

Improving Institutional Effectiveness in Operations and Beyond Utilizing an Electronic Transcript Exchange Service

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Contemporary institutions of higher education encourage veneration of the past through anachronisms, their rhetoric, and their design. This characteristic, however, owes less to scholarship or tradition than to a mood of nostalgia. Universities tend to have far greater longevity than institutions of government or commerce. They have managed to survive the Industrial Revolution and other upheavals with remarkably little structural change. Nevertheless, it is still uncertain how, or whether, they will adapt to a post-industrial world.

Boria Sax¹

The impact of today's post-digital world is washing over all of the educational institutions of our society. While colleges and universities have survived into the digital age, they are subject to pressures and concerns that would have surprised and probably confounded most of their predecessors.

The digital world in which we live, with its 24/7 engagement and fulfillment processes, has changed the way consumers -- call them clients, customers or even students -- define appropriate levels of service. Many schools, colleges and universities have been trying to respond to this rising expectation of service by reorganizing their service delivery functions, pushing more services on to the web. However, this transformation of service delivery has not yet made its way throughout the educational environment.

Market forces are acting upon the academy in a way never seen before. Rising college

costs have become the subject of newspaper articles, op-ed pieces, and even congressional hearings. Congressional members have introduced bills in the House of Representatives, no less, to control college cost increases by government regulation. Such a move would supplant the current authority of states and institutions and take "market" out of play with regard to much of the cost of college attendance.

Given these external pressures to control costs, it only makes sense that the resource allocation processes within universities have become even more challenging. With smaller overall increases, the contention for resources inside the university has increased significantly. Understanding that the academic mission of the university is the primary reason that students attend institutions of higher education, the internal demands for efficiency are ratcheted up even higher on academic support units, e.g. admissions, records, institutional research,

etc. While this is problematic within any given academic year, the imperative to improve service and reduce cost can free institutions from the shackles of traditional organization and process, and can produce extraordinarily creative and innovative ideas to meet the challenges of the future. The re-conceptualization of transcripts, their processing, and the potential uses of the data locked inside presents just such an opportunity.

Albert Einstein is reported to have once said: "The significant problems we face today cannot be solved at the same level of thinking we were at when we created them." One can clearly see how this maxim applies to the thinking about transcripts: how to process them and their informational utility to both the sending institution and the receiving institution. Traditional thinking about transcripts has focused almost entirely on their status as an artifact with specific operational processing requirements. These documents, whether hardcopy or electronic, have been and are routinely treated as merely transportable records of individual students' educational achievements.

There are significant strategic and operational benefits that can be realized by institutions with a more comprehensive

vision of the uses for transcript data. These potential benefits can apply across administrative units/silos, the entire institution, and across the educational landscape as a whole.

Postsecondary institutions are not alone in this brave new world; all of the educational segments are encountering challenges to traditional methods, structures and approaches. While there have been public and private educational entities for hundreds of years, the extraordinary array of educational options today is truly staggering. These new educational options seem to increase with the advent of new technology, e.g. the World Wide Web, as well as with each new wave of educational entrepreneurialism.

In the higher education segment, there has been an explosion of alternative modalities of institution and instruction. Traditional institutions of higher education have created some of these alternatives. But the most explosive growth and vitality in these programs have taken place in a new kind of higher educational entity. For-profit institutions are branching out from their historical base of proprietary schools, previously focused on technical and career-oriented education, and moving into the

undergraduate and graduate space, which has been the nearly exclusive province of non-profit institutions. This has been one of the most compelling educational movements of recent years. These new educational enterprises have built innovative educational models that match the needs and desires of students for course offerings scheduled at convenient times, paces and degree programs designed to advance the adult learner in the workplace.

At the K-12 level, there have been private schools, often times with religious affiliation, for hundreds of years. In fact, the concept of universal public education was the latecomer, reaching near universality in the United States only during the last century. The accelerated expansion of educational choices in the last twenty years has been astonishing. Home schooling, beyond the traditional manner of a child learning at her parent's knee, is an expanding method of instruction utilizing well-coordinated course materials available in a variety of formats, modalities and delivery systems.

