The Value of a Common Foundation 2.0

apereo

Serving the Academic Mission

Introduction

The Apereo Foundation is a vibrant and value-driven organization. Apereo has a noteworthy history celebrating two strong organizations, the Sakai Foundation and Jasig. Most significantly, our incubation process - reshaped after considerable community consultation - is about to graduate its first software communities. The process is providing benefits for both projects, in terms of structured support in their early stages, and adopters, in terms of clarity around the steps young projects have taken to guarantee IPR, and build a sustaining community.

In addition to helping to stimulate the development of new projects within our communities, incubation has attracted both existing mature software communities, and new initiatives external to the traditional constituency of the two former organizations. The Karuta next generation eportfolio project, OpenCast Matterhorn lecture capture and media services platform, UniTime scheduling and timetabling solution, and EDExchange transcript exchange initiative of the PESC Common Data Services Taskforce have all entered the Apereo incubation process during 2014. This demonstrates the depth and spread of interest in support for new initiatives, and the prognosis that Apereo would become a pole of attraction for new ventures in higher education.

As part of the process of exploring a potential merger of the Sakai Foundation and Jasig, the two organizations produced a joint statement of their common values. It was - and remains - our intention to periodically add to this document as we developed the new organization, the Apereo Foundation. Eighteen months after that merger, Apereo has made significant progress towards realizing its mission: providing a framework for communities to work together to sustain software supporting the delivery of the academic mission. This edition of our values statement brings minor amendments and updates to the first two sections of the document. The final section of this document begins to draw lessons from this early experience.

In the introduction to the first edition of this document, we wrote –

"Over the last ten years, open source solutions have become a major force in helping to address a range of challenges facing higher education. Yet open source[1] initiatives in education remain fragmented, with not-for-profit entities proliferating to serve a diverse range of communities and solutions. Recognition of diversity is essential. It has emerged as a key value of the proposed Jasig-Sakai merger. There is clearly no one "correct" solution to the governance of software communities operating in a wide variety of contexts, at varying positions in their lifecycles, and which serve different layers of the software stack. Yet recognition of diversity does not mean that rationality should not also drive an examination of the continued formation of new not-for–profit organizations. Does the level of duplication inherent in the current organizational fragmentation serve higher education best? Could the resource we might free by a measure of consolidation and increased coordination make a

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[1] It is important to recognize the distinction between open source software, which we define as software released under an OSI approved license, and the organizational approach taken to the production of such software. Organizational approaches range from models which have been described as "benevolent dictatorship", where a single person, typically a software developer, controls contribution and release process, either personally or through subordinates, to more collectively controlled approaches associated with the Apache Foundation, or consortium based models associated with Community Source initiatives in education.

significant difference to the overall health of our software communities? Are there ways we can reflect and celebrate necessary diversity, while achieving a more rational organizational approach? Will the merger of Jasig and Sakai under a common foundation encompassing a range of projects provide more opportunities to develop interoperability throughout the software stack?"

The issues we posed remain substantively the same. We believe we have begun to answer the latter questions in an emphatically positive manner. Why not find out more, and join us?

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1: The value of open source software

The last decade and a half has seen open source software move from the periphery to the mainstream of the information technology landscape. Thousands of open source projects exist. Some serve relatively small groups of individuals. Others support the activities of organizations operating at significant scale, or underpin web-delivered services for millions of end-users. Governments increasingly advocate or mandate either the consideration or use of open source software in a wide range of contexts within the public sector. Within the private sector, open source software has grown to underpin the activity of thousands of businesses around the world, including those as diverse as the London Stock Exchange and Netflix.

The key driver for this growth might at first appear obvious: who could turn down an apparent "free lunch"? The cost of licensing is, however, only one factor driving the increased use of open source software. The examples of Linux and Apache speak not only to the cost of software consumption, but also to the success of extended and highly distributed development communities collaborating to realize software innovation at scale. This is one reason why major corporations, such as IBM, make such significant investments in open source software.

Software licensing – whether open source or proprietary – is, of course, a guarantee neither of quality nor sustainability. It is manifestly the case, however, that a significant number of open source licensed projects now produce software that is equal to, or better than, their commercial-proprietary counterparts in terms of quality and performance. Such software often has a considerable lineage. Sustainability is an issue that is never "done", but a range of open source software has now proved itself at least as sustainable as commercial counterparts.

