Information Technology Research And Planning Monograph Series

Using Business Process Management to Improve School Operations

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The past few decades have seen the rise of newly-honed processes to improve business operations by enhancing efficiencies, increasing productivity, driving down costs or some combination of all three. This work has grown out of two disparate areas: the first, from Deming's work in Japan after World War II to rebuild the manufacturing base of the country; and the second, from America's space program, which required mobilizing and tracking highly technical processes within a very short timeline to send a man to the moon.

Those efforts have produced project management, quality circles, lean manufacturing, ISO9000 and more. And while many people have heard of them, few understand completely what they are, what their impact is or how they are applied in practice. Yet, many people in the public sector are now coming face-to-face with some of these ideas in the workplace. (1)

So, let's take a look at how a few of these practices could be applied in schools. We'll start by building a sample textbook adoption project inside of project management software.

PROJECT MANAGEMENT

THE OLD MODEL

Usually, but not always, a school district has a textbook adoption cycle that follows a calendar describing when certain subjects are up for new textbooks. Let's assume that it's time for your district to replace English/Language Arts textbooks, grades K-12. The process usually begins with the formation of a textbook committee, including teacher representatives from all grade bands, a building administrator or two and the central office administrator charged with supervising curriculum.

At the first meeting, the committee typically discusses the shortcomings of the old textbooks in light of new standards, changes in the field, etc. They then consider what the new textbook should look like and include. There is usually some discussion about online tools and how the district wants to integrate those tools within the framework of their larger technology infrastructure.

Either by visiting trade shows or by contacting publishers outright, sample textbooks are obtained and, following the committee's schedule, teams of teachers and administrators review the books and make recommendations. While this part of the process varies, districts generally arrive at two or three series they prefer. They invite the representative to a meeting, where the rep presents what they think are the most salient features of the text series. Once again the textbook committee votes on the preferred series and that recommendation goes to the board of education for adoption.

THE NEW MODEL

On the surface, the "current" and "new" models don't appear much different, but let's look a little deeper. In the "new" model, a district textbook committee is formed, containing the same constituent members as in the old. Right away, however, things begin to differ.

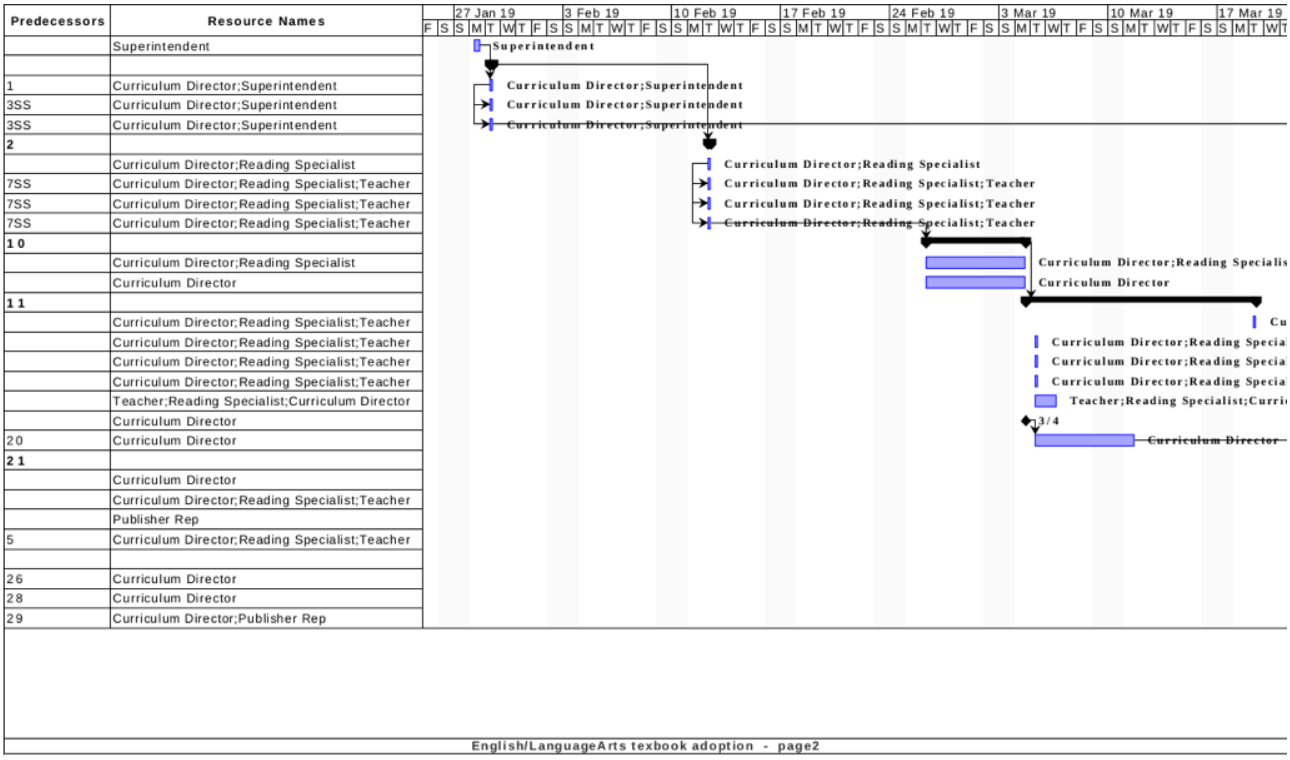
The first task of the new committee is to develop a project plan. The project plan contains the specific elements required of various members of the committee and stipulates what each task is and when it must be done. In our textbook adoption example, the project plan ensures that all necessary steps are identified, assigned start/end dates and allocated to individuals for completion. Furthermore, if there are relationships in the process that are dependent upon each other, they are identified at the outset and attended to along the way.