Charter schools have become a factor in the K-12 educational landscape. As this movement has grown, it has begun to serve a remarkable array of communities. Often created with an expanded focus on

achievement, one can find them in wealthy communities and poor ones as well. Charter schools have been created to focus on a particular educational philosophy or approach typically targeted at talented, high-achieving students whose families feel they have not been accommodated in the traditional school system. Charter schools have also been founded to create and maintain a college-going culture in poor and disadvantaged communities.

There are magnet schools, schools within schools, and experiential-based schools -- the array of educational approach, which shows diversity of approach with a consensus of purpose to provide the best preparation possible for today's students for tomorrow's world.

The element common to all of these diverse forms of educational engagement is a call for better assessment models to ensure that society's investment in providing educational opportunities results in students well qualified to be successful in the 21st century's global economy.

An Answer to the Obvious Need for Improved Assessment

It is entirely possible and indeed quite probable that the traditional academic

transcript can be an excellent tool to use in assessing the return on investment for the resources that provide educational opportunities. In the following paragraphs, the benefits and particulars of the transcript as a tool of assessment and analysis are described.

Strategic Institutional Benefits

In addition to the operational benefits described elsewhere, there are significant strategic benefits that will accrue to institutions implementing a comprehensive electronic transcript exchange service. Some of those benefits are internal to the institution and may enable the institution to better predict which applicants will become successful graduates of their institution. Some of those benefits will be external to the institution and provide feedback at the local school level about the curricular alignment between the school and the college or university. On a much larger scale, the ability to do analysis and study broadly across applicant populations can be used to engage in this setting of state and national standards for school outcomes.

Institutional Analysis and Predictability Studies

At the institution level, university admissions processes are often very complex and may

have a lot in common with the chaos theory. Like trying to predict the weather, admissions officers are predicting the future success of applicants on the basis of a variety of factors at a fairly high level. In considering an applicant, many institutions reflect, in concert with a variety of other factors, on the success of students from that school, similar course-taking patterns, standardized test scores, and similar GPA, as predictors of the potential success of that applicant. There have been studies that try to link certain courses and grades at high school as predictors for future success. Imagine the opportunity that presents itself when all of the course data for all the applicants is available in a dataset that can be searched, sorted and analyzed.

Admission officers often talk about trying to find the students for whom their institution is the “right fit”. Most often this concept of “right fit” is used in relation to the social and co-curricular environment of the institution. With the ability to look at all courses taken and grades received, institutions might be able to create heuristics that would aid in insuring the right academic fit as a part of the admissions decision process.

Curricular Alignment with Feeder Schools

Communication across the segment boundary between K-12 and postsecondary educational institutions about curricular alignment and preparation issues is increasingly common. High school faculties are often looking beyond helping students succeed academically in high school to preparing students for the rigors of postsecondary education and the workforce.

As curricular emphases change over time and within the various segments, their points of contact, i.e. the college-going student's preparation, travels across an arc sometimes resulting in close alignment, sometimes quite distant alignment, or even non-alignment. Historically, conversations about alignment in preparation have not been informed by real data. Throughout the last decade of the twentieth century, significant efforts were made to focus on understanding the data of student success in college and its relationship(s) to student success in high school. There is a great desire on the part of high school faculty and administrative leaders to understand academic success factors and their part in preparing students to be successful in college. These efforts involve faculty-to-faculty pedagogical discussions and theoretical approaches to

learning. No tool is more effective than a thoughtful analysis of student performance utilizing data at the individual course level in both college and high school.

Historically, the cost of data collection and entry, the difficulties of working with multiple data systems each with its own student record formats, and the challenges of working across the boundaries of the educational segments have prevented the use of this important data. With all the data stored in congruent structures at the postsecondary institution, research on these important topics can be greatly facilitated.

Analysis to Inform State Standards and Exit Exams

On a fundamental level, research into the relationship between student academic success in high school and student academic success at the postsecondary level would provide information valuable in the discussions about the establishment of state curricular standards and the content of exit exams. For education faculty from the postsecondary institutions, interested teachers/researchers from the secondary level, and educational policy researchers, access to all student academic records across the segments would be invaluable in considering the success of certain groups of students, as compared to all students. The

creation of statewide, or even a national, student record repository would dramatically stimulate productive research in this important area of curriculum design and assessment.

