Statewide Curriculum Management System

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1. Project Summary

In May 2015, TBR released a study outlining recommended steps to create a complete college system. The Complete College Tennessee Act 2010 provided mandates to explore better opportunities for collaboration throughout the TBR system. One of the recommendations is to assess central and academic administrative activities to reduce duplication.

The goal of the project is to create a centrally accessible Curriculum Management System (CMS) to facilitate an online, paperless submittal and approval process for all curriculum updates. To foster better communication and collaboration, the new CMS tool will store all curriculum library additions, changes, and deletions in one database that each institution can access. At the completion of the project, institutions will have the ability to follow their internal curriculum management process, then submit to TBR for final approval. All changes to the centrally stored curriculum libraries will get communicated to the appropriate parties. If an institution has Acalog, the system is designed to automatically update their Acalog catalog.

To complete this project, a committee was formed to create a Request for Proposal (RFP) to evaluate and select a curriculum management software to replace our current paper based process. The selected vendor will work with TBR and the committee to implement and standardize a process for each intuition to follow. The CSM tool is scheduled to be fully functional by December 2016.

2. Background Information

The Complete College ACT of 2010:

In January 2010, Tennessee passed the Complete College Tennessee Act (CCTA), a comprehensive reform agenda that seeks to transform public higher education through changes in academic, fiscal and administrative policies at the state and institutional level. At the center of these reforms is the need for more Tennesseans to be better educated and trained, while also acknowledging the state's diminished fiscal capacity to support higher education. (last updated January 2011)

At the heart of the CCTA is a new Public Agenda for higher education which establishes the direct link between the state's economic development and its educational system. The overarching goal of the Public agenda is to have Tennessee meet the projected national average in educational attainment by 2025. The primary state policy levers for addressing the state's educational needs are a new funding formula, which incorporates outcomes in lieu of enrollment, a new Performance Funding program, which focuses on quality assurance, and the establishment of institutional mission statements or profiles, which distinguish each institution by degree level, program offerings and student characteristics. (last updated January 2011)

Notwithstanding any provision of law to the contrary, the board of regents, in consultation with the Tennessee Higher Education Commission, shall establish a comprehensive statewide

community college system of coordinated programs and services to be known as the Tennessee community college system.

1. It is the legislative intent that the Tennessee community college system operate as a unified system with individual campuses, teaching centers and teaching sites as necessary to maximize the effectiveness of the system in enhancing student success and increasing the numbers of college degrees held by Tennesseans.

2. In order to carry out the provisions of this subsection (c), the board shall develop a plan to transition from the existing system of thirteen (13) independently managed institutions to a comprehensive statewide community college system managed as a unified system. Such plan shall identify any statutory changes needed to accomplish the transition.

3. As part of its plan, the board shall identify and implement consolidation of services among institutions and standardization of processes between institutions in order to improve efficiency and effectiveness in all functional areas, including, but not limited to, student services, academic support and institutional support.

As part of the overall strategy to implement the Complete College Act, the Tennessee Board of Regents hired Huron Education Group to conduct an analysis on the efficiencies of the system. The study determined the following:

- Identified potentialefficiencies throughout the community colleges through standardization and consolidation of services
- Identified 6 community college performance gaps that must be addressed before system-wide transformation and efficiencies can be fully achieved (only 3 apply to the statewide curriculum management system project)

