

DRAFT

2y2d Technology Focus Groups: Summary and Preliminary Recommendations

Process: Survey with 30 respondents, three focus groups with 15 participants (see listing of participants at end of report).

2Y2D Technology Focus Groups Facilitators

- Linden Rhoades, Vice Provost, Technology Transfer (Chair)
- Kelli Trosvig, Chief Operating Officer, UW Technology (Co-Chair)
- Sara Gomez, Vice Provost, Chief Information Officer, OIM (Co-Chair)

Note - much has been done to date about a systematic, well thought out process on information technology and information management. Most of the focus of both the survey and the focus groups did contain specifics regarding technology, however the primary discussion gravitated toward more of the future vision of higher education and how technology can be an enabler of future strategic needs.

2y2d Themes:

What can technology enable?

Leverage use of UW technology to lead the state; *Can UW change the benefits statement to the state constituents, what can technology enable – how do you align internal collaborations – what communities do they support? How can the UW infrastructure become, “the UW infrastructure incubator highway” – how to truly define value proposition?*

- **Technology per se is not the issue;** It’s what we do with it; what we can enable; hard to imagine what will be possible; failure of nerve, failure of imagination.
- **Forecasting vital;** Need good thinking about what the future holds in order to be thoughtful about what behaviors to incent; will require involvement of the digital natives to help define the future given how different they are wired.
- **Cost benefit of increased use of technology in academia** throughout the country (and world) will come to a crossroads that will require a major self-evaluation about how technology helps (or hurts) our mission. There is a fine line between leveraging the efficiencies gained through the use of technology in the academy and the downsides associated with the "hassle" factor (we're not all network administrators – see “Warm-ware” theme to follow) and unintended ways that tech takes away from the learning experience by forcing students not to think for themselves.

Reconceptualization of Student (undergraduate & graduate) Learning

All three focus groups gravitated toward the potential commoditization of undergraduate education – given the prevalence and increased availability of online education as technology enables more integrated services/offering.

- **Flexibility;** how do we define learning opportunities, how do we respect the disciplines that made the UW what it is and at the same time break down these very walls

- **Certification versus Instruction;** In 2030 – there will be no undergraduate courses taught in the class; won't be professors teaching in the classroom – it will be about certification (see theme further on)
- **Research will remain with the brick and mortar;** At the graduate level, it will be different – will have to do research in the laboratory; don't have to have every single instrument in their labs because technology will enable remote instrumentation, etc.
- **Three legged stool** = campus experience, online learning, in-field internships.
 - Each leg will require an organized socialization component to re-integrate the diverse experiences
 - Students will pay for interaction with faculty and high-performing students
 - No substitute for the one-on-one human “engagement” for high-quality learning/education

Online Education

The focus groups had highly engaged discussion about what online instruction provides and how it compares to onsite instruction/education; what would distinguish quality?

- **Online virtual instruction will be commoditized.** We will need to determine how to integrate online learning within a bricks/mortar, which will revolutionize the pedagogical experience. People will learn better but format is very expensive.
- **Education versus information.** Education is about interactivity between the instructors, and students (this is the part that's expensive). Online learning is basically a publishing media (not all that interesting or new).
- **There will be an overwhelming glut of good quality educational content available to anyone online.** Only a small fraction of people will have the ability to use it well, without the intervention of expert faculty. Thus, creating a higher value education will be linked to the ability of faculty to be the organizers, interpreters, and analyzers of content that is matched to a student's learning styles

Certification/Testing/Credentialing

Quality means of testing will be imperative to ensure that students are prepared to progress in their education on to more advanced classes (onsite, infield internships, etc.)

- **Future core competencies behind relevance of universities;** The big issue is sustaining the UW's relevance to the students we most attract to our credentialing system. The cost of education is not sustainable, so we will need to find "long tail" methods for cost efficient quality
- **Role of UW;** Not just the learning; it's the certification – meaning that we have certified that someone has learned something
- **Testing is leading determinant** – testing will play a larger role in society – segregating earlier, China/India – creating a class system and leaving kids behind – rural kids don't pass “the test”; creating specialists; we are looking for generalist; why not let our students get through in two years if they can test out of the core.

Branding

Strong branding will be essential to distinguish UW as a premier institution of higher education.

- **Why the UW;** why would students choose to do distance learning with the UW, when you can do it with Harvard? Some departments can, but not the UW; should we do the opposite - doors open to all but not all graduate? Maintain the brand through research and not necessarily through the undergraduate “commodity” courses
- **Why should students come here;** Why do people pay for a degree out of Harvard, MIT when many of the materials are on the web; why do people pay for top education – networking, brand name – not because it’s a better education; brand recognition
- **How to position our brand?** Selectivity = protection brand recognition – at front-end, not at the back-end. Need to be ahead of the curve when courses go online – what is the brand?
 - MIT’s Open Courseware – it’s the reputation that has caused people to seek this out – not necessarily that it’s a better product.