The last few years, with passage of legislation such as “No Child Left Behind”, have seen an extraordinary increase in the forms of assessment of educational approaches, systems, schools and teachers. Creating environments leading to the development of appropriate educational “outcomes” has become the watchword of policy makers and legislators across the country. External pressures for results, defined by sometimes conflicting legislative mandates, affect daily activities in schools at all grade levels.

There has been an explosion in the number and complexity of state-mandated annual grade level tests and exit exams. Interestingly, a report released by the Washington, DC-based Center on Education Policy on March 7, 2007 says that their research has shown that the score a student makes on a state exam isn’t directly linked to whether the student goes on to college. The study conducted in urban school districts in Texas and Mississippi found little connection between the exit exams and college-going

behavior in the districts studied. The study entitled “It’s Different Now: How Exit Exams Are Affecting Teaching and Learning in Jackson and Austin” is part of a multi-year effort to monitor the impact of exit exams. Comprehensive research is ongoing in regards to course-taking patterns and success demonstrated by course grades, which may well inform the construction of exit exams in the future. But first, it is essential that all segments of the educational enterprise learn to think differently about the true nature of high school and college transcript.

Reconceptualizing the Transcript

School districts and institutions of higher education have come under increasing pressure to cut costs while conducting on-going assessments, etc. To that end, there are large operational and strategic benefits that can and must be realized by institutions with a more comprehensive vision of the uses for transcript data across administrative divisions, the entire institution, and across the entire educational landscape. These benefits cannot be realized by institutions whose vision is constrained by too narrow of a transcript definition.

While the technology to exchange transcripts electronically has existed for many years,

there has not been widespread acceptance of electronic transfer processing thus far across the segments, which comprise the educational enterprise. This stems significantly from the reluctance across all segments of education to fundamentally re-think their approach and free the data inside from the document itself. The majority of the efforts to implement electronic transcript exchange services to this point have been focused on operational and technical concerns, the “how” of it. Let us now consider the “why” and the “what”. To accomplish this, the tone must move away from the technical concerns of transaction datasets and mapping and reconsider what a transcript really is and what it is meant to do.

Let’s briefly consider the elemental nature of the transcript. The Merriam-Webster’s Online Dictionary’s definition is:

Transcript 1: a written, printed, or typed copy; *especially*: a usually typed copy of dictated or recorded material **b**: an official or legal and often published copy <a court reporter’s *transcript*>; *especially*: an official copy of a student’s educational record 2: a representation (as of experience) in an art form 3: a sequence of RNA produced by **transcription** from a DNA template.

It is definitions like the one above, which have led many people to think of transcripts

not in the terms of its content, but rather as a document, in terms of its form. Within institutions, student records are often thought of as information to be manipulated and sorted. When a student record crosses the boundaries between educational segments., e.g. high school to college, college to college, undergraduate school to graduate school, or university to industry, there is often a fall back on the traditional thought process of a transcript as a document on paper.

A more contemporary definition of a transcript might be:

Transcript: 1: a vessel containing official data, which define and describe the educational record of a student, which may take the form of a document, dataset, or individual data elements.

The “old” thinking about transcripts has caused each segment and its institutions to construct operational processes to deal with the printing, mailing, receiving, indexing and ultimate analysis of these documents. In some institutions, there is an army of temporary workers processing incoming transcripts. In others, transcripts stack up in mailboxes waiting to be received. Some institutions have even admitted students on self-reported academic information, because they could not find a way to process

incoming transcripts in a timely way. It seems that we have crossed the traditional boundary, i.e. the paper processing of transcripts. As effective and efficient as these processes are, they are still fraught with several significant problems: timeliness, cost, accuracy and access to the information. Each of these problems can be addressed through the implementation of comprehensive electronic transcript exchange services.