Open source software offers several distinct advantages beyond freedom from licensing costs. These advantages are intimately connected with both choice and innovation. Organizations adopting open source software can choose to support it with internal resources, with external contractors, with the support of open source software communities, or with a combination of the three. In these scenarios, then, software licensing can therefore be decoupled more readily from software support services. The forced march of upgrades or migrations to maintain "officially supported versions" of software can be avoided, or at least the risks associated with them more readily mitigated or controlled.

Those who adopt open source software are free to choose to contribute their own improvements and innovations back into a common community pool, and take advantage of the innovative contributions of others. A strong community returns many times the value of the individual contributions of individual participants. Indeed, there is a strong economic imperative to collaborate: past a certain point, a local adaptation of open source software becomes in effect, a "fork". The cost of maintaining such a fork is no longer shared by those maintaining the pool, but becomes a matter of in-house support.

2: The value of open-source in education

A 2010 report[2] surveying the emerging global context within which higher education operates noted that, "Higher education is under pressure to meet greater expectations, whether for student numbers, educational preparation, workforce needs, or economic development. Meanwhile, the resources available are likely to decline". In short, higher education faces an increased and increasing range of financial, policy and structural challenges. The intersection of these challenges with the growing licensing and deployment costs associated with proprietary software, at a point when budgets have rarely been more constrained, magnifies them considerably. Freedom to choose commercial closed solutions is often limited; as the 'Courant Report[3]' noted "the relatively small size of higher education may also make it especially vulnerable to monopolization."

There is growing recognition from higher education IT leadership that standard, closed and proprietary software is often a poor fit for the academic enterprise; that it frequently does not serve often unique processes supporting our institutions; and that, critically, it may act to stifle innovation at precisely the economic and educational inflexion points where innovation is most required. Cloud solutions, while perhaps offering immediate economies, raise a series of concerns about data ownership, protection, and capacity to innovate. Differences in national or supra-national legal frameworks - particularly around privacy - make a complex set of issues more complex still, with insufficient experience or case law to provide rounded and mature perspectives. Above all, if cloud offerings are not to become another means of proprietary lock-in, and act to retard innovation, open interfaces with a degree of stability are essential. At a time when higher education is seeking to innovate in an increasingly global context, the lack of resolution of legal issues surrounding cloud offerings might – without exaggeration – be regarded as representing a ticking time-bomb.

It is entirely appropriate, in this context, that urgency surrounding resource constraint and cost drives education to consider open source software more thoroughly. Such considerations, however, should be comprehensive and rounded, and go beyond the simple cost of adoption of open source software. It should begin to factor in the longer-term perspective of the relationship between collaboration, open source software, and sustainable innovation serving education. It should consider that the adoption of open source is only part of the equation, and that contribution – which is not limited to contributing software and technical resources - is vital for the future health of our emergent open source software communities.

It is appropriate, also, then, that in a period of declining available resource for higher education, and a matching decline in institutional IT budgets, that due consideration is given to how those budgets are spent. It is increasingly obvious that the cost of information and communication technologies supporting administrative purposes is disproportionate, when considered against the costs of technologies deployed to support the core mission areas of learning, teaching and research. This is in part, at least, an artifact of the frequently

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 The report – 'The Future of Higher Education: Beyond the Campus' was produced by Educause, CAUDIT, SURF and JISC
[2]http://www.educause.edu/Resources/TheFutureofHigherEducationBeyo/194985

[3] Software and Collaboration in Higher Education: A Study of Open Source Software Paul Courant and Rebecca J. Griffiths http://www.sr.ithaka.org/research-publications/software-and-collaboration-higher-education

excessive licensing costs associated with "business" software transposed into an academic environment noted by the Courant Report'.