Structures

Emerging areas of research and of professional development do not respect our historic organization through colleges and departments. Some of the most interesting and most valuable work crosses the boundaries not only within our institution, but these research teams often cross institutional boundaries. Collaborative technologies will increase the tensions between fluid research teams and organizational boundaries.

- **Research collaborations are porous.** Collaboration is key to the future of research. Collaboration, taken broadly, is the main thrust of our technical development. We have to focus on the barriers to collaboration and how technology overcomes these barriers.
- **Technology supports fluid organization.** We need to be agile, loosely coupled to be able to configure in almost any way. Need to be able to bring teams together and allow them to reform as times change. This seems to call for centers of shared resources.
- **Institutional organization supports consistency.** There is a tension between flexibility and the need for some structure. To maintain institutional identity and quality, we need a balance between flexible research teams and centralized oversight.
- **Historic boundaries are not a good guide.** Many of the walls that have been erected in the last 50 years are barriers to collaboration. They are artificial constraints. For example, in engineering, we may see the individual departments disappear; there will be school of engineering – period.

Governance/Funding

Making tough decisions about what is most important - how do we prioritize? Decisions should be cast back to how they support the mission, how does technology enable the missions? A very disciplined process is needed in an environment of scarce resources.

- **Equity across the disciplines;** we need the same types of technology to make the big discoveries across the disciplines; Concerns that due to funding, minimal chance of making this happen
- **Stripping away the cross-subsidies;** Article a year ago in the Chronicle of Higher Education which pointed out that what the Internet had done to newspapers, it was about to do to higher education -- namely, destroy the economics of the business by stripping away a cross-subsidy (advertising in the case of newspapers, cheap lower-division instruction productivity given the redundancies, inefficiencies)
- **We need standard technologies;** it's a business practice and not a technology issue. Currently, we have a huge loss of productivity given the redundancies, inefficiencies. Costs are controlled when technologies are widely available.
- **What can others do better than us?** Where do we need to build technology that needs to be done at the UW (we are better than the marketplace); where we should be outsourcing (not just technology but other services like facilities, etc.). We will continue to need to evaluate the how to make decisions between central and local "control." We need to think about how we can "outsource" to those who are doing it better.
- **Funding for the long-term/sustaining;** Grants – only cover for period of time. What are the implications if David Baker's server farm hits a dry stretch and then how to fund/maintain?

Environment

UW provides a platform to perform the most compelling research in the world. What is the tipping point when the environment plays a key role in the competitive advantage and our entrepreneurial, "can do" spirit (in spite of lack of money, infrastructure) is not enough?

- **Why students come to the UW**
 - Discovery, certification, brand, experience
- **Why do faculty come to the UW**
 - Discovery, impact, who else is there/who do you want work – collegiality/environment; entrepreneurial spirit – "can do" in spite of lack of money, infrastructure
 - UW is a platform where they operate – most compelling research in the world. Why choose ours over another, why would they need to stay?
 - Perception that we are "heaven on earth" – reality is behind the times; resting on our laurels
- **Blending of personal/business lives** – those who can afford just pay to keep it separate – basically subsidizing the UW's business

Warm-ware (=people)

One of the greatest challenges in technology is garnering widespread adoption. Whatever technology we deploy, we will benefit from this investment only to the extent that our researchers, staff, administration, and students make use of this. To foster widespread meaningful adoption, we will have to make technology offerings visible, to offer effective training in context, to provide easy interfaces for getting started, and to offer technical and training support.

- **Benefit comes from adoption.** Technology does not drive this process. Given the amount of money required to deploy IT, under-deployed IT systems are costly failures. The failure of successful deployment is a result of not having the right subject matters experts, of not investing in those who will make good use of the most demanding technology and offer solid platforms for everyone;
- **Support our diverse campus.** As we move forward, we need to ensure that there is technology that supports the art historian, as well as the e-scientist, and that the value is reflected in the decisions and resource allocations. Our technology needs to support the work of all who responsibly, effectively and creatively discover and disseminate.
- **Sensible efficient administration.** System administration across our campuses varies from highly supported central administration systems, to balkanized research groups, to myriad self-administered systems. Currently we have huge waste, inefficiencies, and unnecessary errors. No one has 24x7 support when grants are going out the door; we have servers all over the place, inconsistent access, backup and retention policies, etc. There will need to be a balance between central and distributed system administration, inside a coordinated framework.