This is an historic moment in which the technical constraints have been removed enabling us to think in a different way about the whole process. Too often, thinking is bounded by the practices and thinking of the past. Chairman Mao once wrote: "A frog in a well says, 'The sky is no bigger than the mouth of the well.' That is untrue, for the sky is not just the size of the mouth of the well. If it said part of the sky is the size of the mouth of the well that would be true, for it tallies with the facts."²

There is an opportunity now for creative people in all educational segments to rise up out of their individual wells and truly see the sky and the opportunities that are before us. These challenges are not just across segments or between institutions. There are also significant barriers to cooperation inside

institutions. Colleges and universities need to bridge the gap between the administrative silos of admissions, the registrar, etc. to implement a comprehensive institutional process for sending and receiving electronic transcripts. The implementation of such systems can be a vital first step in releasing and organizing powerful data for research and assessment.

There are several dimensions of the overall attractiveness of electronic transcripts services. Each of these dimensions is compelling in its own right, and together these may constitute a classic "no-brainer".

Timeliness: At the sending institution, paper documents take time to print, sort and mail. It all depends upon the effectiveness and efficiency of an individual counselor or transcript clerk. Once the transcript has left the sending institution and is put into the postal system, it is ultimately dependent upon a person ensuring that it is delivered to the correct location. At most institutions, these transcripts are supposed to be routed together to a single receiving location. God save the person whose transcript is delivered to the wrong department on a college campus, where it may never be seen again.

At peak processing times, there may be delays of days or weeks, or even months, before those transcripts can be effectively presented to the people making the admissions decisions. This entire process from sending to presentation of domestic transcripts will take days at best and several weeks at worst. International transcripts are dramatically impacted by the same components of the process, preparation, mailing and receipt. Processing delays for international students can be encountered both inside and at the intersection of national postal systems. It is not unusual for international transcripts to take ill-directed journeys, which may take months to complete.

Where imaging systems exist, the records are scanned, indexed and attached to the individual applicant's record. In some cases the transcript data are received and are manually entered into a student information system at the local campus. In other cases, optical character recognition (OCR) technology may be used to enter transcript data directly from the paper document to the student information systems. Such systems are arguable more timely than pure paper or "keyed" data, but there is still a high chance for error.

A comprehensive electronic transcript exchange service can take this process from weeks or months, and reduce it to minutes. At the ultimate implementation of a comprehensive Electronic Transcript Exchange Service (ETES), the student can make a request, have it fulfilled by the sending institution, and a transcript received by the sending institution within seconds. While this is a difference in kind and not degree from current processing standards, there is an entire generation of applicants, students and their families, whose expectations have been honed by the ATM at their local bank or convenience store and they expect nothing less.

Costs: In non-electronic transcript exchange service (ETES) environments, manual processing is required for data keying, document storage and retrieval, sorting, matching, reconciling, envelope stuffing, stamping, signing, etc. Recent studies presented at AACRAO and in journals have projected that the cost to a sending institution for each transcript is somewhere between \$6.00 and \$9.00. A large comprehensive high school with a significant population of college-going students, say 350, each applying to 6 colleges and each needing 2 copies sent to three of the colleges or universities might spend between

\$25,200 and \$37,800 on transcript production and transmission.

The same studies put the costs at a receiving institution between \$9.00 and \$12.00 per incoming transcript. A university with 20,000 freshmen applicants, 8,000 transfer applicants, and 6,000 graduate applicants spends between \$306,000 and \$408,000 on the transcript receiving process.

In a recent Texas study, it was concluded there could be as much as a 92.7 percent reduction in the processing and labor costs in an ETES environment. The cost savings at our examples above would be between \$23,360 and \$35,040 at the high school and even more dramatically between \$283,662 and \$378,216 for the college.

Accuracy: As with any manual, paper-based process, mistakes can be made. On the sending end, the wrong transcript can be put in the wrong envelope. Alternatively, the transcript can be sent to the correct institution, but to the wrong address and be lost forever. In any given year at nearly every institution, there are cases where the appropriate department never receives transcripts even though they have been sent correctly, sometimes repeatedly, by the student's sending institution. Electronic

transmission reduces the opportunities for sending errors or receiving misdirection dramatically. Given the stakes, which include a young person's hopes and dreams, it would seem that improving the accuracy of delivery would be reason enough to implement an ETES.

