

## **Deciding Whether to Deploy a New Technology at the Enterprise Level: Evaluating a Pilot Test of Breeze at Purdue University**

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Goal of this Flashlight Guide: Launching the use of a new technology, particularly a technology that could be deployed across an entire university, can be like leaping from a cliff into a muddy pool. It helps to have some way to look beneath the surface. The TLT Group has worked with Purdue University to evaluate a pilot test of “Breeze,” a sophisticated communications system. This chapter should be a useful guide for how to design pilot tests of other new technologies, whether provided by vendors or developed in-house, especially if the question is, “Should we invest in making this technology available to everyone at the institution for a significant period of time?”

The value and viability of any software depends on its match with local needs and support. So the evaluation of a pilot test needs to illuminate what happens when people in the institution use the software.

- Would the software be used for activities of real importance to the institution?
- Would use of the software enable those activities to become even more important or more feasible?
- Can the institution could provide adequate training, trouble shooting, and other forms of support, even if there were thousands of simultaneous users?

This brief white paper has two goals:

1. Summarize the thought process used by The TLT Group and Purdue to develop an evaluation aimed at how Purdue’s people used Breeze for Purdue’s purposes. This process could be used by other institutions to tailor evaluation to their own situations.

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<sup>1</sup> Steve Ehrmann was the TLT Group consultant who led the process of designing the study described in this white paper. Dr. Ehrmann is also the primary author of the white paper.

<sup>2</sup> Bart Collins’ unit was mainly responsible for the acquisition and support of Breeze. Collins supervised the pilot test, the final design of the survey, and collection of data.

2. Describe what Purdue discovered about its uses of Breeze and how those findings influenced the decision about whether to offer Breeze on a larger scale.

### **Designing an Evaluation to Illuminate What Matters to Purdue**

For evaluations as for some other things, ‘small is beautiful.’ The longer a survey or the more rambling an interview, the more likely people are to turn off. So, as we began designing the study, it was crucial to decide immediately what information would be vital for making decisions at Purdue. To put it another way, what were the most important uncertainties that this study could help clarify?

We quickly decided on two guiding questions:

- 1) at Purdue, does the pilot test indicate that people will use Breeze to do a significantly better, richer or more satisfying job at activities of real value to Purdue?
- 2) if lots of people begin to use Breeze that way, will the support burden be manageable?

#### *Valuable Contribution to Valuable Activities?*

We then broke this larger question down to several more focused questions:

- a) what are the most valuable (important and widely practiced) activities at Purdue for which Breeze might be advantageous? After considering a dozen candidates, we chose three:
  1. live online meetings;
  2. live one-on-one coaching and tutoring, and
  3. participating in presentations and other courses.
- b) When considering their instructional uses of Breeze, do faculty users see a contribution to better learning? Decades of research have shown that improved faculty-student interaction, better student-student collaboration, and faster feedback contribute directly and consistently to improved learning. So we would ask faculty users if they were using Breeze to improve faculty-student contact and other such activities.
- c) Are pilot users becoming eager users of Breeze: do they quickly begin using Breeze for these activities (“a” above) with success, ease, and in a manageable amount of time?

#### *Will the Support Burden be Manageable?*

Breeze would be of little use to Purdue, no matter how valuable it was, if it poses impossible support burdens. So the second major theme of our study was to discover what kinds of help Breeze users might require. From the support unit’s point of view, the ideal technology is a valuable one that users can manage almost entirely on their own. How close to that ideal was Breeze when used by Purdue people for Purdue purposes?

### Evidence of Value-Added

We asked pilot users if they had used Breeze for each of our three chosen activities and, if so, how eager were they to use it again for that purpose. The scale of answers ran from “strongly desire to use it again” (5) to “strongly desire to avoid it” (1).

Activity for which Breeze was used	Score of eagerness to use Breeze again Strongly desire to use it again = 5 Strongly desire to avoid it = 1
Live online meetings, and	4.27
Live one-on-one coaching and tutoring	4.23
Participating in presentations and other courses	4.33

These responses made it clear that pilot participants were now eager to use Breeze again for each of these three purposes.

The second theme was instructional value. Some of the faculty participants in the pilot had used Breeze in courses. We were interested in seven activities that, according to many years of educational research, improve educational outcomes. (These activities were originally defined by Arthur Chickering and Zelda Gamson: their “seven principles of good practice in undergraduate education.” How valuable did these Purdue faculty think Breeze would be for improving each of those activities?

**The Seven Principles of Good Practice: “Please rate how effectively the following learning goals are achieved when using Breeze to participate in live, instruction-centered events.”**

**1=Very poorly  
2=Poorly  
3=Unsure  
4=Well  
5=Very well**

- |   |     |
|---|-----|
| 1. Student-faculty contact is encouraged              | 3.7 |
| 2. Cooperation among students is encouraged           | 3.7 |
| 3. Active learning is encouraged                      | 3.8 |
| 4. Prompt feedback is promoted                        | 4.0 |
| 5. Time on task is emphasized                         | 3.8 |
| 6. High expectations are communicated                 | 3.7 |
| 7. Diverse talents and ways of learning are respected | 3.7 |

These ratings are encouraging. For a future study of this type, however, the question could be improved. For example, one might ask faculty, “Compare the course in which you have been using Breeze with another course with the same number of students, a course where there was no use of Breeze. In this course, to what extent did your use of

Breeze enable you to improve student-faculty contact?” Answer options might be more descriptive, e.g., “I can use Breeze to make valuable improvements in faculty-student contact; I can use Breeze to make modest improvements in faculty student contact; etc.)

