Appendix A – University Feedback 23

Faculty Open Ended Survey Feedback 23
Student Open Ended Survey Feedback 25
Meeting Pilot Open Ended Survey Feedback 29
General, Unsolicited Email Feedback 32
Appendix B – Survey Detail 39
Student Survey Detail 39
Faculty Survey Detail 41
Meeting Survey Detail9 44
Appendix C – Supported Languages (from the Zoom website) 46
Appendix D – Criteria 46
Appendix E – External Research and References 51
Appendix F – Other Decision Factors 53
Strategic Company Direction 53
Operational Support 53
Other Information 53

Executive Summary

In support of identifying and evaluating web and video conferencing (WVC) solutions for virtual meetings and online learning, a market analysis of the environment was completed in June 2018. In July 2018, the Office of the Provost and Information Technology Services (ITS) approved a new WVC committee in preparation for the spring 2019 WVC evaluation. Temple deans and administrators appointed 18 faculty members, staff and student representatives to the committee. Adobe Connect and Zoom - two leading WVC solutions were chosen for the pilot(s) and planned for comparison with Temple's current Cisco WebEx system. Over 40 courses with 600+ enrolled students were identified for the instructional WVC pilot and 100+ faculty/staff for the online meeting pilot. At the pilots' conclusion, the university surveys and supporting feedback would lead to a decision to either renew WebEx by August 2020 or move to another prominent WVC system such as Connect or Zoom.

In November 2018, prior to the spring semester WVC evaluation, Adobe informed us they decided to withdraw from the pilot program. The company revisited our project criteria and determined that Connect may not be the best virtual course and meeting solution for Temple. As a result, a university communication was sent to faculty, staff and scheduled pilot participants notifying them of Adobe's decision to no longer participate. The WVC committee continued plans for the Zoom pilot and offered all Connect pilot members the opportunity to evaluate Zoom instead. In addition to the university Zoom pilots, the College of Public Health ran an independent Zoom evaluation, and the School of Pharmacy Regulatory Affairs/Quality Assurance piloted both WebEx and Zoom to compare to Connect (their current application).

During the 2019 spring semester, the WVC Committee in collaboration with pilot participants, closely examined the features and functionality of Zoom for online instruction and virtual meetings. The committee also compared Zoom and Cisco's company strategy, commitment to customer service, technical support, marketplace growth, pedagogy and innovation. Key WVC requirements included: room and meeting scheduling, a contemporary user-friendly interface, virtual breakout rooms, webinars for controlled one-way meetings, high video and audio quality, mobile applications, lecture and meeting recordings, accessibility and security. Added features evaluated included: toll calling in the US and internationally, LMS (Canvas) integration, 24x7 phone, chat and email support, expanded recording storage, automated speech recognition (ASR), close captioning, and Zoom rooms for compatibility with Polycom/video conferencing rooms.

The survey feedback and supplementary comments from the Zoom pilot participants remained largely positive. Accordingly, the WVC Committee unanimously recommended the adoption of Zoom as the new university enterprise solution and replacement for WebEx. The subsequent major findings further validated this decision.

- Zoom exceeds and supports our educational requirements for online courses and meetings university-wide. The company offers a progressive technology approach and is well-positioned to adapt to the changing needs of the university in the online learning space.
- Zoom effectively integrates with our Canvas learning management system (LMS) supporting teaching, student learning and engagement.

- Zoom presents a clean modern interface with intuitive navigation for users across the university.
- Zoom offers sophisticated features for video and audio, online course and meeting scheduling, unlimited recordings, improved accessibility, and compatibility with other video conferencing systems.
- Zoom enriches student collaboration and expands our communication capabilities beyond the classroom. This is valuable in all teaching contexts and particularly important for growth of online programs.

The transition to Zoom should be relatively seamless. The company has agreed to provide Temple with a free year of enterprise use and 24x7 chat/email/phone support while our agreement with WebEx continues through August 3, 2020. This provides opportunity for early adopters as well as three full semesters (fall 2019, spring and summer 2020) to shift from WebEx to Zoom. Also, in preparation for the transition, training is planned for faculty, staff and students via the Center for the Advancement of Teaching (CAT), ITS, LinkedIn/Lynda, Temple and Zoom websites and other available resources.

Section 1: Background/Goals/Scope/Committee/Roadmap

Project Background

A university's web and video conferencing (WVC) system serves an integral role in student-centered teaching and learning practices. The best WVC system provides an easy, reliable, accessible cloud platform for video and audio conferencing, collaboration, chat, and webinars across mobile devices, desktops, telephones, and room systems essential for online instruction and virtual communications. With a developing online learning presence at Temple University, the WVC system must support best practices to enhance student engagement with instructors and peers, and effectively promote adapted student pathways through the curriculum.

At Temple University, WebEx has served as the enterprise WVC platform for more than 10 years. Students, faculty, administrators and staff use WebEx/WVC tools for course delivery, collaboration, assignments, appointments, trainings, meetings/consultations and other commitments. Comparable to any robust technology, the needs and uses for WVC have evolved since the original adoption of WebEx. The upcoming renewal of our WebEx agreement in August 2020 prompted university constituents to evaluate the WVC marketplace and recommend the best WVC platform to support the university's goals moving forward.

The university provides thousands of courses in a variety of formats including face-to-face, hybrid, online, etc. via 3,880 faculty members (including 2,296 full-time and 1,554 part-time faculty) to approximately 40,000 students each semester (including ~30,000 undergraduate students and ~10,000 graduate/professional students). Students, faculty and staff expect a robust and user-friendly experience that facilitates communication regardless of the standard. Instructors conduct classes at various times and with varying lesson plans. There is no one formula that fits the teaching style, subject matter and lesson plan of every faculty. The WVC platform must be flexible enough to fit the needs of all faculty while at the same time be easy to use for new or inexperienced users. Temple University necessitates a WVC platform that can support existing functions, as well as, adaptably fulfill the University's ever-advancing needs.

The university has continually increased its online digital education presence. The online learning direction in combination with greater numbers of people using the university WVC platform, further supports the need to be robust and easy to use. Chart 1 below displays the latest information for degrees and certificates from Fall 2016 through Fall 2018.

Chart 1 - Degrees and Certificates – Online and Hybrid

Category	Fall 2016	Fall 2017	Fall 2018
Graduate Certificates – hybrid*	10	11	11
Graduate Degrees (fully online)	8	14	17
Graduate Certificates (fully online)	9	19	19
Undergraduate – fully online	1	1	6

**Includes online and on-campus components*

With the number of degrees and certificates increasing and expected to rise in the coming years, Chart 2 shows the virtual/online and hybrid registrations and credit hours from Fall 2016 through Fall 2018.

Chart 2 - Registrations and Credit Hours Generated (CHG)

Category	Fall 2016	Fall 2017	Fall 2018	
Undergraduate CHG	14,320	18,118	20,870	Virtual/Online Credit Hours Generated
Graduate CHG	6,424	8,143	9,168	
Total CHG	20,744	26,261	30,038	
Undergraduate CHG	3,248	4,736	4,428	Hybrid* Credit Hours Generated
Graduate CHG	2,643	2,897	2,127	
Total CHG	5,891	7,633	6,555	

**Courses that meet both online and on-campus*

The online and hybrid statistics were provided by the Office of Digital Education.

Project Description

The goal of the WVC evaluation was to assess the industry's current leading WVC platforms (Adobe Connect, WebEx and Zoom). The WVC Committee's charge was to recommend a solution that most closely meets the stated academic, business and technical needs of the university community. *Note: Before the pilot began in January 2019, Adobe informed us they chose not to participate in our University WVC pilot.*

In the summer of 2018, a WVC Committee was formed and included 18 members comprised of faculty, staff and student representatives from across the University. The committee was responsible for planning a spring 2019 WVC pilot of Zoom to compare against WebEx, the university's current WVC platform. It was determined that two separate pilots would work better - one instructional pilot and one meeting pilot. In the instructional pilot, 36 faculty members leading 40 courses across schools, colleges and campuses were identified by deans and associate deans with 782 student participants. Zoom training was conducted for the faculty participants in December 2018 and January 2019. For the meeting pilot, 107 people signed up to participate.

To engage the pilot participants throughout the WVC pilot, project announcements, email communications and continual updates were sent. A project email address wvcc@temple.edu was created and widely distributed to receive open-ended feedback. Also, a WVC evaluation website was designed to provide transparent information on the pilot to the university community.

Assessment and evaluation were guided by feedback from faculty, students, staff and IT representatives, Gartner Consulting and peer institutions. The WVC Committee used many sources of information to compose its recommendation, including:

- Pilot groups
- Student, faculty and staff surveys
- Training and documentation
- Technical evaluation
- Security and accessibility reviews
- Other WVC research including Gartner, other university evaluations/decisions
- General Temple University feedback
- Cost analysis
- Strategic company direction of Cisco and Zoom

Project Goals

The following goals were established at the beginning of the WVC pilot in order to strategically guide the evaluation process:

- Research the best WVC providers on the market to facilitate teaching, learning, innovation and collaboration.
- Conduct a fair and impartial assessment of WebEx and Zoom.
- Gather requirements and feedback from students, faculty and staff.
- Support Temple University's mission and aspirations for the future.
- Recommend a WVC alternative that meets the educational and technical needs of the university.

Project Scope

The scope of the WVC evaluation was as follows:

- Conduct two spring 2019 Zoom pilots (instructional and meeting pilot).
  Instructional pilot included:
  - 36 faculty participants across schools, colleges and campuses
  - 15 schools/colleges from seven campuses
  - 40 courses
  - 782 undergraduates, graduate and professional students
  - Meeting/class sizes ranging from two students to 270 students

Meeting pilot included:
    - 107 faculty and staff
    - 30+ departments/schools/colleges from five campuses
- Distribute faculty, student and meeting surveys related to teaching, learning, preparation, features, ease of use, etc.
- Determine key criteria and technical requirements.
- Research peer institutions WVC selections and satisfaction.
- Review direct costs and university opportunity costs.

Web and Video Conferencing Committee

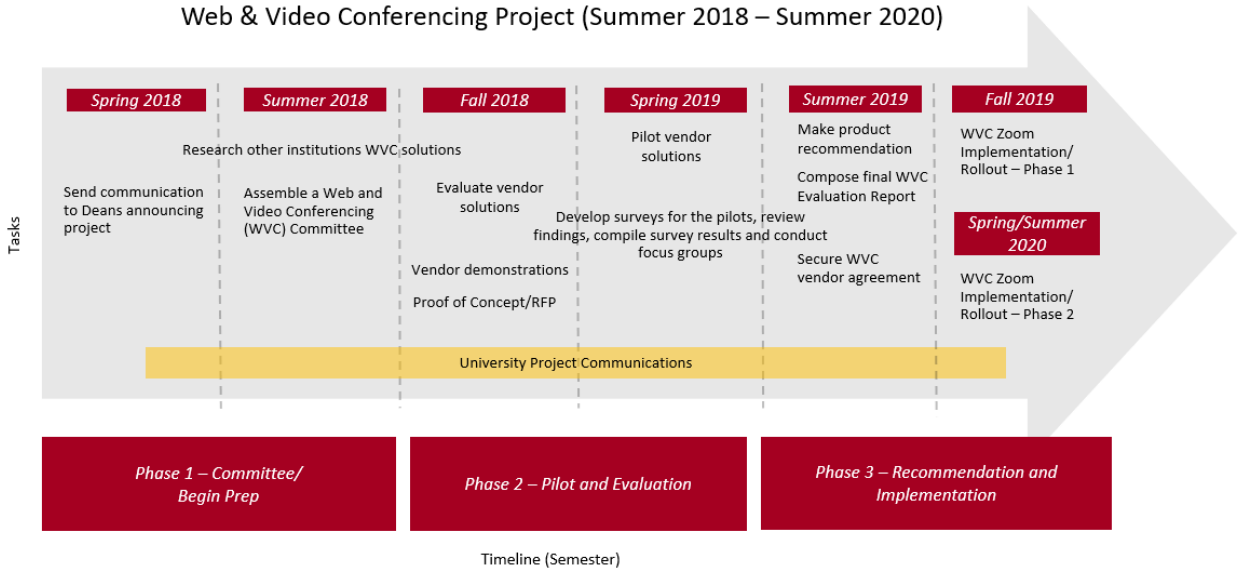
The WVC Committee included faculty, staff and students from various Temple University schools, colleges and departments. The committee was formed in August 2018 and provided this recommendation report in August 2019. The committee members are listed below.