One of the current issues plaguing admissions offices at all levels is the submission of altered or sometimes entirely fraudulent records. With desktop technology at such an advanced state, and perhaps the pressure to succeed in winning admission to the "right" institution being so high, the number of high-quality forged records is on the rise. This problem is increasingly seen in international admission both at the undergraduate and the graduate level. A robust ETES system can very nearly assure that the record is directly transmitted to the receiving institution with an acknowledgement sent back to the sending institution.

An ETES system also reduces the number of times the same data needs to be redundantly entered into multiple computer systems. This is particularly true for transfer students. Some of their course data might be entered into the admission system to be used in the decision process. Subsequently, the same

data or more likely a more complete transcript dataset would be entered into a transfer credit articulation system or a degree audit system to inform the student of the application of their transferred courses to the degree requirements of the new institution. This process is fraught with the potential for human error. Any mistakes at this level can have a devastating effect on the student. A comprehensive electronic transcript exchange service removes the possibility of human error from this process.

At one large California private university that receives more than 30,000 freshmen applications each year, a secondary school GPA for each applicant is manually calculated by the admissions office staff. The staff is truly remarkable in their attention to correctness throughout this process. Even with that attention, there are mistakes made each year that can have significant consequences for applicants. A fully-featured electronic transcript exchange services system would remove this potential error from the system. In addition, a transcript system can dramatically speed the GPA calculation process.

Access to Information: As long as one thinks of the transcript as a paper document, course detail data will remain trapped inside

the “hard copy” transcript document. There are numerous institutional interests in getting access to the course level of data encapsulated in that document. There are operational needs of the admissions office and analytical needs of the admissions office, as well as the office of institutional research, which might be well served by having dynamic access to “transcript” data. Course level detail is a tremendous research resource for faculty members interested in developing a greater understanding of the intersection of preparation and university success.

Over the years, there have been many research projects focusing on students with specific backgrounds and the interplay of those characteristics upon specific academic issues. Most of the time, these projects required each student’s course level detail need to be hand-inputted into a database. The costs involved, and the time required in that data entry, precluded creating a comprehensive database of all students’ preparation. Many more research projects that could have informed the overall understanding of factors impacting preparation levels could have been carried out but for the barrier’s cost and time. The often-overwhelming expense of manual data collection has essentially prevented

important analyses and “clouded” the making of related policy decisions.

Operational Institutional Benefits

Admissions

The office of admissions receives most of the operational benefits that accrue with the implementation of a comprehensive electronic transcript exchange system. Having said that, one needs to recognize that the true benefits are quite different depending upon how the admission process works in different areas of an institution’s admissions. There are substantial differences between undergraduate and graduate. Even among the undergraduate level, there may be fundamental differences between freshman admission and transfer admission. International admission at the undergraduate, as well as at the graduate, levels adds other layer of complexity.

Freshman Admissions

There is a good reason that the freshmen level has been the recent historical focus for electronic transcripts exchange. The volume of transcripts submitted in a relatively short period of time from tens of thousands of high schools across the United States, and from around the world, to thousands of colleges and universities almost automatically

“leverages” the value of technology. This process has been complicated by the lack of understanding of the benefits of an electronic transcript exchange services system that accrue to both the sending district or secondary school and the receiving college or school. Many of the ETES’ benefits are financial or cost related, as described earlier, but some significant benefits are informational, providing feedback about preparation levels and curricular alignment across the segments.

Let’s take an example of an institution and the number of transcripts they may receive and process. At one particular large competitive private, urban university during the period 2002 to 2005, the university typically received an initial round of about 25,000 transcripts from freshman applicants. Approximately 3,000 of those applicants were asked to submit a fall transcript as well. And finally, the 3,000 or so matriculants were asked to submit a transcript verifying their high school graduation. One must not forget the several hundred transcripts, which were sent more than once either as a result of grade changes, being lost in the mail, or applicant anxiety. The university in this example also received approximately 20,000 applications and transcripts for graduate admissions.

So at this one university, more than 50,000 transcripts were received from applicants in any given year. The process of indexing and scanning these documents into the imaging system to make them available online at the university is remarkably efficient, but requires the addition of twenty staff working two shifts to prepare the information for use in the admission process.