Licensing cost, however, is not the only factor. We should remind ourselves that supporting and enabling learning, teaching and research with digital technology are relatively new phenomena. While certain areas are better understood than others, education, including higher education, is at the start of a transformative journey in this respect. Inclusive collaboration within education to produce software, collaboration that draws on lessons from highly distributed open source software development, can enable the early realization of innovation far more readily than more circuitous commercial-proprietary routes. This disintermediation of innovation, closing the loop between the practitioner capable of identifying needs, and developer capable of creating software to realize solutions to meet them, is arguably the central objective of educational software development. Methods associated with open source software do not necessarily close this loop automatically - but make the loop far easier to close by making its elements more visible and transparent.

The broad direction we advocate is sometimes portrayed as anti-commercial. The opposite is true. Licensed appropriately, open source software creates conditions for commercial opportunity, and such commercial opportunity is an essential component of the development of a healthy software ecosystem serving innovation in education, rather than acting to restrain it. Both Jasig and Sakai developed global commercial partnership programs over the last decade. Continuing to nurture those programs, and engage with a variety of commercial partners is a vital part of ensuring choice and flexibility for educational institutions into our joint future. We remain committed to developing commercial engagement in our support ecosystem. Strong and inclusive communities, with strong organizations to serve them, are the best guarantee both against monopolization and for innovation.

3: The value of Apereo

3.1 The role of the Foundation

The Apereo Foundation provides a framework for the development of open source software, and the communities that support it, in the service of higher education. We enable higher education institutions to identify objectives, and connect with other institutions and resources required for the realization of solutions. A key aspect of this aggregation of supply and demand is the reduction of much of the friction widely associated with collaborative efforts. We accomplish this by providing a range of common licensing, community and technical services, together with a range of opportunities to collaborate and construct partnerships around common goals. Agreement around this flexible service and IPR management framework reduces the necessity of negotiating point-to-point agreements between multiple institutions, and its concomitant overhead. Our network of institutions offers significant opportunity for seeking collaborators to help create innovative solutions.

The services Apereo offers are provided collectively, typically, because they would be less efficiently provided on an institution-by-institution basis. The foundation, then, is at core an organization rooted in the principle of subsidiarity, performing only those tasks that cannot be more effectively provided at a more local level. This approach acts both to reduce overhead, and encourage direct participation and contribution.

Essential services and functions include –

- Management of inbound and outbound licensing, by providing a neutral central agency in which to vest the use of contributed intellectual property. The hard-edged aspects of these roles are accompanied by softer-edged advantages of a common licensing and IPR regime: such a regime greatly facilitates the development and maintenance of trusted partnerships to undertake common work on specific activities and projects.
- Providing community and technical infrastructure in the form of mailing lists, wikis, web sites, issue tracking systems, conferencing facilities etc.
- Providing event organization and facilitation. Our principle annual meeting is currently held annually in the United States. This is accompanied by an annual meeting of a less formal nature – typically in an 'unconference', or less formal, format, and regional meetings on four continents. The foundation provides support for these regional events in terms of providing speakers, and helping support translation services.
- Providing financial management, including financial management for projects, software communities and communities of interest.
- Promotion of projects, software communities and communities of interest through a range of outreach activities.
- Enabling an incubation process for new projects to gain and share experience of sustainable development and sustainability. This is accompanied by an increased focus on support for other aspects of the software and community lifecycle.
- Providing opportunities to collaboratively fill gaps in project expertise – such as UX design or marketing.

- Providing a series of physical and virtual spaces where higher education institutions and others can share experience, access the experience of others, and broker innovative new initiatives.

The Foundation is a legal non-profit entity registered in the state of New Jersey. It is deliberately lightly staffed to provide the core services listed above in a cost effective manner. The Foundation consists of a small number of part-time and full-time staff (the Apereo Executive) that works with individual and institutionally committed volunteers to execute decisions made by foundation and project governance structures. These include a foundation-level Board of Directors, and bodies governing individual project, software community and communities of interest.

3.2 The role of the Apereo Board

The Board of Directors is the primary governance body of Apereo. It is elected by nominated voting representatives of the Apereo membership in annual elections.

The Board of Directors has three primary roles:

- Strategic: The Board works with the Apereo membership and broader community of adoption to inform and develop the strategic direction of the Foundation.
- Safeguard: The Board is the principle check and balance on the Apereo Executive, ensuring that the executive serves the mission of Apereo, acts to seek strategic solutions, and executes strategic decisions in a timely manner consistent with the vision of Apereo as a facilitating networked organization.
- Catalyst: The Board engages the broad higher education community, stimulating the development of new projects, and building connections with peer organizations with missions aligning with that of Apereo.