Perhaps most importantly and before anyone looks at any materials, **the project plan begins by identifying the problem(s) the committee is charged with solving**. In this case, it isn't to purchase a new English/Language Arts textbook series per se; rather, it is to purchase educational materials to address a specific set of clearly defined English/Language Arts problems the district is experiencing and to do it in a manner that is consistent with the pedagogical beliefs of the district. Here is our partial sample project plan truncated for space in this monograph.

(IMAGE 1)

		Name	Duration	Start	Finish
1		Texbook Committee (TC) is formed	1 day?	1/28/19 8:00 AM	1/28/19 5:00 PM
2		**TC Organizational Meeting is held**	**0.5 days?**	**1/29/19 8:00 AM**	**1/29/19 1:00 PM**
3		purpose of the TC is established	0.5 days?	1/29/19 8:00 AM	1/29/19 1:00 PM
4		tasks and timeline are developed	0.5 days?	1/29/19 8:00 AM	1/29/19 1:00 PM
5		milestones and deliverables are set	0.5 days?	1/29/19 8:00 AM	1/29/19 1:00 PM
6		**TC Requirements Meeting is held**	**0.5 days?**	**2/12/19 8:00 AM**	**2/12/19 1:00 PM**
7		a review of the current "state-of-the-art" of best instructional practices is presented	0.5 days?	2/12/19 8:00 AM	2/12/19 1:00 PM
8		shortcomings of current text are identified	0.5 days	2/12/19 8:00 AM	2/12/19 1:00 PM
9		requirements of new text are brainstormed	0.5 days	2/12/19 8:00 AM	2/12/19 1:00 PM
10		requirements are prioritized into, "must have", "like to have"	0.5 days	2/12/19 8:00 AM	2/12/19 1:00 PM
11		**TC Committee research**	**5 days**	**2/26/19 8:00 AM**	**3/4/19 5:00 PM**
12		identify and obtain copies of materials used in targeted districts	5 days	2/26/19 8:00 AM	3/4/19 5:00 PM
13		contact English/Language Arts publishers for sample materials	5 days	2/26/19 8:00 AM	3/4/19 5:00 PM
14		**Materials Review**	**10.5 days**	**3/4/19 5:00 PM**	**3/19/19 1:00 PM**
15		committee creates a uniform assessment rubric	0.5 days	3/19/19 8:00 AM	3/19/19 1:00 PM
16		create a uniform scoring matrix to capture assessment data	0.5 days	3/5/19 8:00 AM	3/5/19 1:00 PM
17		establish assessment norms	0.5 days	3/5/19 8:00 AM	3/5/19 1:00 PM
18		begin assessment	0.5 days	3/5/19 8:00 AM	3/5/19 1:00 PM
19		begin scoring	2 days	3/5/19 8:00 AM	3/6/19 5:00 PM
20		determine "Top Two" series for on-site evaluation	0 days	3/4/19 5:00 PM	3/4/19 5:00 PM
21		research who else is using the "Top Two" and examine the results they are getting	5 days	3/5/19 8:00 AM	3/11/19 5:00 PM
22		**On-site Evaluation**	**1 day?**	**3/25/19 5:00 PM**	**3/26/19 5:00 PM**
23		assuming research on "other" site use is positive; Invite representatives of "Top Two" finalists to present to TC Committee	0 days	3/25/19 5:00 PM	3/25/19 5:00 PM
24		create a uniform scoring matrix to capture presentation data	0.333 da...	3/26/19 8:00 AM	3/26/19 10:40 AM
25		"Top Two" finalists present	1 day	3/26/19 8:00 AM	3/26/19 5:00 PM
26		score presentations and select preferred product	0.15 days	3/26/19 8:00 AM	3/26/19 9:12 AM
27		**Board of Education**	**15.15 d...**	**3/26/19 9:12 AM**	**4/16/19 10:24 ...**
28		obtain a: price quote, implementation timeline, professional development schedule, etc.	5 days	3/26/19 9:12 AM	4/2/19 9:12 AM
29		schedule a presentation by Committee rep and product rep to the board of education	0.15 days	4/2/19 9:12 AM	4/2/19 10:24 AM
30		present to the boad of education for approval	0 days	4/16/19 10:24 AM	4/16/19 10:24 AM