Other institutions without imaging systems are caught in a similar processing bind in regards to time, because of the added complexity of having to keep track of the actual paper documents as they travel throughout the admission decision process. The implementation of a comprehensive electronic transcript exchange services system would reduce the need for extra staff to engage in either scanning at institutions with imaging systems or in filing and tracking paper files at other institutions.

Transfer Admissions

At the transfer admissions level, the potential benefits of a comprehensive ETES system are enormous not just for the institution, but also for the applying student. The institutional benefits are similar to those at the freshman level: faster, less costly, and more accurate. At many colleges and

universities, transfer admission and course equivalency determination are not simultaneous. Admission decisions may be made on the basis of courses taken and grades received, while only taking preparation into account in so far as it applied to defined prerequisites. In the interest of institutional workload reduction, incoming students may not know how the courses they have taken apply to both their major requirements and overall institutional degree requirements until months later. Many transfer students across the country decide to attend institutions without knowing how their previous course work will apply. In some cases this results in a delay of more than a year in the completion of their degree, and if students had understood how their credits would be applied, they might have decided to attend a different university altogether.

An ETES system can dramatically speed these processes at any institution. With the transcript information available as data rather than as a piece of paper, institutions can use automated transfer credit articulation systems to feed the institutional degree audit system and produce results within minutes which can then be shared with the applicant in a timely fashion. Transfer students could make their decision

to attend an institution based on a clear and correct understanding of exactly how their previous work will apply to the degree program of interest. This would be a revolution in transfer processing and just in time as the federal government is pushing universal transferability of courses amongst all institutions receiving federal aid dollars.

As an added benefit, ETES can be used on a transcript function, which dwarfs the admission process. Most colleges and universities spend huge resources recording and evaluating courses taken by enrolled students either concurrently or during the summer at other higher educational institutions. Just as in the case of the initial admission decision, each course must be evaluated in a timely way to serve the student's educational efforts best. An ETES can accomplish this with minimum use of valuable admissions resources.

Graduate Admissions

Undergraduate admission has a well-defined cycle. Most applications have to be submitted during a period stretching from late fall through early spring, often no later than April 1. With the exception of early admission and early decision programs, most students are notified of their admission decision during the spring. There is a national candidate

response date, May 1, by which admitted students inform the institutions of their acceptance decision to attend or not.

Graduate admission is often fundamentally different. While there may be application deadlines, they are often disregarded. There is no date in the cycle by which admissions decisions are released, nor may there be a standard date by which admitted students must inform the admitting institution of their decision. Graduate admission is very opportunistic. Excellent students are identified in a variety of ways. It could be by the applicant's current faculty members contacting potential faculty mentors in the graduate program at another institution, by outreach programs, or professional meetings where undergraduate students may present papers. Admission decisions may be made on a rolling, individual basis and almost always in the academic department rather than in some central campus office. Fellowship decisions may be made also on an individual basis and opportunistic fashion. Graduate admissions are extremely competitive at both the institutional and individual level.

Graduate admission processing is truly a mixed bag at most institutions. Transcripts may go directly to the academic departments

or they go to central collection points and are then disseminated out to academic departments, or sometimes to both places. There is probably no area where institutional admissions can benefit more from a comprehensive ETES system than graduate admissions. Reducing the time from ordering the transcript to making use of it by an academic department is critical.

One interesting dichotomy in this processing is that many faculty members, admissions committees, and academic departments are most comfortable working with paper documents. While electronic graduate applications are spreading across the academy, a number of faculty members and departmental staff still want those applications and the accompanying documents like transcripts to be printed for the evaluation process. A comprehensive electronic transcript exchange service must include a methodology to produce a printable transcript in some sensible format. In some cases, it might be a PDF of the original transcript or an institutionally-defined printed transcript.

By storing incoming transcript data in a central electronic location with secure remote viewing capability, an individual applicant's "transcript" can be viewed and used

simultaneously by several departments/units, e.g. admissions, academic department(s), fellowships/scholarships, academic departments, etc. This flexibility and joint use can greatly speed the graduate admissions process for both applicant and the institution.

