

Implementing technology for adoption and creative usage



Technology Adoption Service

Executive summary

Institutions want to see improved outcomes. They used to think that installing technologies would affect these directly but after twenty years they understand that the challenges of realising technology adoption and creative usage are complex.

The solutions which institutions have developed generally fall into three categories: mandated adoption; encouragement and support for lecturers to adopt technologies and working intensely with individual lecturers to ensure they adopt technology in a way which works for them. All these methods have been successful up to a point where they reach a plateau which seems very difficult to break through. Underlying each of these approaches is a perception that adoption and creative usage exist within a pattern of challenge and solution.

To climb up from the plateau, we argue it is more helpful to perceive a technology as having fundamental needs which must be met.

These needs are: Leadership, strategy, ICT services, student support, professional development and curriculum development. The three categories of current solution plateau out precisely because they do not meet all technology's fundamental needs, only one or a few of them. Thus some needs remain unmet and unaddressed, whilst others are over addressed and over met.

Once an institution starts seeing its technology portfolio as existing within a context of fundamental needs, how does it change tactics to ensure that those needs are met and an environment in which technology use can flourish is nurtured? We argue it is by building the capability to meet those fundamental needs in support staff. Some of these are well known like project management and communication, others are less well known like: nurturing communities of practice, or creating technology value propositions with individual educators. Eiffel Corp's Technology Adoption Service is well placed to help institutions develop these capabilities.

The benefit to the institution is return on effort. In learning to address unmet needs, support staff will climb up from their current plateau of diminishing returns and start working in virgin territory where increasing returns on effort are to be found, on the way to higher levels of adoption and creative use.

Mind the gap

Institutions want outcomes. That's why they've invested so many resources in purchasing and installing educational technologies over the last twenty years. Executives are gradually coming to the conclusion that there is no straight, absolute mechanism between technological features and institutional outcomes. Plugging one in doesn't deliver the other. Of course, they haven't rejected technological progress entirely. They're becoming more aware of the complexity of the space in between technology's raw features, and the value they're looking to create in their organisation.

Lack of adoption

This is not an intellectual exercise but one derived from deep experience. Installing technologies, and offering tools training programmes to nominated teaching staff or even departments hasn't met with the kind of transformation in outcomes which executives had hoped for. Two distinct facets to the problem seem to appear.

The first is adoption of technology. Lecturers are not generally enthusiastic about adopting new technologies. Of course some early adopters and innovators will always show an interest, but outside of this minority driving adoption becomes much harder.

The second is usage. If lecturers do start using a new technology, they tend to be cautious in implementing it. This is the opposite of the confident creativity which is needed in implementation to bring about a transformation in institutional outcomes.

An uncomfortable experience of risk

For many lecturers, migrating to a new technology with some basic training feels risky enough when their teaching remains unmodified. Changing the way they teach at the same time feels out of the realm of possibility. This is why many teachers will opt to migrate their existing practices to technology in order to satisfy the requirement for them to adopt. Many institutions will have had the experience of lecturers re-creating acetate slides in a presentation tool to claim technology usage, or then uploading those same presentations to the content section of a learning management system to demonstrate adoption of that technology. Technically these moves fulfil the definition of adoption, but it's hard to argue they fulfil the spirit of it. Certainly they're not going to bring about a significant change.

A variety of approaches have developed

Institutions are aware of these challenges. They've been working to ensure they can integrate new technologies into their institutions for nearly two decades and so have developed solutions which have fallen into several types.

Mandated technology adoption

Some Institutions, particularly those with a strongly managerial culture¹, have mandated set levels of adoption for large technology investments. Departments are told that they must use the new

¹ See Bergqvist, W. and Pawlak, K. Engaging the Six Cultures of the Academy: Revised and Expanded Edition of The Four Cultures of the Academy, Wiley, 2008.

technology, and that their usage must be at a set level. Training is offered to enable lecturers to comply, but once they are trained it is the responsibility of the lecturer and department to ensure compliance with the institution's requirements.