### **Evidence Relating to Support and Scalability**

To understand why the question of support was so important a topic for investigation, consider how large Purdue is. The university’s four campuses, outreach sites, and online learning served over 68,000 students (full-time equivalent) statewide. The University has over 4,000 faculty and lecturers, another 4,000 administrative staff, and 4,000 more clerical staff – along with graduate assistants and others, the university employs almost 18,000 staff, any of whom might be using Breeze if it were fully deployed.

Another gauge of what it can mean to deploy an application at the enterprise level at Purdue: it is not unusual for Purdue’s WebCT Vista system to have over 2,000 users logged on simultaneously.

As Bart Collins put it, “No IT organization in the world can deal with implementation at that level if there are significant support problems. So this part of our evaluation of the pilot was designed to analyze potential support demands posed by Breeze.”

It’s important to understand the context of the pilot test. Rather than providing advance training or planning in advance for support for a technology that might never be operationally deployed, Purdue decided to find volunteers, give them access to the system with virtually no support and, to quote Bart Collins, “see who came yelling.”

Participants were asked how long it took them to set up their Breeze sessions the first time they ever tried it. The mean response was 14.7 minutes. (This includes not just setting up the software but also related hardware/software needed for audio and video, as well as briefing other participants in the session about how to use the system.) We then asked whether that time decreased with familiarity; most people said “yes” (87%). A study of this type in the future should also ask people if they used Breeze a second time for this or some other activity and, if so, how long setup took the second time and how long they think it would eventually take if they became routine users of the system.

[Note: for complex technologies such as Breeze, it is important to assess the institution’s readiness to support the entire constellation of technologies needed for effective system use. As Bart Collins comments, “We need to study how prepared the institution is to support everything else that is implied by this app. In the case of Breeze, that would include use of video and audio hardware and software with people’s computers. There are organizational issues, too, because our unit, ITaP, supports Breeze but a different unit at Purdue supports desktop computing and personal video. We haven’t had lots of problems – getting cameras hasn’t been a problem and the audio tuning wizard was improved in the latest release – but these are important issues to think about when considering full-scale implementation of a new technology.”

Only 15% of the users in the pilot reported having some sort of technical difficulty. In a non-production environment, with no training for most participants, that was seen as a very encouraging finding. Bart Collins recalls. “For the pilot, we just recruited some users at the beginning of the fall semester and let them try Breeze. We offered no formal training for any of the pilot users. We wanted to see how much support would be needed, so we started with ‘none.’ These were, of course, ‘early adopters’ who often had experience with similar types of technology in the past.” There are limits to this strategy. It doesn’t give much insight into the support demands created by mainstream staff who may have less curiosity and less patience with new technology.

The investigation of Breeze was not limited to surveys of pilot program participants. For example, another consideration for a large-scale institution is whether Breeze integrated reasonably well in the IT infrastructure. Does it have odd requirements? Does it meet the university’s security requirements? Purdue technical staff evaluated Breeze positively in this regard, too.

### Summary Judgments

Finally respondents were asked whether ITaP should move from pilot stage to full implementation.

Would you recommend that ITaP move Breeze beyond the pilot stage and make it a generally available resource to faculty, staff and students?	Yes	81.1%
	Unsure	13.5%
	No	5.4%

Support staff opinions were consistent with the survey data. Instructional designers, people who provide applications support, and system administrators --the staff directly involved with the pilot -- unanimously agreed it was appropriate to move forward. “This was an important consideration,” said Bart Collins. “The staff needed to be behind the move.”

### Making the Decision

The survey provided important evidence to Bart Collins and his supervisor, John Campbell. (This was also an important step for them in beginning to use evaluative data in a systematic way to make decisions; Breeze provided an occasion to begin using data in this way. An intern has now been hired, full-time, to assist with this kind of data-gathering.) Campbell and Collins decided it would be a good idea for Purdue to implement Breeze at the enterprise level, so they began discussing the possibility with other units. The three campuses each confirmed that they would pay for part of the cost. A big ERP deployment is underway, and that large staff team also wanted to be able to use Breeze. Other units, too, generated support to help underwrite the purpose. ITaP provided the lion’s share of the funds but it was important that other units also pitched in.

## **Final Observations**

This study marked a step forward for ITaP in the use of data for decision-making. Purdue plans to do more such studies that focus, as this one did, on the combination of effectiveness and support issues. It's worth repeating that the most important lesson of this study for other institutions ought to be the style of asking questions. The particular questions may vary, and the answers to those questions may well be different, depending on those institutions' particular needs and capabilities. But the stakes are too high for institutions to make such decisions blindly. Careful assessments of pilot tests ought to become a standard part of IT decision-making.

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