First Name	Last Name	School/College/Campus	Title	Status
Susan	Hyer	Information Technology Services	Assistant Vice President, Academic Computing	Co-chair
Michael	Borenstein	School of Pharmacy	Senior Associate Dean	Co-chair
Gerard	Alolod	College of Public Health	Director Social & Behavioral Sciences/Research	Member
Felicia	Boccuti	Lewis Katz School of Med.	Director Info Technology	Member
Angelica	Cionci	Fox School of Business	Instructional Technologist	Member
Chris	Denison	University Libraries	Technical Support Specialist	Member
Marc	Getty	College of Liberal Arts	Sr. Director, Facilities & IT	Member
Mark	Haubrich	Information Technology Services	Project Director ITS	PM
Jennifer	Ibrahim	College of Public Health – Ed.	Associate Dean	Member
Johanna	Inman	Ctr. for the Adv. of Teaching	Director Instr. Technology	Member
Joseph	Mahan	School of Sport, Tourism and Hospitality Management	Chairperson/Associate Professor	Member
Christopher	Miano	Fox School of Business	Director of Instr. Technology	Member
Shyam	Nair	Beasley School of Law	Assistant Dean	Member
Paul	Raudkepp	Japan Campus	COO/CIO, Japan campus	Member
David	Rhoads	Tyler School of Art	Assistant Director ITS	Member
Emma	Roberts	Tyler School of Art	Undergraduate Student	Member
Daniel	White	Office of Digital Education	Assoc. Vice Provost/Director	Member
Alexandra	Yanovski-Bowers	Vice Provost for UG Studies Undergrad Strategic Initiatives	Assistant Director & PhD Student, Education	Member

Project Roadmap

In Spring 2018, the WVC pre-planning effort began with a request to the deans to recommend a faculty/staff person from their unit to respectively serve on the committee. The WVC planning, launch and evaluation occurred from August 2018 through May 2019. The Zoom transition will start in Fall 2019 and end in Summer 2020. The project milestones are shown in the diagram below.

Project Roadmap



Section 2: WVC General Pilot Information

Faculty Participants

The following chart lists the 36 faculty, school/college affiliation, campus and course section/name of the spring 2019 WVC pilot participants. The 40 pilot courses included undergraduate, graduate and professional students across various schools, colleges and campuses. (Three of the faculty pilot participants taught more than one course.) The faculty participants ranged from novice to advanced WVC users familiar with multiple WVC applications.

Count	Name	School, College or Department	Campus	Course(s)
1	Andrea Monroe	Law	Main	Partnership Taxation
2	Kathy Mandelbaum	Law	Main	Estate Planning 1
3	Carole Tucker	CPH	Main	HRPR 8001, EBPI Grantsmanship
4	Annette Willgens	CPH	Main	HRPR 8002: Qualitative Research
5	Donald Wargo	CLA	Main	Econ 1101, Macroeconomics Principles and Econ 1102 Microeconomics Principles
6	William Aaronson	CPH	Main	HPM 5006 701 Economic and Political Aspects of Health
7	Bari Dzomba	CPH	Main	HIM 5112
8	Justin Shi	CST	Main	Mobile Programming Technologies and Web Programming
9	Nicole Westrick	CST	Main	CIS 3775/CIS 5275
10	Rita Marie Trippett	CLA	Harrisburg	CLA 1010 Special Topics in Liberal Arts
11	Darin Kapanjie	Fox	Main	Quantitative Methods for Business
12	LiRon Anderson-Bell	Klein	Main	Law & Ethics in PR, Diversity & Media Issues in PR
13	Bradley Gardener	CLA	Main	Digital Mapping
14	Rashida Ng	Tyler	Main	TA-ARCH-8011-001-28570-201903
15	Jeffery Doshna	Tyler	Main	Graduate Planning Studio
16	Shawn Higgins	TUJ	Japan	Bridge 600
17	Mary Conran	Fox	Rome	Consumer & Buyer Behavior - Marketing 3596
18	Diana Wildermuth	Education	Main	CPSY 9387 Practicum
19	Carly Papenberg	Fox	Main	BA 2196, Section 730
20	Johanna Inman	CAT	Main	EPSY 8960 - Innovation, Technology, and Teaching in Higher Education
21	John Allgood	STHM	Main	SRM 5227: Sport & Media Communication
22	Karl Morris	CST	Main	Introduction to Mobile Application Development
23	Andrew Rosen	CST	Main	Accelerated Data Structures & Objects
24	Dominique Kliger	CST	Main	CIS Online IST Master's Program
25	Kathleen Voss	Fox	Main	HRM 5115 Talent Acquisition
26	Daniel Isaacs	Fox	Main	LGLS5701 Law and Ethical Foundations
27	Adam Brunner	Continuing Ed	Center City	Hot Topics in Justice & The Law
28	Michael Kalai	Engineering	Main	DIGITAL WORLD 2020
29	Karen Zimm	RAQA	Ft. Washington	RAQA Class
30	Rali Parth, MD	Medical	Health Sciences	TMS/Pulmonary/Critical Care/Sleep Med
31	Chris Wittrock	RAQA	Ft. Washington	Bioethics for Pharmaceutical Professionals 9990 Good Pharmacovigilance Operations and Clinical Drug Safety & Pharmacovigilance
32	Matthew Noonan	RAQA	Ft. Washington	RAQA5596
33	Courtney Spencer	Tyler	Main	Mobile Apps: Design/Prototype
34	Jeffery Henderer, MD	Medical	Health Sciences	Ophthalmology
35	Marisa Rose, MD	Medical	Health Sciences	Ob/GYN 3rd year clerkship
36	Mercedes Jacobson, MD	Medical	Health Sciences	Neurology NEUR M370

Additional Pilot Information

As of May 15, 2019, over 250 Zoom Pro accounts were created with full Zoom features and single sign on capability; 75 Basic Zoom accounts were also created. Only instructors needed Zoom Pro accounts to teach in the pilot. Students joining online pilot classes did not require Zoom accounts, although many signed up for Zoom Basic accounts to lead online student group sessions.

The following chart shows the number of class meetings, participants, and time/meeting minutes by month and totals throughout the pilot (from January – May 2019).

Month - 2019	Meetings/Webinars	Participants	Meeting Minutes
January	186	1,836	71,589
February	259	3,034	122,395
March	328	3,632	164,451
April	308	3,769	130,781
May	98	423	15,749
Totals	1,179 (59/week average)	12,694	504,965 minutes (8,416 hours)

Below is a list of the countries pilot participants attended via an individual class session or meeting.

Countries		
United States/ Puerto Rico	New Zealand	Canada
Mexico	Italy	Hong Kong
China	Spain	Greece
India	UK	Luxemburg
Taiwan	Norway	Germany
Japan	Thailand	Ireland
Dominican Republic	Australia	

Pilot Survey Information

Individual faculty, student and meeting surveys (one each) were developed and distributed during the pilot. A total of 290 surveys were completed with overall survey feedback in favor of Zoom.

Survey Responses

Faculty Distribution

- March distribution; polled usage of features and functions (n=42); n=number of survey responses.
  Note: Three of the 36 faculty pilot participants taught more than one course in the pilot and may have submitted more than one survey.

Student Distribution

- March distribution; polled usage of features and functions (n=209).

Meeting Distribution

- April distribution; polled usage of features and functions (n=39).

Key Survey Items

Zoom to WebEx Comparison - The charts below reflect the mean scores of the three surveys (faculty, student and meeting surveys of those using Zoom in the Spring 2019 semester). The results below show the faculty, student and meeting support for Zoom in every category.

Section 3: Faculty Pilot Survey Information

The faculty pilot survey information includes ratings of teaching and learning areas, Zoom features, what is needed to make Zoom easier to use, open-ended comments and advantages/challenges.

Faculty Survey - Please indicate how strongly you agree that the platform did the following.

1=Strongly disagree; 5=Strongly agree (WebEx n=2; Zoom n=41 for all except where noted)	WebEx		Zoom	
	Mean	(SD)	Mean	(SD)
Facilitated my teaching	2.50	(2.1)	4.17	(1.2)
Facilitated student learning (Zoom n=40)	2.50	(2.1)	4.33	(0.9)
Will recommend it to other instructors	2.50	(2.1)	4.37	(1.2)
Increased the likelihood of adaptation in future courses (Zoom=40)	2.50	(2.1)	4.43	(1.0)
Saved me time as an instructor	2.50	(2.1)	3.80	(1.2)
Increased my effectiveness as an instructor (Zoom n=40)	2.00	(1.4)	3.90	(1.3)
Allowed me to teach in an innovative way	3.00	(2.8)	3.85	(1.2)
Increased the frequency of my classes' engagement (Zoom n=40)	3.00	(2.8)	3.90	(1.3)
Improved the quality of my classes' engagement (Zoom n=40)	2.50	(2.1)	4.00	(1.2)
Was beneficial to my overall instruction	3.00	(2.8)	4.15	(1.1)
Was an easy way to connect virtually	3.00	(2.8)	4.41	(1.2)

Faculty Survey – Rate these features.

1=Not at all useful; 5=Very useful (WebEx n=2; Zoom n=42 for all except where noted)	WebEx		Zoom	
	Mean	(SD)	Mean	(SD)
Screen sharing	2.00	(2.8)	4.24	(1.4)
Host Control	2.00	(2.8)	4.36	(1.0)
Recording/ sharing	1.00	(1.4)	4.19	(1.5)
Chat group messaging	4.50	(0.7)	4.12	(1.4)
Document Sharing	4.50	(0.7)	3.62	(1.9)
Participation icon usage/ non-verbal feedback features	1.00	(1.4)	3.57	(1.8)
Breakout Rooms (Zoom n=41)	3.50	(2.1)	3.12	(2.1)
Whiteboard (Zoom n=41)	1.00	(1.4)	2.41	(2.1)

Qualitative Feedback - Faculty

Qualitative data including open-ended response comments on the faculty survey was largely in favor of Zoom. Below is a representative sample of comments. For a list of all comments see Appendix A.

What would make you more comfortable using the platform(s) you tested?

Zoom (selected responses)
• "It would be great to have preassigned breakout sessions."
• "The breakout rooms seemed a bit unclear and didn't seem to put everyone into a distinct room - some students remained in the main session."
• "Training for break out group set up."
• "The CAT session at the beginning of the semester was all I really needed. I'd make sure that it (or similar) was available moving forward."
• "Maybe CAT could offer some advanced features training in online sessions as they do for Canvas?"
• "We need single sign-on through Temple's server. The ease of assigning students to breakout sessions is difficult, particularly if students join class a little late or get kicked off due to connectivity issues and have to reconnect." (Note: Single sign on (SSO) was available for the WVC pilots. CPH launched their own distinct Zoom pilot, which did not include SSO.)
• "More IT support and ability of residents to log in and launch the session."