1	Governance and Accountability	• Leadership must determine if TBR is intended to be a governing body (directional) or leader (actionable) • This governance resolution drives decisions on the appropriate next steps for all identified recommendations as well as their defined "success" • TBR and the colleges must shift to an enterprise-wide versus local perspective to determine appropriate expectations and accountability
2	Technology Use and Integration	• There are many applications/systems used at each institution; however, there is limited and/or non-existent integration across the colleges • The lack of integrated, system-wide technologies and the existence of varied levels of automation have resulted in inconsistent processes • Technology variance across the community colleges limits the ability to capture system-wide efficiencies in many operational functions
3	Strategic Planning and Prioritization	• Numerous improvement initiatives across the non-academic business functions are currently in place or anticipated • Current initiatives have limited oversight and/or forward planning, and many are paused or completed without communication of outcomes • Successful execution of the recommendations requires focused prioritization and phasing to ensure each initiative is executed appropriately
4	Data Integrity, Reporting, and Access	• Although there are implementation efforts in progress, there is no central data warehouse or access to system-wide data • Significant effort and time are required to request data from the colleges, and there is no consistency in datasets across the colleges • There is limited collection and analysis of performance metrics and institutional research is distributed, which leads to data integrity concerns
5	Succession Planning	• Several colleges anticipate retirements in key leadership and executive staff positions in the next five years • Currently, there is very limited to no succession planning in place across the colleges • Documentation of processes and formal knowledge transfer and/or training activities must be instituted to avoid system "brain drain"
6	Communication and Change Management	• Prior centrally-led initiatives have not been transparent and many initiatives have remained unfinished without communication as to why • There are noted TBR silos within and across business functions which impact communications to and operations at the individual colleges • The resulting lack of trust in the system has significant potential to inhibit future successes and college stakeholder buy-in

3. What is a Curriculum Management System (CMS)?

The Curriculum Management System (CMS) is a single, cohesive on-line software that allows courses and programs to be proposed, created, assessed, revised, approved and implemented, or terminated. It is virtually paperless and can facilitate communication between the institutions, TBR, and THEC. Currently, TBR has over 80,000 courses in its course inventory. The process of facilitating changes in the course inventory is significantly expedited through a online, automated tool.

4. Business Process Modeling

Over the last few years, Dr. Kenyatta Lovett has lead a project to create synergies in the community college system through automation and digital workflows. TBR and the Community Colleges are currently implementing a business process modeling (BPM) initiative to create efficiencies throughout the system. Focusing on Admissions and Financial Aid departments, automation has added value and standardized processes throughout the TBR system. The BPM project model aligns with this project, because goal of the BPM process is to convert manual processes into digital workflows If one looks at curriculum management as a standard business process, we can begin to develop key performance indicators (KPI) to measure its effectiveness and calculate the return on investment.

5. Business Case for Going Paperless

The private industry began the process of business process modeling, or digitizing their workplace years ago. Industries such as accounts payable, payroll, purchasing and banking have all digitized to realize a significant improvement of business productivity through workplace automation. Paper-based processes are slowing organizations down, and businesses that can effectively manage the analog to digital transformation will be more successful in today's changing marketplace[2]. By switching from a manual approval process to an automated paperless workflow, organizations may easily reduce the total time it takes to process an invoice by 60 to 70 percent, thus allowing them to concentrate investments on their core business initiatives[3].

What is our Curriculum Management current process?

- Our current curriculum management process is paper-based
- Curriculum adds, changes, and deletions are routed manually through each institution for the appropriate approvals
- The institution sends the approved curriculum documents to TBR and THEC for approval
- Once the adds, changes, or deletions are approved, communication is returned to the originating institution
- The institution updates its academic catalog

Gaps in our current process

- Average hours to complete the paper-based curriculum change are high
- There is little to no visibility to curriculum inventory at other institutions
- TBR has very low visibility to curriculum changes at the institutional level
- A paper-based process is error prone, loss of documents
- There is not standardize naming or filing process , which increases the time it takes to retrieve previously approved documents
- Low visibility to the stages of approval
- Institutions have to manually update their academic catalog once curriculum is approved
- Institutions curriculum libraries include orphaned programs and courses

To gain a better understanding of a typical curriculum management request, its intricacies, and potential points of failure, an example workflow from Pellissippi State is outlined below:

Curriculum Workflow Proposal – 3/20/2014
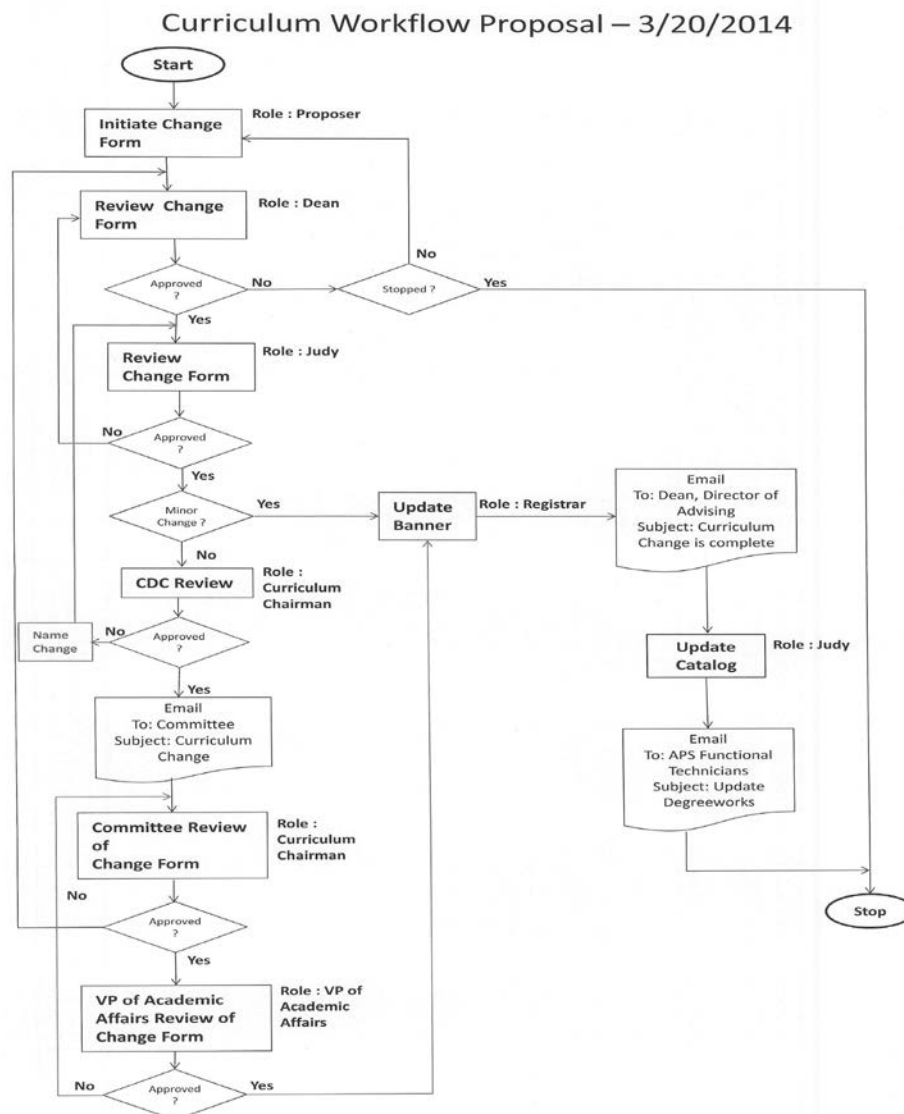
Potential savings realized by going paperless

If implemented correctly, the entire TBR system can identify potential savings through the reduction of labor costs for each curriculum addition, change, or deletion. As the system office moves forward with the curriculum alignment initiative, there will be a significant increase in the number of program and course changes.

Below is an outline depicting how a decrease in labor hours to process curriculum addition, changes, and deletions can provide financial benefits to the TBR system.

Average time to complete one curriculum add, change, or deletion (in hours)

Chart #1	Adds	Changes	Deletions
Institutions	25	10	10
TBR	10	0	0
THEC	1	0	0
Total	**36**	**11**	**11**

*Average time of completion includes correcting errors, researching curriculum at other institutions, and the approval workflow. Estimates are based off conversations with Pellissippi State and Southwest TN Community College.