Future Technology Trends

- **Research Collaboration**
 - Massive cloud data storage, data visualization tools, immersive online environments, collaborative/interactive online meeting spaces, robust security and authentication programs, creative backup and restoration technology
 - Instant translation; more bandwidth between continents and countries; quicker and more flexible publication
 - Virtual meeting environments, improved video conferencing
 - Personal relationship networking based on common academic and commercial interests.
 - Cyber-security of intellectual property
- **Virtual Environments**
 - Fully supported and managed virtual environments
 - Standards keep rising and if we don't keep up, we will be left behind
- **Wireless**
 - Fully wired classrooms
 - Ubiquitous, fast wireless – fully integrated with smart devices

- **Relationship Management**
 - Profiles will be used across the spectrum, to capture and retain information about everyone who contacts the UW.
 - We will need integration from applicant (Admissions) to SDB, to alumni, also including HR/Payroll for faculty and staff, patient information from UW Medicine, all of our affiliates like KEXP, KUOW, Burke, Henry, etc., and vendor relationships.
 - Any time anyone connects with the UW in any way, they'll have an "identity." Not just students.
- **Knowledge Management**
 - By 2030 – Artificial intelligence will be pervasive
 - Technologies are irrelevant – content is most important
- **Social Networking**
 - Virtual and physical worlds will converge in more planned and strategic ways
 - Precision in writing has never been more important, yet these more abbreviated forms like twitter lend themselves to ambiguity. You're going to need different styles for different media, and some media will never be adequate for some messages. Moreover, trust will be more important than ever, and that will have to be established face to face first.
- **Data & Access**
 - Is an institutional asset – only starting to be recognized as such – all of our knowledge of what we did over the last 20 years (2B) – vast majority exists in some electronic form – wasn't an attempt to systematically collect and mine the data (south campus – can apply this same concept to business data).
 - Research, Education and Business domains (DMC focus on business currently)
 - Large data repositories that will need to be accessible, organized and available to anyone, anytime with minimal intervention to be useful (i.e., self service)
- **Cloud Computing**
 - Back to “mainframe” computing environment (except that mainframe will be replaced with some successor in the cloud) – people won't know or care where their computing takes place
- **Storage**
 - Server space!
- **Modern infrastructure**
 - To support “the business” of the university
 - Bolster competitive advantage

2y2d Recommendations

1. **Build on existing work!**
 - [President's Working Group II](#)

- Research Computing Service Team (SM2)
 - Governance Action Team (GAT)
 - [Conversations with UW Research Leaders Final Report](#)
 - [UW Strategic Roadmap for Information Management and Administrative Systems](#)
 - [Collaborative Tools Strategy Task Force Report](#)
 - [IS Futures Task Force](#)
2. **Form working group to track trends developing in online learning**
 3. **Develop tools, platform and service bureau for conversion of traditional learning materials to online (future of UWEO model on campus).**
 4. **Determine what is core (what do we need to continue to do) and what is commodity (what other do better); outsourcing for greater flexibility and letting the market forecast for us.**
 5. **Provide training for researchers and staff to use the existing technology effectively and efficiency**
 - a. **Factor in costs of highly effective training and adoption so full benefits of technologies being adopted can be realized.**

Participants (both focus groups and survey respondents)

- Ann Anderson, Associate Vice President and Controller, Financial Mgmt
- Glenn Anderson, State Representative – 5th District, K-12, Education and Services, ISB
- Gerald Baldasty, Vice Provost and Dean, the Graduate School
- Mike Crandal, Chairman, iSchool
- Walt Dryfoos, Associate VP, Advancement Services, University Advancement
- Michael Eisenberg, Dean Emeritus and Professor, iSchool
- Jacob Faleschini, President, UW GPSS
- Benjamin Golden, Student Regent
- Terry Gray, Associate VP for Technology Strategy, Chief Technology Architect
- David Haynor, Radiology
- MichaelHochberg, Assistant Professor, Electrical Engineering
- Raymond Huey, Chairman, Biology
- Vikram Jandhyala, Associate Professor, Electrical Engineering
- Jim (JW) Harrington, Professor of Geography, Vice Chair, Faculty Senate
- Richard Karpen, Director, School of Music
- Yoshi Kohno, Assistant Professor, Computer Science & Engineering
- Nathan Kutz, Applied Math, Professor & Chair
- Ed Lazowska, Bill & Melinda Gates Chair, Computer Science & Engineering
- Bob Mason, Professor, iSchool
- Todd Mildon, UW Registrar & Information Officer for Student Life
- Sean O’Connor, Professor of Law, Entrepreneurial Law Clinic
- Will Poole, NComputing
- Lawrie Robertson, Director of Finance & Admin, Public Health

- Jay Rubinstein, Professor and Director, Bloedel Hearing Center
- Marla Salmon, Dean, School of Nursing
- Mehmet Sarikaya, Professor, Materials Science & Engineering
- Dan Schwartz, Chemical Engineering
- Greg Sheridan, Associate Vice President, Constituency Program, Office of Development and Alumni Relations
- David Szatmary, UWEO, Vice Provost
- Peter Tarczy-Hornock, Head of BioMedics and Informatics
- Betsy Tippens, Assistant Vice Chancellor – UW Bothell, IT
- Emily White, Associate Dean, School of Public Health
- Scott White, State Representative - 46th District, Project Manager, Planning & Budgeting Office