This approach has seen some success. In some institutions, departments are willing to accept executive authority. Even if they don't like the requirement, they will ensure it is met. For large technology projects where widespread adoption is important to the institution's proposition, mandating adoption works.

However the downside of this approach is that adoption runs out of energy after compliance. This is partly because of the nature of a mandate: once the receiver can demonstrate they have fulfilled the terms, their job is done. Technology use then becomes about 'what I'm required to do', so it becomes difficult to think it in terms of 'what I might want to do', and why.

Practically this manifests as adoption getting to the desired level of the mandate, but encountering increasing resistance from there onward. It stalls.

Supported and encouraged technology adoption

A popular approach has been to introduce a technology with a strong publicity campaign, offer tools training and then let lecturers integrate the technology into their practice from there. This is the basis of the approach in many culturally collegiate institutions: A combination of encouragement and support, with conflicts worked out by negotiation.

This method has also seen some success. Interested lecturers become involved, attending brown bag lunches, or other flexible training programmes to give them technology skills without imposing too heavy a time burden upon them. Some lecturers have taken steps to adapt elements of their teaching to new technologies.

Institutions have also drafted in extra support, for instance in pedagogy, such as consulting from curriculum design specialists, in executive support such as thought leadership, and some institutions have introduced reward schemes for lecturers who make demonstrable progress with technology adoption.

Yet for all the support offered, institutions find it hard to persuade an overall majority of lecturers to use technology, or use it creatively. Most are exceptionally busy, and whilst they may recognise the support available to them, and the institutional importance of technology, it just doesn't have enough 'gravity' in their own teaching and learning practice. They perceive they have little time, and too many other weightier claims upon them, like their research, or course development.

Typically these lecturers fall into the early, and particularly late majority of adopters on a diffusion of innovations curve. They are hard to reach. Coincidentally adoption in these institutions looks and feels a lot like the experience of those with mandated adoption: it stalls and the agenda moves on.

Intense individual focus

A lesser trod path is that of an intense individual engagement. Initially used as a response to severely restricted resources, an institution chose to look for a small, select group of lecturers, who

volunteered to migrate their teaching and learning practice to using technology. The programme was intense, tailored to uncovering and meeting their individual needs over six to twelve months.

Upon signing up, lecturers were made aware they would have to demonstrate a significant implementation of the technology in their practice and that this would require dedication, but that they would be supported. They were given the opportunity to stand down if they didn't feel they could make the commitment. The attractor was that they would be part of something pioneering, demonstrating a higher standard of teaching and learning within their institution, and region.

Given their limited resources this programme was a success in the institution which conceived it. A small number of lecturers' practice was transformed by the affordances of technology, and those lecturers testified to being so convinced by the value they had found, that they wouldn't want to go back to their former practice if they could.

Clearly this is the kind of step change which executives want to see. However questions still remain for this institution about how to spread their programme beyond those self-identifying 'pioneers'. How do they reach a wider audience, particularly the cool deeps of the early and late majority without an unfeasible up-scaling of resources?

A problem with point of view

Each of these approaches has its strengths.

The mandated approach has very strong central support. The institution is left in no doubt about the intention of its executive management nor its strategic direction.

The supported and encouraged approach has very strong resourcing for lecturers. They are left in doubt that the institution will provide all the materials they need to make the transition in their teaching and learning practice.

Finally, the intense individual approach has very strong individual tailoring, and levels of commitment to the lecturer. They are left in no doubt that their cohort will work together to find and resource the right implementation for them.

So why are institutions hitting a ceiling of adoption and creative usage?

Institutions need to go beyond themselves

All the above approaches solve the challenge of adoption and creativity from within their own culture. Managerial cultures look to mandate, collegiate cultures look to negotiate and support; developmental cultures look to nurture and develop individually. Yet to leave the plateau of adoption and creativity, strategies are needed from outside of an institution's natural sources of perception.

Global best practice is the obvious place to turn for institutions which realise they need something beyond their experience or ability to produce a solution. High-fee consultancies are happy to quote for these services, in addition to the best practice resources available online within the educational technology community.