Note: There were no faculty WebEx responses to this question.

Faculty open-ended feedback (select responses)

Zoom Comments	WebEx Comments
"Zoom is the best platform I have used. Very user friendly."	"WebEx was clunky and problematic"
"Love Zoom. So much easier to use than WebEx and a cleaner and more friendly interface as well. I'm a convert."	"WebEx was a mess last year for the course I taught. Almost every session someone froze or lost connection."
"Zoom was overall better than WebEx, including faster and easier ways to share recorded classes."	"(WebEx) often crashes and does not have helpful audio capabilities. The breakout option is poor/does not work."
"Zoom is easy to use and has all the functions I need to record, teach, use small group break outs, and share content with students."	
"Zoom is incredibly easy to use, fast, and reliable. I would highly recommend moving forward with Zoom over WebEx."	
"My students also felt more comfortable using Zoom versus WebEx."	
"I like Zoom a lot, and I'd love to stick with it going forward. It was easy to set up, easy to share with the students, and far more interactive than the distance technology that we used before."	
"Zoom is easy and modern- most students use Zoom for other types of webinars and conferences. In order to attract students, we need to be offering the latest technology."	

Faculty Feedback – Advantages and Challenges - This section summarizes the feedback obtained from the faculty survey and is organized by advantages and challenges.

Advantages

- Interface and Design
    - We received several comments that Zoom was “intuitive” and easy to use.
    - Faculty found that students picked up Zoom quickly.
- Notable Features
    - Easy to use
    - Simple layout
- Support for Instruction
    - The CAT training was well received and should be continued.
    - “Just needed some startup help, but then, it was very easy (one link used all semester).”
- Vendor Support
    - Help came from the Temple help desk; however, a faculty member could choose to chat directly with Zoom regarding their issue.
    - We had less than five help desk calls relating to the Zoom pilot. Most of these calls related to room equipment issues and were not related to Zoom.

Challenges

- Pre assignment of breakout rooms (scheduled for release in August 2019*****).
- Online tech support when students have issues.
- Attendance reporting needs to improve.
- Importing and exporting polls.
- Option to upload files other than through the chat feature.

Note: Since the evaluation, Zoom has made changes/fixes for the challenges presented above. More information is also referenced in Section 6 of this document.

***Pre-assignment of Breakout Rooms**

One of the major criteria for the Fox School of Business is to pre-assign groups of students to breakout rooms for online classes. While WebEx is the first application on the market to include this feature, Zoom just released pre-assignment of breakout rooms on August 25, 2019. The pre-assigned breakout room release has been in testing with Zoom over the summer and is currently available for use at zoom.temple.edu. Zoom is also adding pre-assigned breakout rooms with LTI integration to their product roadmap (date TBD).

Section 4: Student Pilot Survey Information

The student pilot survey information includes rating of teaching and learning areas, rating Zoom features, what is needed to make WebEx/Zoom easier to use, open-ended comments and advantages/challenges.

Student Survey - Please indicate how strongly you agree that the platform did the following.

1=Strongly disagree; 5=Strongly agree (WebEx n=35; Zoom n=153 for all except where noted)	WebEx		Zoom	
	Mean	(SD)	Mean	(SD)
Facilitated the instructor's teaching (WebEx n=36; Zoom n=154)	4.08	(0.9)	4.33	(1.0)
Facilitated my learning (WebEx n=36)	3.92	(1.0)	4.37	(1.0)
Increased the likelihood of recommending it to other students (Zoom n=154)	3.57	(0.9)	4.24	(1.1)
Saved me time as a student	3.80	(1.0)	4.14	(1.1)
Increased my effectiveness as a student (Zoom n=151)	3.80	(0.9)	4.01	(1.1)
Allowed me to learn in an innovative way (WebEx n=34)	4.12	(0.9)	4.30	(1.1)
Increased the frequency of my class engagement	3.51	(1.1)	3.85	(1.2)
Increased the quality of my class engagement	3.54	(1.0)	3.88	(1.2)
Was beneficial to my overall learning	4.0	(0.8)	4.27	(1.1)
Was an easy way to connect virtually	4.0	(1.2)	4.54	(1.0)

Student Survey – Rate these features.

1=Not at all useful; 5=Very useful (WebEx n=33; Zoom n=154 for all except where noted)	WebEx		Zoom	
	Mean	(SD)	Mean	(SD)
Screen sharing	4.39	(1.0)	4.68	(0.7)
Host Control	3.94	(1.1)	4.45	(0.9)
Recording/ sharing	4.15	(1.0)	4.43	(0.9)
Chat group messaging (WebEx n=32)	4.16	(0.8)	4.50	(0.9)
Document Sharing (WebEx n=28)	3.93	(0.9)	4.48	(0.9)
Participation icon usage/ non-verbal feedback features (WebEx n=30)	3.77	(1.4)	4.23	(1.1)
Breakout Rooms (WebEx n=29)	4.21	(0.9)	4.62	(0.8)
Whiteboard (WebEx n=20)	3.85	(1.1)	4.04	(1.1)

Qualitative Feedback - Students

Qualitative data was also collected from students through open-ended survey response items. Qualitative data including open-ended response comments on the student survey were largely in favor of Zoom. Below is a representative sample of comments. For a list of all comments see Appendix A.

What would make you more comfortable using the platform(s) you tested?

WebEx (selected responses)
• "Stick to WebEx. It works well and everyone is already familiar with it."
• "WebEx only allows students to send chat messages to the host or other support personnel. Allow the option to send messages to classmates."
• "An option to send non-audio feedback to the professor. For example, when they ask, "does that make sense to everyone?" an option to click yes/no and show a poll of class feedback. Sometimes it is uncomfortable to click in because it feels like you're interrupting others that are clicking in at the same time."

Zoom (selected responses)
• "The biggest thing for me is efficiency in use. They both were good to use on the student perspective. I remember we would have quite a few technical issues with WebEx Fall 2018 and we have not run into any technical issues with Zoom this spring 2019."
• "None- it was great. Occasionally there is a lag when using host control and I think my laptop had an issue with Zoom and the microphone, but I solved that by using headphones."
• "A local Temple help desk that is knowledgeable in the software."
• "Instructors need more training. The professor couldn't tell when someone wanted to speak and/or Zoom does not have a raise your hand feature."
• "I don't think it's a matter of support, I am just not a big fan of the platform. For simplicity and use of use, I would recommend staying with WebEx."
• "I have used zoom before. Quality of imaging is better than WebEx. We had to use WebEx to record a project and it failed."
• "Zoom was the best platform I've used so far for online conferencing both at work and in college. One improvement I see could be with sharing your screen. Needs getting used to, because you must share every new web-site or program you open. Secondly, tests/quizzes could be improved by adding some features: like a word limit or a description. Or professors need to be trained on how to better customize them ;) So during the test it is easier to understand what type of answer is expected - one sentence or a paragraph, for example. Otherwise and regardless, Zoom is the best!"

Student open-ended feedback (select responses)

Zoom Comments	WebEx Comments
"Zoom was easier to use on my smart phone."	"Technical issues"
"Grad program should utilize this to make classes available online for students."	"It seemed as though WebEx had more features readily available."

“Zoom was the best platform I've used so far for online conferencing both at work and in college.”	“I have a lot of trouble with the sounding/hearing/voice in WebEx.”
“Simply put - Zoom superior to WebEx in virtually every way.”	“…WebEx experienced many complications in my course.”
“I prefer Zoom over WebEx.”	“WebEx was unreliable and clunky.”
“I've used WebEx outside of a classroom setting, and Zoom is absolutely easier to use.”	“WebEx seems to work just fine.”
“I loved Zoom. I've used Adobe connect in past classes and Zoom is so much better in comparison.”	“Stick to WebEx. It works well and everyone is already familiar with it.”
“I prefer Zoom over WebEx. I found Zoom much more user friendly.”	“Not much different than WebEx.”
“I thought it was great and very easy to use.”	
“The program was easy to use and guides you along.”	
“Zoom is more user-friendly than WebEx.”	
“Zoom was much more user friendly and had a clean user interface.”	

Student Feedback - **Advantages and Challenges** - This section summarizes the feedback obtained from the student survey and is organized by advantages and challenges.

Advantages

- General
  - Most preferred Zoom.
  - Easy to use and not much training needed.
- Interface and Design
  - Intuitive interface – “clean user interface”.
  - Easy to use.
- Notable Features
  - Breakout rooms are easier.
  - Works nice on mobile devices.
- Overall
  - Very easy to use (multiple responses).
  - Nearly all preferred Zoom over WebEx.
  - Provide faculty more training.

Challenges

- Option to upload files other than through the chat feature (on roadmap).
- Breakout sessions with mobile devices.

Section 5: Meeting Pilot Survey Information

The meeting pilot survey information includes ratings of meeting-related items, features, what is needed to make WebEx/Zoom easier to use, open-ended comments and advantages/challenges.

Meeting Survey - Please indicate how strongly you agree that the platform did the following.

1=Strongly disagree; 5=Strongly agree (WebEx n=16; Zoom n=64 for all except where noted)	WebEx		Zoom	
	Mean	(SD)	Mean	(SD)
Facilitated individual meetings	3.63	(1.0)	4.56	(0.7)
Increased effectiveness in my work	3.19	(1.3)	4.38	(0.8)
Increased the likelihood of recommending it to colleagues	2.38	(1.3)	4.73	(0.6)
Allowed me to engage with others in innovative ways (Zoom n=63)	3.13	(1.0)	4.21	(0.9)
Increased my satisfaction with meetings (Zoom n=63)	2.69	(1.2)	4.32	(0.8)
Facilitated small group meetings (WebEx n=15)	3.67	(1.2)	4.75	(0.4)
Increased efficiency in my work	3.19	(1.3)	4.38	(0.8)
Was an easy way to connect virtually	2.50	(1.4)	4.80	(0.4)

Meeting Survey – Rate these features.

1=Not at all useful; 5=Very useful (WebEx n=16; Zoom =64 for all except where noted)	WebEx		Zoom	
	Mean	(SD)	Mean	(SD)
Screen sharing	4.14	(0.9)	4.88	(0.3)
Host Control	3.93	(0.8)	4.58	(0.7)
Recording/ sharing	2.89	(1.6)	4.62	(0.6)
Chat group messaging (Zoom n=63)	3.57	(1.2)	4.58	(0.6)
Document Sharing	3.67	(1.4)	4.69	(0.6)
Participation icon usage/ non-verbal feedback features	3.27	(1.2)	4.21	(0.8)
Breakout Rooms	3.25	(1.3)	4.25	(0.8)
Whiteboard	3.13	(1.1)	4.12	(0.9)

Qualitative Feedback - Meetings

Qualitative data was also collected from faculty and staff meeting pilot participants through open-ended survey response items. Qualitative data including open-ended response comments on the meeting survey was largely in favor of Zoom. Below is a representative sample of comments. For a list of all comments see Appendix A.

What would make you more comfortable using the platform(s) you tested?