(IMAGE 2)



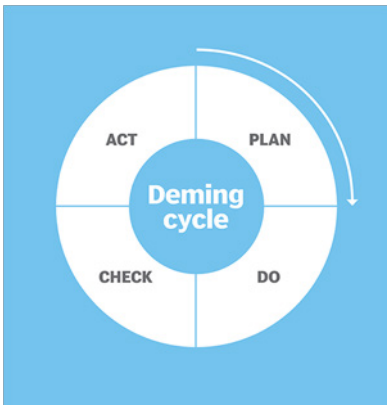
Predecessors	Resource Names
	Superintendent
1	Curriculum Director;Superintendent
3SS	Curriculum Director;Superintendent
3SS	Curriculum Director;Superintendent
2	
	Curriculum Director;Reading Specialist
7SS	Curriculum Director;Reading Specialist;Teacher
7SS	Curriculum Director;Reading Specialist;Teacher
7SS	Curriculum Director;Reading Specialist;Teacher
10	
	Curriculum Director;Reading Specialist
	Curriculum Director
11	
	Curriculum Director;Reading Specialist;Teacher
	Curriculum Director;Reading Specialist;Teacher
	Curriculum Director;Reading Specialist;Teacher
	Curriculum Director;Reading Specialist;Teacher
	Teacher;Reading Specialist;Curriculum Director
	Curriculum Director
20	Curriculum Director
21	
	Curriculum Director
	Curriculum Director;Reading Specialist;Teacher
	Publisher Rep
5	Curriculum Director;Reading Specialist;Teacher
26	Curriculum Director
28	Curriculum Director
29	Curriculum Director;Publisher Rep

* Project plan created in OpenProject
https://www.openproject.org/

Image 1 is a Task Sheet. It displays every task that needs to be done, when that task begins and ends, if that task is dependent on another and who's responsible for the completion of the task. **Image 2** is the first page of the corresponding GANTT Chart. It presents the same information in graphical format. The GANTT for this sample project actually extends across a third page not included here.

There are several important benefits to using a business management process like this. First, in creating the Task Sheet, planners must think discreetly about and document all of the steps necessary to be successful. This includes not only what needs to be done and by whom, but also when things must start and end. And since the work is captured in project planning software, as things change in the schedule, the software automatically recalculates dates. Within the software, reports can be compiled by resource or by date. If there is slippage in the project, that report can be run, too. Once the project is completed, it can be used again in the future and repeated year after year following the Deming Cycle of plan, do, check and act. (See **Image 3**)

(IMAGE 3)



This methodology can be used for most any type of project. For instance, if your district enrollment declines and you consider closing a building, or if your enrollment increases and you need to add a building. Using Project Management, you are able to break the project down into discreet measurable and monitorable steps.