Yet best practice doesn't quite hit the mark either. Often it's a process which is working for a certain institution under certain circumstances and is context sensitive. Once the practice is abstracted it leaves its context behind and ceases to be as effective when it encounters a context with different conditions.

So how then should we look at introducing or growing technology adoption and creative usage within an institution?

Fundamental technological needs

Technologies as adopted in practice are not objects conforming to a challenge solution pattern of interpretation. They will proliferate or wilt according whether certain needs are met, or not. This should come as no surprise. We conceive of the success of many things in terms of their needs being met.

Humans have a few fundamental needs to thrive: subsistence, protection, affection, understanding, participation, leisure, creation, identity and freedom². A thriving project has to satisfy the need for time, cost and quality to be met. And so on.

The critical difference is that these fundamental needs are not actions emerging from a cultural context, nor are they abstracted processes derived from some successes in context. They are needs which must be met *in any context* in order for the thing to flourish. The process of *how* they are met is entirely dependent upon context. But *what* they are is applicable across *all* contexts.

Technologies' fundamental needs are:

Leadership

A technology needs consistent leadership in an institution. Practically, this means that executives understand what it does and are able to communicate a vision for it. It also means that it's subject to good project leadership which has a purpose, vision and mission for the value it will bring to both the lecturer and institution, and a project team aligned around it.

Strategy

A technology needs to be integrated into strategy. Technologies are often left out of strategic discussions and plans at both an executive and departmental level. They need to be included in order to be perceived as part of the institution's core development, not incidental to it.

ICT services

A technology must be reliable and robust. ICT services is to technology's flourishing as food, shelter and warmth, are to a humans: that is subsistence needs.

Student support

²See Max-Neef, Manfred A. Human Scale Development, Apex Press London and New York, 1991. Available online at <http://3awww.alastairmcintosh.com/general/resources/2007-Manfred-Max-Neef-Fundamental-Human-Needs.pdf> [last accessed 20 July 2018]

A technology needs students to be able to use it skilfully for it to deliver any value to the institution. Just because learners are perceived as 'digital natives' doesn't make them immediately fluent or skilled in the institution's technology portfolio.

Professional development

For technology to flourish, teaching staff must not only *know how* to use it, but *understand why* they should use it. The former speaks to capability, the latter to motivation. Both are required.

Curriculum development

A learning technology needs to be integrated into the curriculum. This is a complex blend of learning design, and support for nervous lecturers. Without it the risk of embarking on new practice can put off many lecturers who otherwise would.

What if an institution took the point of view of technology's fundamental needs?

If all these needs are met effectively within an institution, a technology will have the environment it needs to succeed. They describe a contextual web of factors which need constant balancing for a project to continue to succeed.

Typically the solutions institutions have already developed work well to meet a limited number of these needs. The mandate works well to meet the need of leadership. Support and encouragement works well to meet the need of curriculum development, ICT services and the knowledge part of professional development. Finally, the intense individual approach works really well for both the knowledge and motivational aspects of professional development and curriculum development.

However whilst each focusses on these areas of need, other vital needs remain unmet. The areas of need these solutions satisfy become saturated or over met, and the project hits diminishing returns. This is experienced as the stall, or ceiling of adoption.

Were the institution to reflect on how it was meeting technology's fundamental needs, across all needs, it would see areas which were clearly unmet. When it acted in these areas an institution would hit the law of increasing rather than diminishing returns in terms of adoption and creativity. Each unit of resource spent in an area of unmet need would yield a much greater gain than by continuing to over meet needs already addressed.

Institutions have finite resources. So how do they integrate a fundamental needs approach into the life of their technology projects?

Running technology adoption by fundamental technological needs.

Perceiving technology adoption as a web of fundamental needs, rather than as a challenge requiring a solution represents a transition in a way of *perceiving*. This has implications for change in a way of *acting*, but what are they?