Zoom Comments	WebEx Comments
"More experience with Zoom would help. A simple instructional guide and quick intro tutorial about what features it includes."	"Nothing, I feel very comfortable with WebEx."
"Ease of scheduling, calendar invites to colleagues with simple instructions for logging on, intuitive controls, ease of use by people who are unfamiliar."	"We had a very hard time hearing our distance learners when they wanted to ask a question or participate in class discussions. We also had some bandwidth issues that caused their screens to freeze reminiscent of a "buffering" time lag (that's not a WebEx problem though)."
"I would like more formal training in Zoom."	"Videos/quick info sheets on how to use unique features."
"Zoom is pretty self-explanatory. Even if the participants are confused on how to use the software, as a host, you can do a lot of customization (especially in settings) to make the experience much easier for participants."	

Meeting open-ended feedback (select responses)

Zoom Comments	WebEx Comments
"…Zoom can be tough to figure out."	"I feel very comfortable with WebEx"
"I would love for Temple to adopt Zoom so that everyone can use it!"	"WebEx had audio problems on my laptop."
"I was actually very comfortable with Zoom. I thought that it worked better than WebEx and that it was more intuitive to use."	"We need a platform through which we can record class lectures. I have yet to receive an email link from WebEx with the class recording....and I requested one every week! We need a platform where the distance learners can still see videos that in-class lecturers have embedded in their PowerPoint presentations. We need better audio so that distance learners can meaningfully participate and be heard. And we need to ensure (internally) that our bandwidth will support up to 20 class participants at a time. Thank you!!"
"I strongly prefer Zoom, it is much easier to use."	"Zoom is clearly the better product. I can count on every WebEx meeting starting late and having to do at least 5-10 minutes of troubleshooting with at least one attendee. That did not happen at all when using Zoom."
"Zoom is pretty self-explanatory."	
"We used Zoom for interviews. It was far easier to connect with Zoom than with Skype and sound and video quality were superior. Please adopt."	

Meeting Feedback - **Advantages and Challenges** - This section summarizes the feedback obtained from the meeting survey and is organized by advantages and challenges.

Advantages

- General
  - Many preferred Zoom.
  - Easy to use and not much training needed.
- Interface and Design
  - Intuitive interface – “clean user interface”.
  - Easy to use.
- Overall
  - Most found Zoom easier to use than other alternatives.

Challenges

- Meeting pilot participants did not mention any challenges.

Section 6: Zoom Updates and Suggestions for Enhancements

Zoom generally provides monthly software updates and documentation on new features and bug fixes. The company continuously strives to enhance application features and functionality and welcomes recommendations from end users on ways to continuously improve their product.

Following the university WVC pilots, the WVC Committee gathered information on features/user interface requirements in Zoom that could be improved. During and after the pilots, requests were made to Zoom, resulting in the enriched changes below.

- Ability to turn on/off the chat option within each class instead of from the global settings menu.
- Ability to share files more easily when Zoom meetings are in progress, not just through the chat feature.
- Ability to import and export polls for re-use in other classes.
- Pre-assignment of breakout rooms (in beta testing and planned for the Zoom 4.5 version end of August 2019).
- Online tech support when students have issues (available 24x7 via chat, email and phone with signing of our new agreement).
- Attendance reporting improvement for recording accurate student presence.

Additionally, ITS is continuously gathering feedback and compiling information to share with Zoom on other possible enhancements. Requests from the School of Pharmacy Regulatory Affairs Quality Assurance (RAQA) include:

- Ability for system administrators to gain access to courses as needed (to assist instructors in courses with technical issues, recordings, equipment setups, add/delete students, etc.) instead of globally being added to each instructor course.
- Live stream of the instructor on the upper corner and ability to reposition students participating in class.
- Capability to easily resize Zoom visual images.

- Ability to enlarge and move chat box on screen/display.
- Ability for system administrators to obtain recordings for all RAQA Zoom classes to make sure they comply with State Authorization Reciprocity Agreement (SARA) quality standards.
- Possible adjustments to Zoom recording functions and movie/video files.

Section 7: Impact on Faculty and Training Services

The Center for the Advancement of Teaching (CAT) is the university unit charged with support for training and use of educational technology for faculty on all campuses, including those abroad, and in all schools and colleges. Some colleges (e.g. Fox, CPH, and Education) have one or more instructional designers on staff to assist with training and support while others (for example CLA, Tyler or CST) have no dedicated personnel for this purpose.

In past pilots and university platform changes, CAT has acted as a resource to train and educate faculty on the use of a new technology. With expertise in pedagogy, they help guide faculty in the effective use of new technologies to augment their teaching in the classroom. In preparation for the pilot, CAT conducted two "Getting Started with Zoom" sessions for faculty. Not all faculty participated in the training as some did not feel it was necessary.

Faculty training will be important for this transition and needs to be carefully planned out. There were several pilot comments, which reflected opportunities for training or quick reference guides that will support faculty in the transition to Zoom. There should be a concerted effort to coordinate the transition time of the WVC recommended platform to coincide with training and materials that CAT will be able to provide. We are also aware that students will likely need training. We believe that the Zoom video library should work for most students; however, there may be a need to add supplementary training.

We envision a variety of support services for faculty to supplement those already available including:

- Train-the-trainer sessions for all personnel who have responsibilities around training.
- The expansion of the Ed Tech Student Fellows program under the CAT.
- Incentivize early adopters of Zoom to be on-site consultants (CAT Faculty Partners) within their colleges.
- Hire graduate students to support the CAT in creating additional resources and materials to push out to faculty and trainers, including:
    - A knowledge share forum for trainers.
    - A CAT website page to provide online training materials.
    - A weekly digest with tips for more effectively using Zoom.
    - Blog entries for Ed Vice Exchange.
    - Creation of any tutorials not already available.
- Review other University implementation plans and logistics to determine if they are applicable to our plan.

CAT will work closely with Information Technology Services (ITS), specifically the Academic Applications and Help Desk groups on the Zoom transition, training and support. Zoom also provides a library of online videos and 24x7 chat, phone and email support.

Section 8: Administrative (non-Faculty) Setup and Support

The following areas were reviewed from a technical perspective.

- Recording capabilities
- Canvas integration
- Reporting capability
- Billing
- Service and support
- Global infrastructure
- Service level agreement (SLA)
- Account transfer
- Administrative levels

Most of these areas were straight forward to configure or review. Zoom was readily available to assist us with any issues. At the beginning of and throughout the Zoom pilot, we had bi-weekly status calls with our Zoom account manager and Zoom technical resource. Over the entire pilot, we experienced only a few minor issues mostly related to local equipment. Overall, Zoom has been readily available and responsive to our needs during our WVC evaluation.

Section 9: Accessibility and Security

Accessibility

Zoom is functionally accessible to Web Content Accessibility Guidelines (WCAG) certified by WebAIM.org. Web Content **Accessibility Guidelines** (**WCAG**) define how to make web content more **accessible** to people with disabilities including visual, auditory, physical, speech, cognitive, language, learning and neurological disabilities. In accordance with Temple guidelines, Zoom may be purchased without the need for a written software exception request, since it meets WCAG 2.0 Level AA standards.

Text provided from Zoom's website - May 2019:

> "At Zoom, we test our products with keyboard-only, and with the latest screen readers. Using knowledge gathered from customer feedback and from our own testing, we train our teams to sustainably build accessible products. Our products are compliant, with exceptions, with the following standards:"
>
> - WCAG 2.0 AA Standards
> - Revised Section 508 Standards
> - EN 301 549 Accessibility requirements

Security

The security review was based on Zoom providing information about their internal operational and security practices that relate to storing protected and sensitive data. The Zoom security profile was approved by the Temple ITS Security team.

Appendix A – University Feedback

Faculty Open Ended Survey Feedback

Zoom was user friendly, high quality (video and audio) and had fewer glitches with streaming video than WebEx. The only thing missing is the preassigned breakout sessions. Students, however, had a very easy time adapting to the product with little to no instruction.

When I was teaching for Penn State, I was in the early adapters group when we moved from adobe connect (which was HORRIBLE) to Zoom (which was a million times better). I consider WebEx and zoom to both be good but find that Zoom is easier and records in the cloud which is useful.

Please note for future pilots that a mid-semester data collection would be helpful so we can utilize feedback from 7-week courses. Thanks!

I've used WebEx extensively in the past and Zoom this semester. The Zoom UI is just easier to use. Lightweight and intuitive. Integration into the Canvas LMI was seamless for me. Scheduling sessions -- both one-time and recurring was better with Zoom.

In-session tools and interface were better with Zoom, as were the recording options. What I saw on screen -- and what students saw -- was just cleaner with Zoom.

When I recorded a lecture that I planned to use for a presentation, my slides became pixelated and were not readable, so I ended up re-recording my audio in my PPT slides and use the auto play feature while I connected via Zoom from my remote location.

Zoom is easy and modern- most students use Zoom for other types of webinars and conferences. In order to attract students, we need to be offering the latest technology.

It's very easy for students to use and the breakout rooms are much more stable and interactive than WebEx. However, I wish that Zoom had better options for sharing slides other than screen sharing (i.e. importing into Zoom or viewing slides in presentation mode without taking over the full computer screen). Also, it is frustrating that the settings must be selected prior to starting a zoom meeting. Sometimes in teaching you want to be able to ask a question on the fly that you didn't plan to ask or change the chat settings to allow chat for a particular question, but not the entire class meeting, but within Zoom you cannot do this, it's all or nothing.

Would highly recommend.

I like Zoom a lot, and I'd love to stick with it going forward. It was easy to set up, easy to share with the students, and far more interactive than the distance technology that we used before.

"My overall assessment is that it does not offer the best fit for a course with more than 15-20 students (my course had 39).

Specifics (positives first):

1. The video is much clearer, and it was convenient to see multiple students at once.
2. It was convenient to pause/restart recordings anytime.

3. Students liked being able to see one another in breakouts.
4. The only option to run my slides was to share my screen (cannot share a file). When in slideshow mode, I couldn't see or access other applications/documents during class without exiting slideshow (students then saw normal slide mode until I could switch screens/files). Students provided feedback that this felt disconnected.
5. (I know you already know this) the lack of ability to pre-assign breakouts detracted from my ability to ensure diversity/quality.
6. Even when I changed the roles of guest speakers and student workers to co-host, they were still placed in breakouts. Awkward, and created single student breakouts in multiple sessions.
7. The attendance reporting provides no attention data and there is no parallel feature to the WebEx indicator (!) that alerts me to distractions in the Zoom classroom since I could only view 4-5 students at a time, I was constantly scrolling up/down while lecturing to check engagement and/or to vary who I asked to speak.
8. The attendance report stops/starts duration (assume when breakouts occur) so there are multiple duration entries for every student.
9. The meeting link disconnected in one session. Thankfully, Scott Stover was able to read my email and respond immediately with a repair; however, we were unable to figure out the cause. We couldn't scale this across many sections without finding/fixing the root cause.

My use of the platform was limited during the spring 2019 semester and as such my feedback should be treated as none exhaustive.

My students also felt more comfortable using Zoom versus WebEx.

I wish the breakout sessions were more seamless.

Not having pre-assigned breakout sessions is a big issue especially for group projects. Also, not allowing tech support to help during the session because they are not the host is also an issue. Aside from these, it has been a much better experience then WebEx

Very smooth transition from WebEx. But much easier to use then WebEx as well as mp4 video that I edited and uploaded to the class.

I have used zoom before for conference calls, and other trainings. I really like it. As an instructor, I need to become more comfortable with it, but that will come with time.

I previously used WebEx to facilitate multiple online courses and was very frustrated with its limited capabilities. It is slow and often crashed especially in breakout rooms. EVERY single time I broke students into breakout rooms and went into 3+ rooms the app would crash, causing us to cancel class early due to confusion.

Zoom is incredibly easy to use, fast, and reliable. I would highly recommend moving forward with Zoom over WebEx.