BUSINESS PROCESS MAPPING (WORK FLOW)

One reality of public school funding is the difficulty of adjusting to unexpected budget problems as they occur. Unlike their counterparts in the private sector, district budgets are, by their very nature, inflexible. Districts face unfunded mandates, changes in real estate valuations, legislative claw-backs, etc. As public entities, districts cannot issue stock to raise funds, nor can they easily make cuts in labor costs because of collective bargaining agreements. The budget pie is the budget pie. This means that every time the size of any slice is increased, it almost always comes at the expense of another slice, somewhere else. As a result, one of the few things a district can do to create some budget relief is carefully trim a slice or remove it all together.

One of the easier ways to trim a slice is to look at business processes in the district that require significant labor and see if the process can be streamlined. If it can, then it may be possible to reduce labor costs or assign additional work (unfunded mandates) to current staff. The best way to examine this is by mapping the business process or work flow.

In a previous monograph, we used substitute teacher processing as an example. With the advent of software like Aesop,™ many districts have been able to streamline their substitute teacher fulfillment. While this is worthwhile, it usually results in only a small labor cost reduction.

Depending on the size of your district, there are other areas where large numbers of staff are involved and where one might find possible savings. For instance, student registration is an area that requires a larger number of people. Some districts register students at each building; others do so through a centralized process.

Districts should map their process from the time a parent contacts the district until the time the student is enrolled. The application work flow should include every contact, every stop, every wait-state the application has and every interaction with the parent.

Once the process has been mapped, a central meeting should be held during which members involved in the process can review it and make suggestions for improvement. From these suggestions, an alternative model can be created that extracts critical elements from the current process.

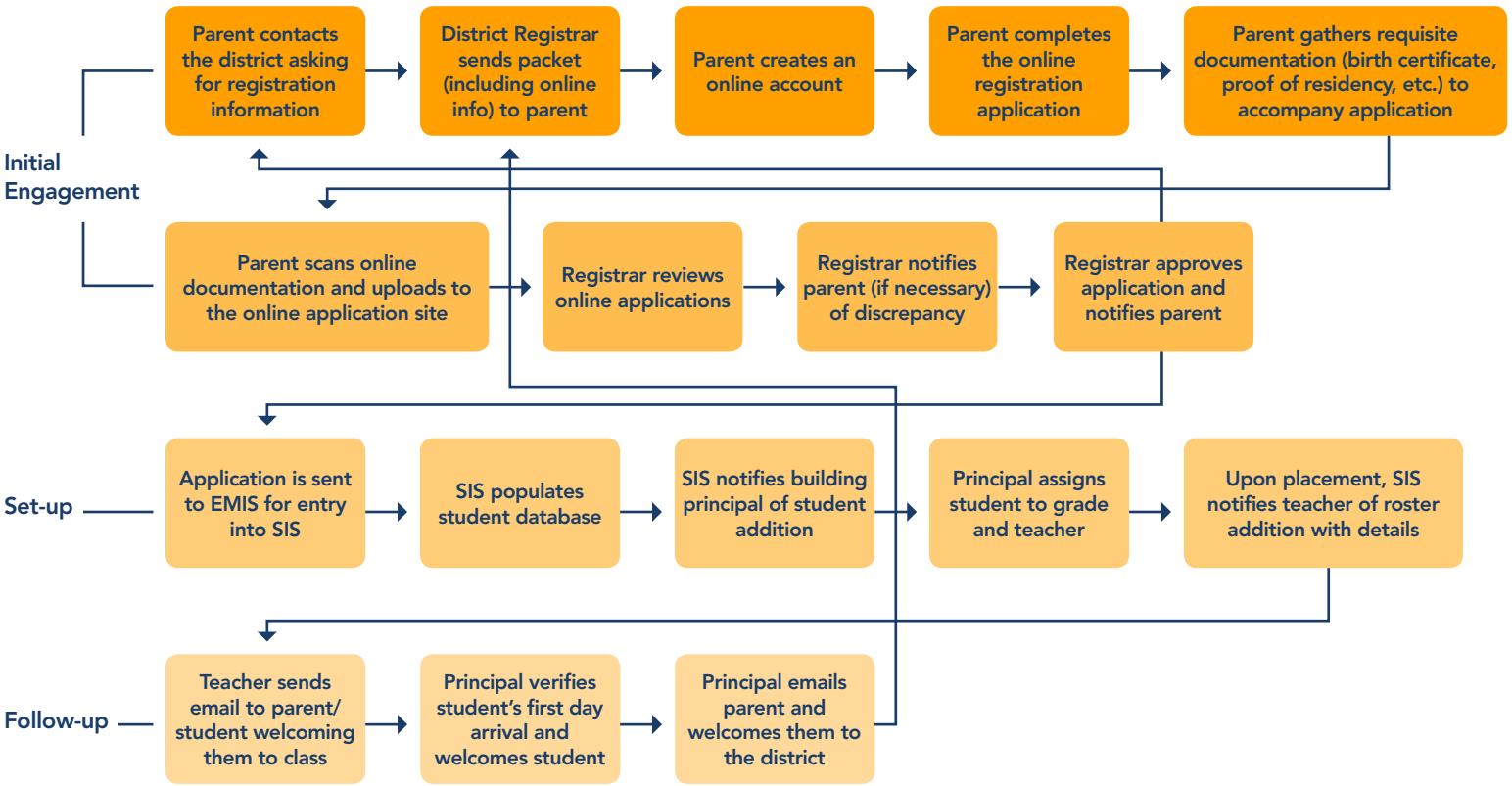
Districts should ask: What do we need? How do we need it—in what form? When do we need it? Who needs to see documentation? Who needs to approve it?