Institutions typically value certain skills for educational technology implementations when they perceive them as a challenge and solution. Typically these are the skills of project management, the

ability to commission and run training programmes, and a working knowledge of pedagogy. At a more senior level the ability to relate to the executive, and communicate more widely are also valued. These skills are vital to run the kind of programmes outlined above. Yet, if we take a view that the path to technology adoption is via the meeting of fundamental needs then there are other skills which support staff will need; skills like vision and mission, building value propositions with lecturers and for the institution, community building, and running an aligned, empowered core team to nurture adoption.

Eiffel's Technology Adoption Service is designed to grow these capabilities in support staff, giving them practical tuition in the skills they'll need to help meet their technology's fundamental needs. The service can be run face-to-face or online and covers ten skill sets. These are:

Core teams

A core team is a way of forming and leading a team around a shared sense of purpose rather than a task or process. It's a good remedy for teams which lack a strong central purpose or where the team's leadership style has been unsuccessful in aligning and inspiring the team. A good core team will engage all of its members and those in the grey areas in between. This module shows learners how to use the principles of a core team to nurture engagement with their technology project from a strongly held purposive centre.

Learners will explore the principles of a core team and understand what distinguishes it from the type of teams they're used to in their own organisation. They will also have identified a purpose for their core team, identified who could or should be in it, and how they might start forming it within their institution.

Institutional context

The institutional context module bridges the separate functional areas of support departments to work on projects no single function can address itself. Often these challenges remain in the background. If they are even surfaced then it's with the resignation of 'what on earth can we do about that?' This module describes a structure for bringing together representative parties from across the institution to identify these challenges and start to create local solutions to meet them.

Learners will explore the workshop process, consider what it means for them and how they would run it in their home institution.

Vision and mission

This module enables learners to focus on exactly what they're motivated by and are trying to accomplish. Understanding can help speed the project up.

Firstly it makes it easier to communicate the project's intentions to the organisation. Clarity saves time at every turn. Secondly, vision and mission align the project team keeping them tightly focussed around their collective intentions and end goals. It's amazing how easy it is to allow circumstances to cause a team's focus to drift.

Learners will explore the differences between vision and mission statements and the strategic web into which they must integrate. They will have drafted their own vision and mission statements and be familiar enough with the process to lead their own core team through the process.

Stakeholder analysis

Identifying who has influence over learners' technology project, and who is affected by it, is a key skill. It's fundamental to directing resources, communication, achieving and maintaining executive support and even uncovering less obvious but vital groups like students. Without a good working ability to analyse stakeholders and a plan for engaging with them it is very difficult to build necessary momentum across the areas of fundamental need. Without that momentum the project will stall or fall short of expectation.

Learners will complete a stakeholder action plan, be able to explain each element of the stakeholder analysis, and their next steps are in managing the stakeholders they've identified.

Managing at C level

This module enables learners to work with the most senior executives in their institution with confidence. Many may not have presented at this level before. Understanding the executive agenda, how they conceive and speak of the institution can enable learners to make a compelling case for their project, and themselves as its leader. With well managed executive support the institution is forced to recognise the learner's technology project, and make a response to it; they know the executive will be watching expectantly. This creates an environment where learner's projects *can* flourish.

Learners will explore what it means to work at C level, have identified their institution's strategic needs, drafted a pitch and presentation to C level, and tested it out with their peers in the cohort.

Institutional value proposition

The institutional value proposition is primarily focussed on helping learners work more effectively with leadership. Developing a value proposition for executives focusses learners' minds on what value their technology can offer the institution as a whole.

Learners make clear links between the features of their technology, and some of the institution's most pressing challenges and deeply felt aspirations. They can show how their technology can be used to meet strategic goals. They will create an institutional value proposition, and be able to lead their own team through the process back in their home institution should they need to.

Project management

Whatever learners are doing in their project, they will need to manage the programme to its conclusion. Good project management will help learners sleep at night: they'll know risks are managed, the programme is organised, yet flexible, key audiences are identified, and managed, and details are considered.

Learners will explore the disciplines of project management and use the tools they've learned to address their technology projects.

Communications

Communication is one of the most fundamental disciplines of running a successful technology project, but also one of the most neglected. This module invites learners to consider communication done well, and communication done badly, and then asks them to write a communication plan. The communication plan forces learners to think about who they need to communicate with, why, and how that's best achieved.