Zoom is very helpful for all online courses, hybrid courses, and meetings. The quality of the platform is ideal, especially for large groups. I especially enjoy the recording options so that students have high quality audio capture if they miss a class/meeting.

I really appreciated the Zoom platform for my conference calls but did not have the opportunity to use it for my teaching this spring. I prefer Zoom over WebEx for this purpose and would likely use it for teaching as appropriate.

Do not care for the layout. Adobe Connect is better. Need to be able to upload files in advance and share. Sharing screens is complicated with multiple monitors. The layout of Adobe connect is better organized and user friendly.

I would highly recommend that it be adopted.

Much easier to jump into Zoom then learning WebEx.

WebEx was a mess last year for the course I taught. Almost every session someone froze or lost connection. Zoom has been a much smoother process.

WebEx was clunky and problematic.

Zoom was overall better than WebEx, including faster and easier ways to share recorded classes. It was also nice to be able to easily see everyone, the screen, and controls at the same time. The only way WebEx is superior is its ability to share multiple tabs/screens. I could easily switch back and forth between a PowerPoint and an article in WebEx. This is not as easy in Zoom.

I used for patient simulation assignment for class. It was user friendly and fit the needs of the assignment.

Love Zoom. So much easier to use than WebEx and a cleaner and more friendly interface as well. I'm a convert.

Zoom is the best platform I have used. I was stunned when I recorded a lecture to send out and saved it to the Cloud. Ten minutes later the URL was emailed to me BUT ten minutes after that I got by email the URL along with closed captioning and written transcript. So easy and all by using just one platform. Furthermore, it lets you easily edit and save, if necessary, before forwarding a URL to the class. The students in a brick and mortar class I also had got to use it the week I was away & held the class online. It totally changed their outdated understanding of online technology. The video resolution is of outstanding quality. Very user friendly. So happy to use this over WebEx.

I liked it a lot, but don't use it and need IT support. Also, need to make sure that others (residents, faculty) are comfortable with it.

The phone app does not work well at all, this is disappointing.

Hard to see all the participants at once.

Student Open Ended Survey Feedback

Better than WebEx.

I've only used WebEx and Zoom and if I had to pick one of those two it would be Zoom hands down. Too many non-intuitive issues with WebEx.

Does Zoom allow for video during breakouts? If so, that is enough to make the switch because it's ridiculous that we only have audio for breakouts in WebEx.

My workplace switched to zoom. It is easier and quicker for me to use zoom as a result.

Please change to Zoom. It is much easier to set up than WebEx.

I don't like the visuals with Zoom. Five people were displayed on the screen, which was distracting. With WebEx, you see the person talking and that's it. Additionally, zoom was cumbersome as the controls of raising my hand to answer a question was delayed.

Zoom is better than WebEx. Unlike WebEx, Zoom allows students to see each other during breakout sessions. If online classes intend to facilitate group interactions and networking, this needs to be an option.

The breakout sessions were much better in Zoom than WebEx. The lectures were slightly smoother with Zoom than WebEx. Office hours seem to be equivalent.

I found zoom to be much easier to navigate than WebEx, the features were a little more intuitive.

As with WebEx --- most professors are unsure how to use the platforms. They continue to need the IT support person to handle most technical aspects of the platform. If the switch is made, the professors that have begun to use WebEx more efficiently will go back to ineffectiveness. Changing just to change is not a strategy - it is 'hoping' the new platform will be better.

Simply put - Zoom superior to WebEx in virtually every way.

"I have been in the OMBA for over a year and a half, primarily using WebEx throughout this time. After comparing WebEx with Zoom, I believe WebEx is the superior platform for the following reasons:

1. WebEx automatically shows the person speaking in the group, Zoom was inconsistent doing this.
2. WebEx automatically shows the list of speakers such that the host of the meeting is always visible. When using Zoom, I often lost the visual of the host and had to scroll to a separate screen to find his video, even when he was talking.
3. Zoom was laborious when it came to raising hands in class. We had to open a separate window which blocked the view of the speaker. WebEx does not have this issue.

On a side note, the most difficult thing in WebEx is to share ""the ball"" in breakout sessions.

Similar platforms. Zoom seems easier to use for those who have trouble. Zoom also looks better- from a marketing standpoint.

Zoom is much easier to use than Adobe Connect.

I prefer Zoom to WebEx. I had several issues connecting with WebEx but have never had a problem with Zoom.

Breakout sessions with Zoom was a lot easier than with WebEx.

Would use zoom quality is better and it’s cheaper. I am online MBA student but also a professor at another university. We use zoom for these revisions.

Zoom was very easy to use, and it was great being able to see my professor and classmates the entire time. I especially liked being able to see my classmates when in breakout sessions. Zoom is MUCH better than WebEx.

I am in a program that used WebEx then switched to Zoom, and Zoom is far and away a better platform. While there are similar features, Zoom creates more interpersonal interaction than WebEx did, and that escalated my class time experience and allowed me to engage more with the content that was being presented.

Stop making weird technology choices--Blackboard was fine and Canvas is awful. Don't make it complicated. WebEx is fine.

Zoom is amazing and the interface is easy to use. I like how simple we can breakout in groups. I recommend Zoom for further use.

The use of the whiteboard on Zoom was more difficult to use, however overall Zoom was way better than WebEx.

Zoom was much more user friendly and had a clean user interface.

WebEx has already been integrated into the Fox program with success. I would not recommend changing that.

Zoom is a more user-friendly platform. I would recommend adopting Zoom.

WebEx seems to work just fine.

Zoom breakout rooms have video feature allowing you to meet your classmates. To my knowledge, WebEx does not.

Skype is extremely unreliable.

WebEx in second in that category and clunky. We used it at work, but it rarely ran smoothly, I often had to ask where certain features were.

Zoom was super easy. Having only one link for weekly meetings was the best. Because no-one wants to check their college email in search for that link... Just went straight into the calendar! Group work was cool.

I thought it was great and very easy to use. I had no problems and it was nice to be able to do my class from my bedroom.

Very, very easy to use. I have no complaints.

I wish you could keep your place in the video when you close the browser.

I prefer Zoom over WebEx. I found Zoom much more user friendly. I liked the view better and WebEx experienced many complications in my course.

Zoom is great and works way better then adobe. Do not go back to adobe, especially for seeing old class recording. Zoom worked perfect. Adobe always had issues playing back old recorded lectures. It would

freeze or volume would stop. In zoom i could even play the lecture back at a faster speed with no issues and could skip ahead or repeat parts. It has built in speed playback which is great.

It was easy to use and allowed me to watch the lecture when the time best fit my schedule.

I loved Zoom. I've used Adobe connect in past classes and Zoom is so much better in comparison. Zoom allows a truly interactive classroom feel. The sound quality is so much nicer, and the use of video and sharing is so easy. I also really enjoyed the ability to utilize breakout sessions.

In Adobe Connect, it was very difficult for the audio to allow an interactive dialogue. I would highly recommend Zoom!

I took two classes this semester and one used WebEx and the other used Zoom. Comparing the two, WebEx had a lot more connectivity issues for the instructor whereas Zoom did not have ANY - throughout the entire semester! I was very impressed. Zoom was great at breakout groups and sharing screens as well as the chat function. Students were able to raise hands which also helpful in our class.

I've used WebEx outside of a classroom setting, and Zoom is absolutely, easier to use. Screen sharing is particularly easy with Zoom. My class never had issues with connections and stuff.

Everything is easy to use.

A feature to join the call without video or microphone, for a class setting.

It was super helpful and easy to use! My class met once a week and we would use the chat feature, screen sharing and breakout room every single class. It was awesome! It felt like a real classroom setting.

I prefer Zoom over WebEx.

Zoom was easier to access.

I didn’t once ever have any technical issues logging in or hearing audio that I frequently had with WebEx. Everyone struggled in the beginning because no one knew about certain features. Once the professor and everyone got used to all the features it was great because we could answer polls/questions or raise our virtual hands to talk about certain subjects or answer questions. It made the class more organized than people just randomly starting to talk. I am almost done with the OMBA, so I've taken a lot of classes via WebEx and I liked Zoom better from the very first class. I hope they continue using Zoom for the few classes I do have left. Training the professors ahead on all the features would be beneficial so they could run through how to use all the features to the students to better engage the classes and get them answer polls or questions.

I liked both but find Zoom to be easier to navigate both as a student and as a staff member/host of meetings. I do think they need to update the functionality of Zoom so that breakout groups can be decided in advance of meetings. Once they fix that issue, I am totally on board to use Zoom and get rid of WebEx.

We used WebEx during the fall 2018 semester and switched to Zoom during the spring 2019 semester, which I was not happy about. But, with some practice and experience, we finally got the hang of Zoom

and it worked very well. Not sure which platform I would recommend. I would probably suggest looking to the professors that taught/facilitated the classes for their recommendation.

The program was easy to use and guides you along.

Zoom allows you to enhance your appearance on the video. That was helpful for my pale complexion.

The login process was much cleaner with Zoom. Also, the ease of hiding certain features was easier. But it was difficult to show a full PowerPoint presentation when I was forced to always see so many of my peers on the side of my screen. I wish I could minimize their size or only see 1-2 of them so I could see all the details of each PPTX slide.

I liked Zoom better.

Graduate program should utilize this to make classes available online for students. This is a great way of education with less expenditure of time and energy on the commute.

Zoom was easier to use on my smart phone.

It seemed like WebEx had more features readily available. Maybe it was because I got used to using WebEx then we started using Zoom which then took me awhile to learn its components. They both were good for me. I believe if anything, it would be best to determine which is best for the instructor because they are the ones that are in control of most of the features listed in the Likert above.

As a mac user it was difficult to connect to the platform.

Meeting Pilot Open Ended Survey Feedback

I greatly prefer the UI (User Interface) of Zoom over WebEx.

Please select Zoom. It has truly made our lives at the help desk easier.

Zoom is very user friendly compared to WebEx, so I am glad that Zoom is being considered.

I like very much how easily Zoom can be recorded on the cloud or the pc vs WebEx recording to cloud that I found it took longer to convert after the meeting. It is very easy to set up a Zoom meeting invite, and the sound works better.

We need a platform through which we can record class lectures. I have yet to receive an email link from WebEx with the class recording....and I requested one every week! We need a platform where the distance learners can still see videos that in-class lecturers have embedded in their PowerPoint presentations. We need better audio so that distance learners can meaningfully participate and be heard. And we need to ensure (internally) that our bandwidth will support up to 20 class participants at a time. Thank you!!

We used Zoom for interviews. It was far easier to connect with Zoom than with Skype and sound and video quality were superior. Please adopt

Zoom is fantastic for webinars. You can customize it so that your participants can't talk.

There is also a push to talk feature, which is amazing! You can have yourself mute the entire time. If you ever need to talk, just hold down the space bar.

As the host, you can ask others to share their camera feed if they can't navigate to the camera icon.

There's a separate option to join audio via phone conference or your laptop.

Zoom has the capability of allowing video conferencing units, such as a Polycom, to participate in the meeting. All you need is an IP address or a SIP address.

You can edit your meeting ID to a number you can memorize no matter where you're located.

You can join your meeting without signing in. You can gain host controls, if you know your host key

With Zoom, there is live streaming capabilities. I haven't tried it yet.

Recordings can be stored locally or in the cloud.

You can pin content on the screen. Maybe you only want one individual to be displayed full screen; you can pin that person so that you can only see their face and everyone else is in the gallery view.

Zoom has so many fantastic features. I love the program!

Zoom is very good.