International Admissions

Most colleges and universities in the United States have some language about globalization in their strategic plan. This might take the form of study abroad programs. It might take the form of faculty members engaging in research and service around the world. It might take the form of significant outreach efforts to bring students from around the world to attend their institution. In fact, it is in most cases a combination of all three. If one considers the elements of a transcript processing which we have been discussing in this paper, timeliness, cost, accuracy and access to information, each of those elements is even more critical when it comes to international admission processing.

The time it takes from a student attending an international university to request a transcript be sent to an American university and its receipt can be several weeks. While a problem at the undergraduate level, the slowness of international transcript

submission and receipt is a significant issue at the graduate admissions level. Electronic transcript exchange services can take this process from weeks to minutes. Institutions that take advantage of electronic transcript exchange services can realize a significant competitive advantage over their peer institutions that have not done so. In the extraordinary competitive arena of international graduate admissions, particularly in science and engineering, this can be a significant factor.

Given the vagaries of international postal services, many students do not rely upon standard postal delivery to send critical documents like their transcripts. Transcripts are sent via FedEx and other similar services costing the applicants somewhere between \$20.00 and \$60.00 for each transcript. This is a significant cost to students that can be eliminated by the implementation of a comprehensive ETES system.

Accessing the information on an international student's transcript has two intermediate steps that do not occur for domestic students. Many international transcripts are written in a foreign language and thus must be sent to an outside service to translate the information into English. Subsequent to the translation, an evaluation must be done

articulating the educational system, calendar and grading into a form that matches the American educational system. Each of these steps can take days to perform the actual service. At crunch periods, the delay is measured in weeks. The most significant time loss is in the wait times at each step.

At full implementation of a comprehensive ETES, the international transcript would come to the repository, where the translation service would access it and subsequently post the results of their translation back to the repository where it can be accessed by the staff performing the credit evaluation. The admissions evaluator could then post the results of their work to the repository, where it could be accessed by departmental staff and faculty either online or to print paper copies of each document pertaining to that student's academic program.

Thus, international admissions decisions could be made weeks sooner, and prospective students could make more timely decisions about their plans. The increased speed and efficiency of the admissions process would allow more time for the student to attend to other processes, e.g. obtaining a visa, making travel, and financial arrangements, etc.

Registrar – Outbound

There is no institution of higher education that is only a receiver of transcripts. All four-year colleges and universities receive transcripts from high schools, two-year colleges, and other four-year colleges and universities. They send transcripts, sometimes to high schools, but more often to two-year colleges and other four-year colleges and universities. It seems reasonable that institutions who understand the benefits of receiving electronic transcripts would also see the benefits of sending them as well. Colleges and universities send transcripts to graduate programs, internship programs, and to companies interested in hiring their graduates.

Given the competitive nature of some of these programs, the timeliness of the transcript request fulfillment can be and often is a factor in the student receiving the opportunity for further study or satisfying work for which they have been preparing. The use of an ETES can increase the speed and accuracy of delivered transcript data and do so at generally lower costs.

Speed, accuracy and cost are compelling advantages of an ETES. These advantages are beneficial to applicants and students, but

also to the admissions office, the registrar, institutional research academic advisors, and a host of others.

Characteristics of a Comprehensive Electronic Transcript Exchange Service

“Our options are to learn this new game, the rules, the roles of the participants and how rewards are distributed, or continue practicing our present skills and become the best players in a game that is no longer being played.”

Larry Wilson

This paper offers a compelling invitation to think broadly about institutional solutions for electronic transcript exchange. There are several essential characteristics and attributes that define a best of breed, comprehensive Electronic Transcript Exchange Service. These attributes are:

- Flexibility
- Cost Effectiveness
- Stability/Experience
- Security
- Ease of Use

Flexibility

There are numerous computer environments, operating systems, and databases at both sending and receiving institutions. The best solution must be able to accommodate an array of those technical environments seamlessly. So the input or upload process

must be straightforward and flexible. It should not matter whether the user is a counselor sending transcripts from a desktop computer, a district manager sending transcripts from a district information center, or a college registrar sending transcripts from a fully-integrated student information system. The chosen solution must align the current standards from Schools Interoperability Framework Association (SIFA) and Postsecondary Electronic Standards Council (PESC) and be continuously in compliance with whatever standards may be developed in the future.