Learners will write a communication plan for their project which they can use in their institution.

Educator's value proposition

The educator's value proposition is focussed on a unique combining of professional development, curriculum development and ICT services to offer a tailored technology value proposition to individual faculty.

The mismatch between the affordances of technology, and the way faculty perceives it is a significant cause for technology under-use. Faculty are shown a technology, and even given a few examples of how it might work in practice. But how it will work in practice *for them in their specific class* remains unspoken. The value proposition explores that unspoken territory, to build a proposition for specific value, and a plan for a specific change. .

Learners will experience creating a value proposition, and be able to lead faculty through it back in their home institution.

Communities of practice

A 'Community of Practice' is the only praxis we've found to meet the challenge of self-sustaining change. A community forms around interest and their *interest* lies at the centre of the community. It leads the agenda; it provides the energy for the group's self to sustain, and it draws others in. The job of learners is to host the community with resources, help them clarify their needs, and facilitate their connections.

Learners will explore the concept of a community of practice, how to convene one, and have a plan for helping a community to form in their home institution.

Technology Adoption Action Canvas

This module draws together the outputs of all the others so learners can form a high-level view of their project, and plan the action they will take back in their institution. Learners summarise their project's core purposes, value and information on a page. This statement can be used to explain their project, as well as help learners stay focussed and keep track of it.

Learners create their own technology adoption action canvas, with an agreed review date and reviewer, and should be ready to return to their home institution to commence working towards it.

Two critical steps

Most institutions perceive technology adoption and creative usage as a form of challenge and solution. The solutions they generate usually emerge from the dominant culture of the institution.

Often they are brilliantly intuited, and for a time very effective within in implementing technology. Yet they all reach a point of diminishing return and eventually run into a ceiling of adoption and creative usage because they only meet one or a few of technology's fundamental needs, when all must be met for a technology to flourish.

The first critical step for an institution to break this cycle is to set aside the challenge and solution form of conceiving technology and pick up an interpretation which perceives the technology through its fundamental needs. As the institution does this it then needs to work out how, or if these needs are being met. Eiffel's consulting services can assist with this process.

The second step supports the first. As the institution starts to see its technology portfolio in terms of met and unmet needs, then it should start to build the capability amongst its support staff to meet those needs. This may require support staff developing skills which they may not be used to, such as community building or creating value propositions with educators. Eiffel Corp's Technology Adoption Service fulfils this role.

In taking this path institutions can start to see and work with their unmet needs. They'll start to experience increasing returns of adoption and creative usage. They'll work in previously unseen areas of institutional life which nonetheless are vital to their technology's ability to deliver the outcomes it always afforded, and they always desired.

Checklist for institutions planning to work with adoption and creative usage

- Release the perception that adoption and creative usage are a form of challenge and solution; grow into a perception of technology use a web of fundamental needs which must be met.
- Understand how the fundamental needs are expressed particularly in your institution
- Assess which of the fundamental needs are most and least met. Where do you need to start?
- Seek to build capabilities which will ensure your support staff are skilled as a team to meet technology's fundamental needs.
- If you need training or consulting help, then ask your consultant or trainer what their understanding of meeting technology's fundamental needs is. How would they go about meeting them?

Who are Eiffel Corp?

Eiffel Corp was founded in 1998 by two visionaries passionate about the difference technology could make to education. The company now serves hundreds of institutions throughout Africa and has a long history of developing training and consulting services specifically for the education sector.

Eiffel's technology adoption services are based on rigorous research, and have been developed through pathfinder projects in Africa and European projects over a number of years. Since 2005 Eiffel Corp has deployed special annual research and development funds, derived solely from its own financial means to address the complexity of deriving real institutional outcomes through enterprise educational technology. Our technology adoption services, understanding of technology as having fundamental needs, and discovery of capability building for those fundamental needs emerged from this research.

We believe educational technology outcomes are an ethical matter which supercedes any other goal for working with education.

Contact details

Telephone: +27 (0) 21 782 2993

Email: info@eiffelcorp.co.za