Additional feature that we would like is to be able to control participant settings.

Zoom is far better than WebEx because it's easier to use and automatically has a call-in option for people who don't have audio on their computers. With WebEx, there's no call-in option (at least in my department), which causes a lot of issues.

From the user's point of view, all 3 seem comparable. I think that Zoom's video recording in the cloud is the most user friendly of the recording platforms. I found the WebEx recording format (proprietary, at least a couple of years ago when I was using it, don't know what they have now) a little awkward to use compared to Zoom's. I am impressed with Zoom's video recording quality. I would vote for Zoom.

Please get Zoom!

Zoom is clearly the better product. I can count on every WebEx meeting starting late and having to do at least 5-10 minutes of troubleshooting with at least one attendee. That did not happen at all when using Zoom.

(Zoom is) much better than WebEx, especially the VoIP audio.

WebEx had numerous audio issues in the past year, and still does have choppy audio.

Felt that the video clarity was better too with numbers of video participants.

Also, can have more live video participants than WebEx in Zoom.

I think Zoom is much easier to use than WebEx. I also think the recording quality is much better than that of WebEx. The WebEx recordings I made were often grainy and the visual didn't match the audio.

Use zoom.

Overall, I think that Zoom may have more functionality. When I out of the office not at home, I use a university-provided Chromebook. Since WebEx doesn't work with that, I'd prefer Zoom.

Easy to use.

Please adopt Zoom! It is an excellent tool that offers features for online learning and research meetings that are not available in WebEx and other competing products.

I like Zoom because it allows participants multiple ways to participate. For example, many of the people attending my Zoom meetings did not have access to webcams and/or mics in their office, nor did they have mobile devices. The call-in option allowed them to still participate. They used their PC to see what was being shared but called in to hear the audio. This makes it more accessible to everyone. Other platforms charge for a dial-in number or don't offer that option at all.

I also recommend Zoom because the app is very easy to use.

No technical difficulty for myself or anyone participating in the meeting, which is so different that my WebEx experiences.

I used Zoom to record a training I conducted live on WebEx. I forgot to hit the record button in WebEx as I dealt with some technical difficulties on that platform where folks could not hear my voice. Once that was solved (it was on the audience end) I just moved right along with my webinar. Ultimately, I set up a new meeting and hit record and re-did my presentation. The plan was to email the recording out to those who couldn't make it. The fact that there was no live audience was not an issue. Only after spending more than a half hour on the recording did I find out (when I went to retrieve it from the Cloud) that I was out of space, so it did not record, that's when I went to Zoom. I found it easy to record there, though it did take some time for the file to become available. I wish I had a headset, though, because the built-in mic for my HP laptop didn't get the best audio. If I were to do a recording again, I'd want a headset - but I don't know if it's feasible for lots of folks to purchase these (or to "rent" them from A/V as needed).

Preferred Zoom to WebEx.

Zoom is easy to use, and the setup worked perfectly.

I recorded a short PPT presentation that I chose to save on my hard drive.

Only the ...convert_01 file was available, but not the ...convert_02 file.

Both were needed & the recording was unrecoverable.

I found Zoom more reliable than WebEx in terms of sound and video quality. It was easy to set up meetings, invite people, and get the platform to work on both my desktop and laptop.

(Zoom) is a more accessible platform (for screen readers) and is much easier to navigate than WebEx.

It works much better than WebEx. It's easier to use and more user friendly.

Honestly, Zoom is just better than WebEx. Better LMI integration, better user experience, and just easier to use. I've been using WebEx (and Adobe before that) for years, and Zoom is just qualitatively better for me and my students.

At the Institute on Disabilities, we often work with self-advocates -- people with disabilities in charge of their own life plans, resources, decisions, and supports. Our policy director regularly meets with self-

advocate groups using Zoom and finds that they don't want to use anything else. They find it presents very few barriers to connecting with one another.

General, Unsolicited Email Feedback

Linda Smith <tuj20927@temple.edu> Fri, Sep 21, 2018, 6:38 PM
Hi!
I am an adjunct professor teaching the Science for the Early Years class for the College of Education.

I have been using zoom for several years now in many ways, such as running national meetings, meeting with student teachers and their mentors.

This semester I have a student that has problems with migraines and tends to miss a lot of classes. With an attempt to help, I have been using Zoom to record my classes so that she might have them as a resource if she is too ill to attend. It seems to be working well for her, just wanted to let you know.

Heather Murphy <heather.murphy@temple.edu> Wed, Jan 16, 2:50 PM
Dear Web Conference Committee,

I much prefer using Zoom over WebEx. Currently our WebEx does not have the capability for people to phone in internationally instead of using an internet connection. I work with partners across the US and globally and the versatility in people being able to connect via phone or internet is valuable. I also prefer the recording functionalities of Zoom. We have also noticed that the quality of the calls with partners in developing countries is better with Zoom than with WebEx.

Thanks

Heather

Heather M. Murphy, Ph.D., P. Eng.
Assistant Professor
College of Public Health
Temple University

1301 Cecil B. Moore Avenue
Ritter Annex - 9th Floor
Philadelphia, PA 19122
[office] 1-215-204-4766
[cell] 1-267-469-8066
[fax] 1-215-204-1854

Stephen Lepore Temple <slepore@temple.edu> Wed, Jan 16, 8:20 PM
I have been using Zoom for several weeks and appears to be quite reliable and intuitive to use. I prefer it over WebEx.

Sincerely,

Stephen Lepore

Laurie Friedman <lauriefr@temple.edu> Thu, Jan 17, 9:26 PM
Hi,
I've been using zoom for the following and have not had any issues.

1. Recruitment sessions for SSW with 20-50+ participants. Prospective students are able to log in and use chat and video/audio to interact with us.

2. Online courses. Our students used zoom in class for counseling role plays in breakout sessions as well as on their own to record role plays.

I have received no complaints or issues from students. The process has been seamless.

Thanks!

Best,

--
Laurie Friedman, PhD, MPA, LCSW
Pronouns: She/Her

Online MSW Coordinator and Assistant Professor of Instruction
School of Social Work
College of Public Health
Temple University
589 Ritter Annex
215-204-8779

To learn more about our online MSW, visit us here

"Be a nuisance where it counts; Do your part to inform and stimulate the public to join your action. Be depressed, discouraged, and disappointed at failure and the disheartening effects of ignorance, greed, corruption and bad politics- but never give up." - Marjorie Stoneman Douglas

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Deirdre Dingman <deirdre.dingman@temple.edu> Wed, Jan 16, 10:11 PM
One thing i noticed is that when participants are in breakout rooms and the hosts sends them a message, there doesn't seem to be an intuitive way for them to respond, e.g. to say they need more time. I guess they could send a chat message.

Deirdre Dingman, DrPH, MPH, CHES
Assistant Professor
College of Public Health
Department of Social and Behavioral Sciences
Ritter Annex Room 949

1301 Cecil B. Moore Avenue
Philadelphia, PA 19122
deirdre.dingman@temple.edu
215-204-6370

From: Courtney Spencer <cspencer15@gmail.com>
Sent: Tuesday, February 5, 2019 7:37 PM
To: Mark Haubrich <mhaubrich@temple.edu>
Subject: Re: Happy New Year!

Hi Mark!

I hope you have had a great start to the year.

Zoom is GREAT. I can't even begin to tell you how much easier, faster, and great it is compared to WebEx. It is specifically a lot better for breakout rooms — WebEx would always kick me out of the breakout rooms, lag when flipping from room to room, and crash / cause the class to shut down and end class.

However, I am experiencing one hiccup with breakout rooms in zoom I was hoping to get help with?

When I break students off into groups, **there is always one student who does not get grouped into the breakout groups**. Previously, she was accessing the class on her phone, but is experiencing the same issue when she accessed the class on her computer. Additionally, I cannot manually add her to the class — her name does not appear at all in the breakout room group.

Let me know if you have experienced this issue, and if you are aware of any solutions. My solution, for now, is to put her in the main group with a few other students and fake the breakout room experience.

Thank you!

Courtney

From: Abby Guido <abby@temple.edu>
Sent: Monday, January 7, 2019 9:47 AM
To: Cindy Leavitt <cindy.leavitt@temple.edu>; Susan P. Hyer <susan.hyer@temple.edu>
Cc: Courtney Spencer <cspencer15@gmail.com>
Subject: Re: Happy New Year!

Hi Cindy and Susan

Thanks so much for the opportunity to be a part of the pilot for Zoom. I have cc'd Courtney on this email. This is her 3rd or 4th time teaching a synchronous course online, so I think she'll be able to provide great feedback on how Zoom works in comparison to WebEx.

Best, Abby

On Mon, Jan 7, 2019 at 8:39 AM Cindy Leavitt <cindy.leavitt@temple.edu> wrote:

Dear Abby,

Congratulations on becoming an Adobe Education Leader. It is well deserved and nice for you to have that community of peers to learn from.

We would be happy to have your adjunct participate in our Web Conferencing pilot. I am copying Susan Hyer who is leading the project. Adobe dropped out of the pilot, so I would recommend using Zoom for the course to see if it better meets the need of the course and students.

Please let us know who the faculty member is and how to reach them to get them setup for the pilot.

Have a great day,

Cindy

From: Abby Guido <abby@temple.edu>
Date: Friday, January 4, 2019 at 12:26 PM
To: Cindy Leavitt <cindy.leavitt@temple.edu>
Subject: Happy New Year!

Hi Cindy,

Hope you had a great holiday with your family. I was able to shut down for a full week which was really nice.

First, I wanted to share some exciting news with you, Stephen Hart had nominated me to become an Adobe Education Leader which I applied for and was accepted. There are about 200 AEL's worldwide, so it's a really exciting opportunity to meet and share information with other educators.

Second, I wanted to see if it is possible for one of our adjuncts to test out one of the new video conferencing tools for our Mobile Apps online course. In the past, we've had a lot of technical issues with setting up breakout groups on WebEx and she was asking if there was another tool she could use. She'll be teaching remotely from Los Angeles, so it could be an interesting case study to see how it works from there.

Thanks for any help you can provide.

Best, Abby
--

Abby Guido
Assistant Professor
Graphic and Interactive Design

Tyler School of Art | Temple University
2001 North 13th Street, Office 240O
Philadelphia, PA 19122
917.523.2817

Hi,

Zoom pilot is going great. I've used it a number of times, including with Temple Japan, and it's a huge step in the right direction. Taking away the step of "here's the conference call number for sound" and secondarily, here's the WebEx for screen-sharing.

I'm ready to switch over anytime!

Thanks for letting us in on the pilot.

David M. Benson
Associate Director, Continuing Education Systems
Temple University
215-204-2261
Dbenson@temple.edu

Good afternoon,
I wanted to share how nice the Zoom telephone option is.
Since conference lines are shared, I would have to find an open conference line to reserve before making a meeting.
This involved searching and editing files in Box, sending emails and calling around to find an open line.

Since Zoom has this telephone feature, I just reserve a line when I create the meeting (one step).
Thank you!!!

Thanks,
Erin Marker
Assistant Director
Temple University
215-204-4044(O)
erin.marker@temple.edu

From: Christine Wittrock <cwitt@temple.edu>
Date: Tue, Mar 26, 2019 at 12:52 PM
Subject: Re: Zoom
To: Matthew Noonan <matthew.noonan@temple.edu>
Cc: WENDY LEBING <wlebing@temple.edu>, David Brickett <dbrick@temple.edu>, <kzimm@temple.edu>, <sta@temple.edu>

Hi All,
Great feedback- I really like Zoom as well.
I experienced a bit of an audio delay when watching a video with the class. But this was not an issue when I included closed caption.
I only once had a video issue when recording a class, but I was not using Ethernet (forgot to plug in). Never had issues, students like it too.