The selected solution should be flexible in its output as well. Some college and university people, who are oftentimes faculty members, want to see an actual representation of the physical transcript at the sending institution. A good ETES solution should be able to present a PDF version of the transcript data, as well as output organized in whatever reporting format users want. The best of breed solution accommodates standard transfer credit articulation and degree audit systems as well. Incoming "transcript" data must be able to move as seamlessly as possible through all the "plumbing" of academic records/processes that take someone from prospect to successful *alumnus/a*.

Cost Effectiveness

The two primary driving forces for implementing a comprehensive ETES are to improve customer service and to reduce costs. The favored solution must be cost effective to achieve the second of these two primary goals. One of the critical elements of being cost effective in a college or university environment is budgetary control. An acceptable ETES should enable you to predict the budgetary impact from year to year regardless of changes in transcript exchange volume.

Stability/ Experienced

The best solution will be stable and proven through experience in providing the required services. Recalling that the transcript is the vessel of data describing the students' academic record, it is also important to note that the transcript is the vessel of that student's hopes and dreams for college, graduate school, and employment beyond. The transcript also includes mission-critical data and the search for partner/vendor should include consideration of the prospective partners' experience in handling this important data.

Secure

It is the college/university's fiduciary duty to students that the selected electronic transcript exchange partner has a proven track record of providing secure data handling. That partner/vendor must have reliable systems with redundant network servers to ensure that student data is at all times both protected and available. In addition, it is essential that the student data is encrypted and is only transmitted across secure networks.

Ease of Use

An important consideration is the ease of use of any system. The best solutions are end-to-end systems providing easy access to all the potential and appropriate users of the system whether they are students, high school counselors, admissions officers, financial aid officers, or others whose work legitimately requires them to access this data.

Conclusion

Regardless of whether it is in the P-12 segment or in higher education, the successful educational institution in the 21st century must be able to respond effectively to the external pressures created by increased service expectations from students and their families, while simultaneously

controlling costs. Students and their families view themselves as consumers of educational services and information in a way quite different from even a few years ago.

The world surrounding the entire educational landscape has become an environment of nearly immediate gratification of the needs and desires of consumers. Many in the education community held out hope that schools, colleges and universities would continue to be perceived as different from businesses that provide services to students and their families. While schools, colleges and universities used to be regarded as special institutions, this is increasingly no longer the case. Education is seen much more as a commodity in the 21st century, and this perception may change even more rapidly in the next decades than it has in the past several hundred years. One only has to pick up the daily newspaper to see the explosive growth of alternatives to traditional higher education, which are creating ever-mounting pressure on the education community to be more efficient and effective in executing their function in today's society.

The implementation of a comprehensive electronic transcript exchange service (ETES) system responds directly to those demands. Increased effectiveness will be demonstrated

by the data-driven curricular alignment across educational segments, P-12 to college and college to college; policy decisions informed by comprehensive analysis of student preparation; and admissions decisions shaped in part by research into critical factors of institutional success.

Operational benefits are clear. Studies presented at AACRAO and in other environments have shown that the full implementation of an electronic transcript exchange service can reduce production costs per transcript by more than 90% over paper transcripts. This systematic approach to transcript processing is dramatically more effective, secure, and timely than the current paper-based process. Without being open and accepting of a fundamental rethinking of

core processes like the ones discussed in this paper, the institution of education will struggle to meet some of the rising expectations of a post digital world.

The academic transcript (both P-12 and in higher education) is no longer a hard copy document that is read, evaluated and stored for very limited purposes. Transcripts record sets of potentially valuable data, which can be moved and used securely, quickly and inexpensively to achieve multiple appropriate and valuable services. Completing the transition from pieces of paper to a set of valuable electronic data that can be used in ways to benefit students, schools, admissions officers, registrar and institutional researchers requires a partner to provide value-added services to all concerned.

¹ Boria Sax; Academic Tradition in a Digital Age, On the Horizon, September 2003

² On Tactics Against Japanese Imperialism (December 27, 1935), Selected Works of Mao Tse-Tung, Vol. I, p. 159

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