Hours converted into labor dollars per curriculum request (# of hours from Chart #1)

Chart #2	Adds	Changes	Deletions
Institutions	$625	$250	$250
TBR	$250	$0	$0
THEC	$25	$0	$0
Total	**$900**	**$250**	**$250**

*Labors hours are calculated at $25/hr

Though it is difficult to estimate the number of labor hours saved through automation, some industries experience a savings range from 25% to 80%. For the purpose of this project, a 33% reduction in the labors hours per curriculum request is estimated.

Reduction in labor hours by 33% (# of hours reduced from chart #1)

	Adds	Changes	Deletions
Institutions	16.75	6.7	6.7
TBR	6.7	2	2
THEC	1	1	1
Total	24.4	9.7	9.7

*Hours for TBR and THEC reflect the proposed process for curriculum approvals

*Average time of completion includes correcting errors, researching curriculum at other institutions, and the approval workflow. Hours included a reduction of 33%. Estimates are based off conversations with Pellissippi State and Southwest TN Community College

Hours converted into labor dollars per curriculum request (# of hours reduced from chart #1)

	Adds	Changes	Deletions
Institutions	$418.75	$167.25	$167.25
TBR	$167.5	$50	$50
THEC	$25	$25	$25
Total	**$611.25**	**$242.25**	**$242.25**

*Labors hours are calculated at $25/hr

Potential cost savings realized per curriculum request

	Adds	Changes	Deletions
Old model	$900	$250.00	$250.00
Proposed model	$611.25	$242.25	$242.25
Cost Savings	$288.75	$7.75	$7.75

6. Why the need for a CMS?

1. Accreditors are requesting more proof and more rigor around standards. This means schools have to track and report on more information in more detail and at more frequent intervals than before[4].
2. Curriculum committees are held to a higher standard than ever before. This means the right tools are needed to adjustcurriculum on a more frequent basis as the needs of society change[4].
 3. Schools now need to demonstrate a process of continuous improvement. Curricula need to be updated on a regular, ongoing basis instead of reviewed and modified once every few months or years[4].
4. Accreditors are pushing for standardized, comparable data. Initiatives such as the AAMC's Curriculum Inventory and Reports (CIR) project are now in place to facilitate a more frequent transfer of highly detailed curriculum information that can be compared between schools[4].

Needs Analysis

A needs analysis shows that the curriculum management system project addresses 6 distinctive needs

1. Document Management
   - Curriculum documents and information are currently siloed
   - No central storage for approved curriculum library
2. Submission tracking and low transparency
3. Curriculum library management
   - There are currently over 66,000 courses throughout the TBR system
   - There is current curriculum alignment project that will reduce this number by 2/3
4. TBR has low visibility to course or program changes and deletions
5. Automate update to academic catalogs
6. Project will aid in the facilitation of the common curriculum alignment project

Filling the Gaps – Benefits of a Curriculum Management System

- Create a centralized library of approved curriculum
- Central curriculum library that is accessible and searchable by each institution
- Identify gaps and redundancies in your curriculum
- Provide all stakeholders a view of the curriculum and its process
- Reduce time spent entering curriculum inventory data
- Decrease the amount of labor hours to approve curriculum adds, changes, and deletions
- TBR now approves all course or program changes and deletions
- Integrates with existing SIS (Banner) and academic catalogs (Acalog)

7. RFP Project

- TBR has released a "Request for Proposal" (RFP) to over 15 companies that specialize in curriculum management software
- The award date is in December of 2015
- Dr. Nichols sent an email to all universities and community colleges to provide details of the project and RFP
- Project includes only universities and community colleges
- Implementation of new system will start in March of 2016
- Project is scheduled for completion by December 2016
- Solution is determined by the winning vendor

8. Conclusion

To conclude, the statewide curriculum management system project provides benefits to the TBR home office and each institution in the system. The initiative automates a paper-based process that is full of inefficiencies. Looking at the gap analysis and needs analysis, the benefits of completing the project provide reals savings the lessons the pay-back-period of the initial investment for the procurement of the software tool and implementation. The project also helps move the TBR system discover efficiencies detailed in the Complete College Act of 2010 and the Huron study.

9. Appendix

References

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