Shawn since you trained me, I am including you in case you can provide feedback to our reported glitches.

All good!

Courage is not the absence of fear, but rather the assessment that something else is more important than fear. Franklin D. Roosevelt

Chris Wittrock
610-662-1412

On Mar 26, 2019, at 5:14 AM, Matthew Noonan <matthew.noonan@temple.edu> wrote:

Hi Wendy and Dave,

I am using Zoom for both courses this semester. I really like it. Fundamentally, the meeting integrity seems much stronger than Adobe Connect. Students do not drop off from class, and neither do I! Also, recordings always play perfectly for me, another improvement over Adobe Connect.

It is very similar to WebEx, except in my opinion the Zoom audio is better than WebEx. For Zoom, we use computer audio just fine. For WebEx, I often find that phone audio is clearer.

Also, in Zoom, multiple webcams can be active at the same time without loss in meeting quality.

I polled students in both courses, and not one student preferred Adobe Connect over Zoom.

I asked for further feedback about Zoom:

- One student said the Zoom phone app isn't great. I have installed it but haven't used it.

- One student said he had to download/install Zoom on his computer before every class. I have not had that problem. Other students have not had that problem. I suspect it's an issue with his computer.

And here is my feedback:

- Zoom takes a little re-positioning to fit the slides, chat box, and participant list on the screen at once.
- Coming out of breakout sessions, my webcam switches to a student's webcam for some reason (even if the student's webcam is not active).

Overall, I much prefer Zoom.

Thanks,
Matt

DANIEL J. CANNEY canney@temple.edu Fri 5/3/2019 10:03 AM

Hi Mark,
In general, I thought it went well. It certainly met my needs for this specific purpose. Thank you for your assistance.
I did wear headphones, but it was difficult to hear depending on who in the room was speaking and where they were positioned. It was especially difficult when more than one person was speaking at the same time.
There was also a slight delay that did not really impact my ability to see and hear what was going on.

Overall, I was very pleased to be able to participate from my distant, very isolated site.

Regards,
Dan

Appendix B – Survey Detail

The features/functions rating is consistent with the survey scale where applicable. N/A means this feature was not used and therefore not counted in the percentage.

Student Survey Detail

Platform(s) tested during Meeting Pilot	N	%
Zoom	135	77.1
Both platforms	29	16.6
WebEx	11	6.3
TOTAL	175	100.0

Platforms used before Meeting Pilot Period (N=222)	N	%
WebEx	118	53.2
Zoom	69	31.1
Adobe Connect	24	10.8
Skype	4	1.8
Google Hangouts	2	0.9
GoToMeeting	2	0.9
Other	3	1.4

Comfort Level w/WVC Technology prior to Pilot	N	%
Completely Comfortable	56	32.2
Comfortable	66	37.9
Neither comfortable nor uncomfortable	29	16.7
Uncomfortable	13	7.5
Completely Uncomfortable	10	5.7
TOTAL	174	100.0

Temple Campus	N	%
Main Campus	93	50.3
Health Sciences	14	7.6
Center City	8	4.3
Japan	1	0.5
Ambler	1	0.5
Non-campus location	67	36.2
Other	1	0.5
TOTAL	185	100.0

School Affiliation	N	%
Fox School of Business & Management	58	32.4
College of Public Health	36	20.1
Lew Klein College of Media and Communication	24	13.4

School of Pharmacy	17	9.5
College of Science & Technology	10	5.6
College of Education	11	6.1
Tyler School of Art	8	4.5
School of Sport, Tourism and Hospitality Management	7	3.9
College of Liberal Arts	2	1.1
Beasley School of Law	2	1.1
University Studies	3	1.7
University College	1	0.6
TOTAL	179	100.0

Student Level	N	%
Undergraduate	50	28.4
Graduate/Professional	126	71.6
TOTAL	176	100.0

Undergraduate Matriculation	N	%
1st year student	32	64.0
Transfer student	18	36.0
TOTAL	50	100.0

Undergraduate Credits Completed	N	%
0-29 credits	3	6.0
30-59 credits	11	22.0
60-90 credits	19	38.0
90+ credits	17	34.0
TOTAL	50	100.0

Devices Used	WebEx (N=40)		Zoom (N=164)	
	N	%	N	%
Laptop/desktop	36	90.0	151	92.1
Tablet	2	5.0	10	6.1
Smartphone	3	7.5	22	13.4

Purpose of Use	WebEx (N=40)		Zoom (N=164)	
	N	%	N	%
Routine class meetings	25	62.5	138	84.1
Breakout sessions during class	20	50.0	97	59.1
Small groups outside of class	22	55.0	28	17.0
Attending open office hours	8	20.0	55	33.5
One-on-one meetings	7	17.5	24	14.6
Viewing a recorded lecture	15	37.5	46	28.0

Attending a session with a guest speaker	4	10.0	15	9.1
Other	1	2.5	3	1.8

Responses for Other Above (n=3)
1. I have used Zoom at work in conference meeting as well
2. Telemedicine assignment
3. Telemedicine simulation

How many times did you request technical help during the semester?

Frequency	WebEx	Zoom	Both
None	6	119	21
Occasionally (1-3 times)	1	5	6
Sometimes (4-9 times)	0	0	2
Most of the time	0	2	0

If you requested help, how did you receive it?

Source of Help	WebEx	Zoom	Both
TU Helpdesk	1	0	4
WebEx Chat Support	0	-	4
WebEx Phone Support	0	-	1
Zoom Chat Support	-	2	3
Zoom Phone Support	-	1	1
School/College IT Support	0	1	2
Other	0	2	0

Responses for Other (n=1)
1. Professor had to request help

Faculty Survey Detail

Platform(s) tested during Faculty Pilot	N	%
Zoom	**40**	**95.2**
Both platforms	2	4.8
WebEx	**0**	**0.0**
TOTAL	42	100.0

Platforms used before Faculty Pilot Period (N=73)	N	%
Zoom	15	20.5
WebEx	38	52.1

Adobe Connect	13	17.8
Skype	2	2.7
Google Hangouts	0	0.0
GoToMeeting	2	2.7
Other	3	4.1

Comfort Level w/WVC Technology prior to Pilot	N	%
Completely Comfortable	25	59.5
Comfortable	11	26.2
Neither comfortable nor uncomfortable	5	11.9
Uncomfortable	1	2.4
Completely Uncomfortable	0	0.0
TOTAL	42	100.0

Temple Campus	N	%
Main Campus	34	73.9
Health Sciences	1	2.2
Ambler	1	2.2
Harrisburg	1	2.2
Japan	1	2.2
Other	8	17.4
TOTAL	46	100.0

School Affiliation	N	%
College of Public Health	12	27.3
Fox School of Business & Management	8	18.2
College of Science & Technology	4	9.1
School of Social Work	4	9.1
Tyler School of Art	3	6.8
School of Pharmacy	3	6.8
College of Education	2	4.5
Beasley School of Law	2	4.5
Lewis Katz School of Medicine	1	2.3
College of Engineering	1	2.3
School of Sport, Tourism and Hospitality Management	1	2.3
Other	3	6.8
TOTAL	44	100.0

Devices Used	WebEx (N=2)		Zoom (N=42)	
	N	%	N	%
Laptop/desktop	2	100.0	40	95.2
Tablet	0	0.0	0	0.0
Smartphone	1	50.0	8	19.0

Purpose of Use	WebEx (N=2)		Zoom (N=42)	
	N	%	N	%
Hosting Routine class meetings	2	100	35	83.3
Hosting breakout sessions during class meetings	1	50	23	54.8
Hosting small groups outside of class meetings	1	50	14	33.3
Hosting office hours	1	50	24	57.1
Hosting one-on-one meetings	2	50	24	57.1
Recording and posting a lecture	1	50	19	45.2
Hosting a session with a guest speaker	0	0	6	14.3
Other	0	0	2	4.8

Frequency of Use	WebEx (N=2)		Zoom (N=42)	
	N	%	N	%
Multiple times or each class	0	0.0	11	26.2
At least weekly	0	0.0	16	38.1
At least monthly	0	0.0	7	16.7
Less than once a month	1	50.0	8	19.0

Does someone assist you in hosting a class or break?

Frequency	WebEx	Zoom	Both
Never	0	28	2
Sometimes	0	7	0
Routinely	0	5	0

How many times did you request technical help during the semester?

	WebEx	Zoom	Both
None	0	22	2
Occasionally (1-3 times)	0	18	0
Sometimes (4-9 times)	0	1	0
Most of the time	0	1	0

If you requested help, how did you receive it?

Source of Help	WebEx	Zoom	Both
TU Helpdesk	-	3	0
WebEx Chat Support	-	-	0
WebEx Phone Support	-	-	0
Zoom Chat Support	-	2	0
Zoom Phone Support	-	1	0
School/College IT Support	-	13	0
Other	-	3	0

Responses for Other (n=4)
1. Building IT support 2. Zoom documentation 3. Zoom online support 4. No text entered

Meeting Survey Detail

Platform tested during Meeting Pilot	N	%
Zoom	50	75.8
Both platforms	14	21.2
WebEx	2	3.0
TOTAL	66	100

Platforms used before Meeting Pilot Period	N	%
Zoom	78	42.9
WebEx	64	35.2
Adobe Connect	17	9.3
Skype	9	4.9
Google Hangouts	5	2.7
GoToMeeting	3	1.6
Other	6	3.3

How many years of experience do you have using video conferencing for meetings?	N	%
No recent experience	3	4.6
Less than 3 years	17	26.2
3-9 years	30	46.2
More than 9 years	15	23.1
TOTAL	65	100

Temple Campus	N	%
Main Campus	58	79.5
Health Sciences	6	8.2
Ambler	3	4.1
Japan	1	1.4
Other	5	6.8
TOTAL	73	100

School Department Affiliation	N	%
Public Health	19	27.5
Information Technology Services	11	15.9

Science & Technology	6	8.7
Education	5	7.2
University Libraries	5	7.2
Office of the Provost	5	7.2
Law, Beasley School	4	5.8
Liberal Arts	3	4.3
Pharmacy	2	2.9
Business & Management, Fox School	2	2.9
Medicine, Lewis Katz School	1	1.4
Engineering	1	1.4
Media & Communications, Klein College	1	1.4
Social Work	1	1.4
Art, Tyler School	1	1.4
School or college affiliation. Other	2	2.9
TOTAL	69	100

Devices Used	WebEx (N=16)		Zoom (N=64)	
	N	%	N	%
Laptop/desktop	15	93.8	64	100.0
Tablet	0	0.0	1	1.6
Smartphone	4	25.0	13	20.8

Purpose of Use	WebEx (N=16)		Zoom (N=64)	
	N	%	N	%
Small group meeting (internal)	10	62.5	45	70.3
Small group meeting (external)	10	62.5	40	62.5
One-on-one meeting (internal)	9	56.3	33	51.6
One-on-one meeting (external)	7	43.8	28	43.8
Hosting a webinar	1	6.3	7	10.9

How many times did you request technical support during the semester?

	WebEx	Zoom	Both
None	0	40	11
Occasionally (1-3 times)	2	9	2
Sometimes (4-9 times)	0	1	1

Appendix C – Supported Languages (from the Zoom website)

Language preferences can be set by the user, by the instructor in a specific course, or by the administrator for the entire account. The following are supported by Zoom clients:

- English—United States
- Chinese (Simplified and Traditional)
- French
- German
- Japanese
- Portuguese
- Russian
- Spanish
- On Android and iOS clients, Zoom's language is determined by the default operating system language.