Once you've mapped the old process and designed a new one, you should find an application that enables you to clone the process within the software. This is critical. The software should accommodate the process designed by the district. The district shouldn't change its process to accommodate the software.

Loading your process into the software enables you to embed business intelligence. This tells the software where the application goes for approval along with accompanying documentation like birth certificates and proof of residency. Effective forms management software has this business intelligence capability built-in.

(IMAGE 4)

New Student Registration
Sample Process



In **Image 4**, centralized processing is carried out by a registrar. This model eliminates the duplication of work that often occurs when processing is decentralized at each building. For this example, a prior process was mapped, the critical steps were extracted and loaded into mapping software. We used an online mapping application, Lucidchart. *https://www.lucidchart.com/*

Because this example does not show a prior process map, it does not show duplications or "wait states"—i.e. how long does a process "sit" waiting to be dealt with. As a result, we can't see the improvements from the old model in comparison to this one. Additionally, this model does not show a step for self-evaluation. It should be assumed that this process would be reviewed on a regular basis to further streamline it. For instance, it may be possible to do away with the registrar altogether and simply use the software's business intelligence to handle onboarding.

RESOURCES

Project management and business process mapping are just two techniques for improving an organization's performance—there are many others. In Japan, the Kaizen movement focuses on continuous improvement. SixSigma was developed and institutionalized by Motorola in the 1980s. Around the same time, the Baldridge Excellence Framework was created to improve the performance in public institutions. What all of these methodologies share is a structured approach to improving institutional performance. They can be adopted and used in schools to improve efficiencies and reduce costs.

For more information about these various methodologies, please take a look at the following resources. If you or your district would like assistance implementing either project management or SixSigma, please contact NEOnet. There is knowledgeable and skilled staff available to help.

PROJECT MANAGEMENT

The Project Management Institute
The Project Management Institute is a global nonprofit professional organization for project management
https://www.pmi.org/

The Project Management Website
https://www.projectmanagement.com/

OpenProject
Free and Open Source (FOSS) project management software
https://www.openproject.org/

SIXSIGMA

ISIXSIGMA
One of the primary SixSigma standards and certification groups
https://www.isixsigma.com/

6Sigma
A for-profit company at the forefront of SixSigma training and certification
https://www.6sigma.us/whyus.php

KENT STATE UNIVERSITY

Lean SixSigma Training and Certification Programs
https://www.kent.edu/yourtrainingpartner/lean-six-sigma-training-and-certification-programs

ENDNOTES:

(1) *https://www.researchgate.net/publication/317167275_Business_process_management_in_the_public_sector_explored_and_future_resarch_fields*

NEOnet
700 Graham Rd.
Cuyahoga Falls, OH 44221