In undertaking these roles, the board is mindful of the overarching strategic imperative for the foundation to serve its member organizations according to its mission, and the principles outlined above.

The Apereo Board meets once per month for an hour, by teleconference, except in the month of the Open Apereo Conference, when it meets face to face. A document summarizing expectations of Board members can be found at http://www.apereo.org/content/apereo-foundation-board-member-expectations.

3.3 Regional and national partnerships

Apereo was founded on the principle that there is not a single, universal organizational or development path, appropriate to all open source software serving education, in all contexts, or at any given point in the development lifecycle. We aim to be open in all respects – including being open-minded to new approaches.

As it continues to explore those new approaches to the creation and maintenance of software to serve the academic mission, the sector will require a variety of organizations to reflect and represent the diversity of institutional and other needs. It is therefore essential

that Apereo develops and maintains partnerships of reciprocal benefit and understanding to deliver its mission. Our partnership with the ESUP Consortium, a group of seventy-plus French higher education institutions, is a signal of how we intend to progress this agenda. ESUP remains a distinct and self-governing consortium serving the higher education community in France, where it represents over 80% of the sector. Apereo, and its predecessors, Jasig and Sakai, recognizing the need for ESUP to represent the needs of the community in France, formed a practically focused memorandum of understanding between our organizations. ESUP encourages its member institutions to become members of Apereo, and the two organizations collectively focus on

- Resource pooling around the incubation of new projects, software communities and communities of interest. This will extend to other areas of the software and community lifecycle as we develop the incubation scaffolding processes further.
- Encouraging the adoption of Apereo software, and of contributions of code, documentation and experience back into our projects, software communities and communities of interest. Adoption of uPortal and uMobile, and exploration of Sakai as a platform are examples of how our partnership has begun to make a significant difference.
- Making a material contribution to projects where appropriate. French interest in the Apereo Open Academic Environment (formerly the Sakai Open Academic Environment) has been accompanied by contributions of material resource to help sustain the further development of OAE.

Apereo is actively growing regional communities in many parts of the world. As they continue to develop, we anticipate that they may establish their own non-profit entities where appropriate to meet specific local needs, working with Apereo where it makes most sense to do so. The principles of subsidiarity and federalism will guide us into this more complex – and more rewarding – future.

3.4 Foundation, projects and resources

Our developing perspective of Apereo located within a network of regional and national partnerships has prompted an overdue reflection on the nature of the foundation itself. Organizations supporting community and open source in higher education have tended to take an approach that is a close analog of building a conventional business – without necessarily attempting to consider or assimilate other key features of open source software development and community organization. Such features might include: – early, unrestricted and frequent release of software artifacts for community judgment, feedback and correction; encouragement and reward of volunteer, in addition to dedicated staff, effort, and recognition of inclusive, emergent and diverse governance structures, rather than "master patterns" imposed from above.

"Community Source", as an approach, has arguably tended to create a somewhat monolithic, conventionally structured and top-down organization. It has a tendency to rely on 'command and control' organizational patterns, and relies on incremental membership and adoption growth in a manner similar to conventional 'sales' as the most significant means of resource aggregation.
The consequences of this approach require some unpicking; the first concerns resource aggregation. Single organization by organization recruitment will always be necessary, but, put bluntly, an approach based exclusively around 'sales' is likely to be highly competitive to

the exclusion of other approaches - and not only competitive with commercial-proprietary solution providers, but with other open source communities. Richard Stallman has succinctly identified a significant issue here: "competition itself is not harmful; the harmful thing is combat". We do not operate in a zero-sum game. In order for one education-based open-source organization to succeed, others do not have to fail, unless one holds a near-religious perspective that an organization's approach to software creation is the only correct one. Competition that shades into combat acts to retard further re-alignments amongst open and community source groups within higher education at precisely the point where such realignments have significant potential to improve resource aggregation, and better serve education.