Appendix D – Criteria

#	Criteria	Weight	Questions	WebEx Score	Zoom Score	Comments
1	Ease of use (user experience)	10%	a) Is the application easy to use and intuitive, even for occasional users? b) Is there consistency of the user experience across all end point devices?	4	8	Survey responses and email comments support Zoom is much easier to use.
2	Lecture style	4%	a) How many people can attend a live session? b) What roles are offered to control the session? c) How do you monitor student participation and engagement?	3	3	
3	Virtual breakout rooms/ sessions	7%	a) Are there virtual rooms people can use during an online course or meeting? b) Is there group discussion capability? What is the total number of breakout rooms that can be held in a meeting or class? c) Can the breakout rooms be recorded? Is there video in the breakout room? d) Can the instructor connect information and groups in real time? e) Can participants in the breakout room share	4	3	WebEx last 6 months not great (especially breakout rooms). Zoom feature not released yet.

			their desktop and files between each other? f) Can students join breakout rooms on any mobile device? g) Can participants join a breakout session already in progress? h) Is pre-assignment available for breakout rooms?			
4	Screen Capacity	4%	What is the ability to view thumbnails of all participants at one time while sharing media?	3	4	Zoom has more capacity (can see more students at one time).
5	Session Definitions	4%	a) How easy or difficult is a meeting/lecture style or training session to set up? b) How about setting up ad hoc or pre-scheduled meetings? c) Can students' setup a meeting? d) Can students host a meeting?	2	4	Easier with Zoom.
6	Webinars (One-Way Meeting)	2%	a) How many people can attend webinars? b) How many can be interactive? c) What is the call-in capability?	2	2	
7	Waiting Rooms/Office Hours	4%	Describe how waiting rooms work?	2	3	Easy to use with Zoom. WebEx on has in Meeting Center but not Training Center.
8	Browsers, mobile and operating systems	3%	a) Provide a matrix of all features that and how they work on each browser, mobile and client. B) Is there a consistent experience across each interface? Please explain.	1	3	Complaints about using mobile devices for WebEx.
9	Browsers	3%	a) Are there any browsers not recommended? b) List any plug-ins or add-ons that are required?	3	3	
10	Video quality	3%	a) Do you offer HD (1080), SD (720) across all clients? b) Does this scale depending on your bandwidth?	2	3	Zoom will scale to bandwidth, WebEx does not.
11	Whiteboard capabilities	4%	a) Can you save the whiteboard? b) Can multiple people interact simultaneously? c) Can whiteboards used in breakout sessions be shared with the main room?	4	4	

12	Application/ desktop sharing	4%	a) List all file formats that can be shared. b) Is there capability to pre-load files for a session? c) Do shared documents retain accessibility formats?	3	1	Zoom uses chat to upload a file, not screen reader compatible.
13	Meeting scheduling	4%	a) Is there capability to schedule recurring meetings/lectures? b) Can an auto-reminder email be sent for meetings? c) Which scheduling tools can be integrated? d) Can you schedule meetings through Canvas? e) How does the calendar integration work? f) Is there capability to change user roles?	3	4	WebEx LTI problematic. Zoom LTI worked after settings were determined. Not included in the bid RFP response.
14	Surveys and Polling	4%	a) Are there survey and polling capabilities? b) If yes, describe question types and export capability?	3	2	Zoom - although the poll results can be saved the poll itself cannot be imported or exported.
15	Mobile devices	4%	Please describe limitations using mobile devices?	1	3	From the information provided Zoom has fewer limitations than WebEx.
16	Recording capabilities	3%	a) What are options for retained recordings/recording management? b) What file format is available for downloading? c) Is there a robust API to integrate with other content management systems?	1	3	Zoom recording is easier. Neither integrate with Echo360 yet.
17	Dial-In/Capabilities	2%	a) Describe your integrated audio or 3rd party audioconferencing providers? b) What audio options are included at no additional charge in the meeting solutions license? c) If you provide international dial-in capabilities, is there an associated cost?	1	2	Note: WebEx has changed their Higher Ed pricing model with a new contract (better pricing).
18	WVC integration	5%	What WVC' do you integrate with? Explain functionality.	2	4	WebEx LTI problematic; Zoom LTI worked well.

19	Polycom/ other video conferencing integrations (SIP H.323)	1%	a) How is the integration into the conference room accomplished? b) Is there an extra charge for connecting conference room systems?	1	1	
20	Outside university attendance	4%	How can people from outside the university attend a meeting/lecture style or training session?	3	3	
21	Reporting Capability	1%	What are the reporting capabilities and available formats?	1	1	
22	Billing	3%	a) What are the charges for phone use and storage? b) Can billing be broken down by department?	0	1	WebEx billing is difficult as we have experienced. No Zoom billing experience.
23	Service and Support	4%	a) Does the vendor have all the following support options: Email? Phone? Chat? b) What tier support levels are offered? Other? c) What are the available support hours for end users and administrators?	1	4	Based on past experience WebEx support not good. Pilot experience with Zoom has been very good.
24	Security	0%	Has the application passed the TU security assessment?	0	0	
25	HIPAA/FERPA Compliance	0%	Describe how HIPPA compliance is achieved?	0	0	
26	Accessibility	0%	a) Has the application passed the TU accessibility assessment? b) Can you change the font point size? c) Describe any auto captioning and the languages available? d) Are all types of shared media-screen reader - readable? e) Can colors be inverted? f) Is high contrast mode available?	0	0	
27	Cost	5%	Explain the different licensing and cost models.	4	4	Both are close in price.
28	Product roadmap	1%	Is there a 12 to 24-month product roadmap? If yes, please share.	1	1	Both were willing to share their respective application roadmaps (although we have not seen them).

29	Language Support	2%	a) Can the application support other languages (i.e. Japanese, Italian) with real-time transcription? b) What is the accuracy rate? c) What is the process for 3rd party captioning vendors?	1	2	Generally, Zoom is further advanced with respect to language and language related features (transcription). Third-party needed for WebEx transcription.
30	Global Infrastructure	1%	Describe your global infrastructure for connections around the world especially between Japan, Italy and the USA.	1	1	
31	References	0%	Please provide references from other Temple higher education peer institutions.	0	0	
32	Service Level Agreement (SLA)	2%	a) What is your SLA for service availability and mean time to repair? b) Please provide your service availability for the past two years and list any interruptions and durations.	2	1	Information from other RFP documents: WebEx intends to provide 99.99% uptime (i.e.01. % downtime). Cannot find any info on credits. Zoom attempts to keep downtime to .1% (or 99.9% uptime). If exceeded will provide a credit. Not included in the RFP bid response.
33	Licensing options	0%	What are your licensing options to address our use case(s)?	0	0	
34	Account Transfer	2%	Describe in a single-sign on environment how to transfer a user account and all associated materials/data.	0	2	WebEx did not answer the question and I could not find the answer in their documentation. Zoom needs to be involved with account transfers.
35	Administrative Levels	0%	Describe the various containers and administrative levels.	0	0	
	TOTALS	100%		59	80	

Appendix E – External Research and References

External Research

- **Gartner Consulting –** During the WVC evaluation process (August 2018-May 2019) there were calls with the Gartner WVC specialist to discuss the higher education market in general as it relates to WVC, pros and cons, support, cost and strategy. Gartner also shared Gartner research papers on this topic.

- **Other University Research**
  Table E1 includes the universities and professional schools we researched to determine their WVC application. We learned that most universities who recently completed a WVC evaluation chose to move their platform to Zoom. Additionally, other universities planning a WVC pilot in the near future, mentioned that Zoom would be part of their next evaluation.

Table E1

The following table includes a list of universities and what WVC platform they use.
For undergraduate universities, 12 of the 19 universities (63%) listed below use Zoom and three of the 19 universities use WebEx (16%). The information in the following tables were compiled from Internet/University websites (Fall 2018).

Undergraduate College/University	Enrollment	Peer	R1	Web and video platforms
University of Pittsburgh	35,014	x	x	Skype for Business, Blue Jeans, Pockets of Zoom
University of Cincinnati	44,251	x	x	WebEx
University of South Carolina	32,972	x	x	Adobe Connect
University of South Florida	39,548	x	x	Skype for Business, Webinar and GoToMeeting
University of Utah	31,515	x	x	Skype for Business
Virginia Commonwealth University	31,163	x	x	Zoom
Florida State University	41,773	x	x	Skype for Business
University of Missouri	35,424	x	x	Zoom
Indiana University	33,429			Zoom
University of Buffalo	29,944	x		WebEx; Skype for Business
Penn State University	40,835	x	x	Zoom (primary); Adobe Connect; Bb Collaborate; Skype for Business; Google Hangouts
Rutgers University	35,641	x	x	Pockets of Zoom
Texas A&M	50,735		x	Zoom
University of Delaware	18,946	x	x	Zoom
University of Maryland	29,868	x	x	WebEx
University of Washington	31,331		x	Zoom
Arizona State University	82,000		x	Zoom

University of Arizona	35,123			Zoom
Berkley University	30,574			Zoom

The following tables list university professional schools and the WVC platform they use.

Pharmacy Schools	Enrollment	Web and video platforms
University of Florida	944	Zoom
University of North Carolina	706	Zoom
George Washington University	Not available	WebEx and Bb Collaborate

Law Schools	Enrollment	Web and video platforms
University of California - Berkeley	314	Zoom
Yale University	200	Zoom
Georgetown University	800	Zoom
University of Pennsylvania	251	Zoom
Florida State University	605	Unable to find

Medical Schools	Enrollment	Web and video platforms
University of Massachusetts	532	Adobe Connect
University of North Carolina	813	Skype for Business
University of Pittsburgh	591	Skype for Business; Zoom; Face Time
Thomas Jefferson University	1086	Adobe Connect
Stanford University	482	Zoom; Blue Jeans
Cornell University	406	Zoom
Tufts University	835	WebEx
University of Maryland	637	Skype for Business; Other Internal
University of Pennsylvania	783	Unable to find
Robert Wood Johnson (Rutgers)	707	Unable to find
Rutgers University (Newark)	729	Unable to find
University of Cincinnati	671	WebEx
Ohio State University	776	WebEx

Appendix F – Other Decision Factors

While the focus of a web and video conferencing platform revolves around online teaching, learning and electronic meetings, we also considered the strategic direction of Cisco and Zoom, operational support services, and external influences and organizations endorsing an application.

Strategic Company Direction

- **Cisco**– As a result of declining market share, Cisco has revised their licensing options for the Higher Education market. It is now less expensive than our current contract with more features included. They also started developing LMS integrations including one for Canvas. The Canvas integration we tested in spring 2019 was problematic.
- **Zoom** – Overall, Zoom is a forward-thinking company with an eye on future educational trends in the Higher Education market.

Operational Support

- **Cisco** support would remain the same as we have now, which is call-in for technical support.
- **Zoom** offers 24x7 chat, email and phone technical support as a standard feature with a signed agreement.
- **Zoom** will assign an account manager and technical contact to our account.

Other Information

- Zoom received the 2019 Global Video Conferencing Company of the Year Award from Frost and Sullivan. Frost & Sullivan is a business consulting firm involved in market research and analysis, growth strategy consulting and corporate training across multiple industries. It is headquartered in Mountain View, California.
- Gartner - In a September 2018 meeting solutions review, Gartner rated Zoom in the upper right quadrant as a leader and visionary. This is the latest Gartner publication WVC product review.