The second consequence might concern consideration of *how* resources are organised. The mix of volunteer activity found in open source communities, and institutional-directed activity found in a business or conventional consortium creates a tension that can be difficult to reconcile. Add the tension of foundation-as-directional-surrogate-software-house to this mix, especially in the context of a large and complex domain space, and the result can be profoundly dysfunctional, particularly for immature or new projects. The net effect of this approach will most likely be to drive volunteer contributions away – thus negating a principle benefit of open source software development under the banner of an (entirely false) sense of "control".

Apereo sets out to provide an enabling framework for projects, rather than seeking to direct and micro-manage them. Projects themselves are encouraged to learn from the experience of others, and factor into their thinking the potential for developing paths to sustainability that do not rely solely on a single organizational or resourcing model (such as cash or other direct resource contribution) throughout their lifecycle. A frequent review of sustainability models is essential: that which suits a nascent software community at one point in its lifecycle may not suit another.

3.5 Incubation - an essential ingredient

An incubation process plays a significant role in the formative stages of the path from innovation to sustainability for a software project or community. It supports a critical part of the software and community lifecycle, bringing the experience of those who have travelled the path before – successfully or unsuccessfully – to bear for the benefit of the new project, and the community as a whole. Some of the collective experience the incubation process channels is relatively hard-edged; the need for a consistent inbound and outbound licensing regime, for instance. Other areas, such as the development of sustaining communities around software artifacts, reflect specific experiences in specific contexts, and are far more difficult to codify. This is why incubation is, at core, concerned with scaffolding a systematic mentoring process, rather than simply laying down a set of "rules" to follow. The process is two-way: in addition to the benefits for the software or other community in question, it should add to the collective experience of the Apereo community as a whole in clearly understood and documented ways wherever possible.

The experience Apereo marshals and seeks to represent the needs of education in a number of countries, and in particular represents a range of experiences within higher education; teacher, researcher, software developer, learning technologist or those engaged in institutional management or leadership.

The objective of the incubation process is not to guarantee sustainability, but to ensure that a number of criteria determined by collective experience are met at a formative stage of development - before a project or community is approved as a endorsed Apereo project. The incubation process serves as an entry point for a project or community seeking to become part of Apereo. For the adopter, the incubation process criteria are a guarantee that a project has faced and dealt with the issues it needs to.

Whilst is important to draw general lessons around software sustainability from the experience of projects and communities, it is important to remember that sustainability is a concrete issue, rooted in the lifecycle and context of a specific software or community. There are therefore limits to the transferability of a model or models. This is why the Apereo incubation process provides both a written checklist, summarizing distilled community experience, and community-based mentors to provide advice for an incubating project.

A project that does not progress from incubation to operate as an endorsed Apereo project should not be considered a failure. There are a variety of reasons why this might happen, ranging from technical feasibility to lack of broader community interest. The process is designed to identify such issues and test the viability of a project from a number of perspectives at an early stage of its development. This outcome of the process acts to mitigate against an extended investment of resources by institutions or individuals where this is inadvisable. This, in itself, represents a significant benefit of incubation.

3.6 Conclusion: The benefits of Apereo endorsement
Apereo is an organization of higher education institutions and other members that "collaborate to foster, develop, and sustain open technologies and innovation to support learning, teaching, and research". Full participation in the community brings a series of tangible benefits for a nascent project, ranging from access to the experience of others working in similar fields as mentors, through to Intellectual Property Rights (IPR) management, technical expertise, licensing, legal, meeting, and communications infrastructure. Participation also provides access to a range of potential global adopters and contributors, and to the outreach resources of the Foundation itself, with, for example, conferences and events spread across eight countries on four continents. Fundamentally, participation allows a project or community to become part of a larger network, and gain the benefits of network effects. This network is not confined to membership of the Apereo Foundation. We seek to build reciprocal relationships with other similar organizations. This is at the heart of our growing relationship with the ESUP consortium in France, and our developing regional foci in Japan, South Africa, and Europe. We intend Apereo to become a more powerful voice for international collaboration in education, supported by a culture of contribution. A supportive incubation process, instilling and refining our core values, and developing practical sustainable solutions, is an essential component of the formative stage of developing that culture.