

Case Study:
Burlington School District (USD 244)

Manual Requisition Process

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Burlington School District is located in the city of Burlington, Kansas. Burlington is the County Seat of Coffey County. It is located on Highway 75 on the banks of the Neosho River near the John Redmond Reservoir. The population of Burlington and Coffey County are 2,735 and 9,370 people, respectively. Coffey County is the home of the Wolf Creek nuclear power plant.

USD 244 has an enrollment of 982 students. Leading the district, Dr. Dale V. Rawson is Superintendent. Each of the three schools in the district has a Principal, who reports to Dr. Rawson. With 346 students, Burlington Elementary School (BES), represents 35% of USD 244's student population. It is located at 706 Niagara Street and offers grade levels K - 5. With 257 students, Burlington Middle School (BMS), has 26% of the students in the district. It is located on Cross Street, next to the high school and handle grades 6 - 8. With 351 students, Burlington High School (BHS), has 36% of the students in the district. It is located at 830 Cross Street and handles grades 9-12. The remaining 3% of the students enrolled in the district include five Pre-K students and 23 students at their Drop Out Academy.

USD 244 has 96 certified teachers and is a very progressive school district. The elementary school was selected as one of America's top 100 technology schools in the year 2000. The middle school has a 15:1 teacher/student ratio, with a 1:2 ratio of students to computers. Attendance has averaged 95% over each of the past nine years. The high school is scoring considerably above state & national levels on the ACT test. Reading scores are consistently above state levels, while math scores have exceeded state averages in three of the past five years.

Description of Manual Requisition Process in Use:

Background: On February 1st, 2001, USD 244 cutover to DataTeam's fund accounting system. DataTeam's software is utilized by nearly two-thirds of the 304 established school districts existing in the State of Kansas.

The district had previously been using SKYWARD SASI's accounting system and electronic requisition capabilities. On February 1st, they also began processing requisitions manually. USD 244's reasons for cutting over to DataTeam's fund accounting system, were as follows:

- (1) More responsive to State of Kansas educational & legislative requirements. DataTeam maintains a close working relationship with the State and incorporates required system changes promptly.
- (2) Easier to operate & requires less technical expertise.
- (3) Better report writing capabilities.

Once the cut over to DataTeam’s fund accounting system is complete, plans are to replace the manual requisition process described in this document with DataTeam System’s paperless alternative.

Requisition Procurement Groups: The main sources that originate requisitions at USD 244 and their estimated volumes and seasonality is shown below:

<u>Source</u>	<u>% of Total Activity</u>	<u>Seasonally</u>
BHS, BMS, BES (1)	Large	10 months
Maintenance Director (2)	Medium	12 months
Transportation (3)	Medium	12 months
Technology Department (2)	Medium	12 months
Food Services(2)	Medium	10 months
Curriculum Department (2)	Medium	12 months
Twenty First Century (4)	Minimal	12 months
Central Office (5)	Minimal	12 months

NOTES:

- 1) Of the three schools, BHS is the largest source of requisition activity, followed by BMS, then BES.
- 2) Requisitions originated by these are allocated back to each school’s own budget. Technology’s requisitions are mainly capital outlays versus supplies and cover such hardware items as computers and printers. Curriculum coordinates all textbook purchases for USD 244.
- 3) USD 244’s transportation fleet includes busses, vans, cars, and pick-ups.
- 4) Twenty- First Century offers after school activities for BES and BMS.
- 5) Excluding the Central Office, every Purchase Order requires a requisition. Central Office occasionally bypasses the requisition process because of minimal volumes.

Annual Volumes – Requisitions & Purchase Orders: USD 244 handles over 3,000 purchase orders (PO) per year. The Procurement Clerk at Central Office coordinates each of these PO’s for the district. Over 98% of these PO’s (+2,900) are supported by a requisition. Only purchase orders originated by Central Office are allowed to bypass requisition requirements.

Budgeting Process for Requisitions: USD 244 initiates their budget cycle for requisitions on February 1st of each year. Each Budget Manager duplicates and distributes Request for Budget Authority forms to teachers and all others procuring supplies and materials. The Principal at each of the schools functions as the Budget Manager, while Departmental Directors function in this role for the other areas, including Maintenance, Transportation, Technology and Curriculum.

Budget Authority Request forms are to be completed and returned to the Budget Manager by mid-February at a summary level. Requisition budget details provided are minimal.

Budget Managers aggregate requests and review budgeted expenditures submitted. If amounts requested are approved as submitted, the budget is authorized and sent on to the Superintendent for further review and approval. The Superintendent completes the district budget by April 1st and enters budgeted expenditures into an

Excel spreadsheet. Budget data is entered into Excel at a high level, with input usually limited to about 2,000 line items, involving approximately 200 separate fund accounts. The budget numbers entered into Excel indicate the source of the requisition designate the expense category involved, e.g., science, math, etc.

Subsequent to approval by the Superintendent, the Requests for Budget Authority forms are copied, filed and returned to the Budget Managers for review and further handling by the person responsible to procure the materials. Routines vary at each school, but normally the Budget Manager's procurement clerk provides copies of approved requisition budgets to teachers once the forms are approved and returned from the Superintendent's office.

Budgeted amounts approved by the Superintendent are typically the same as the amounts requested and submitted by the Budget Managers. Adjustments to budget requests for materials are unusual as long as the amounts requested do not exceed prior year expenditures. Increasing the supply budget over the prior year can be justified, however, by changes in projected enrollments and/or other significant events occur.

Actual expenditures for the prior year are closed out by June 30th. In August, the Superintendent submits the finalized budget to the Board of Education for review and approval.

Requisition Item Types: USD 244 has the following two types of requisitions:

- 1) Supplies
- 2) Capital Outlays (price bids typically involved)

Supply Budgets: Each procurement group begins its yearly Request for Budget Authorities by reviewing prior year expenditures. Budgeted spending levels for supply requisitions are based on the prior year. Year over year increases for supply budgets are discouraged. If budget overruns do occur, the Budget Manager will attempt to re-allocate necessary adjustments back amongst the teachers to keep overall spending for the procurement group below last year's levels. One justification for budgeting year over year increases, are increased student enrollments.

Supply requisitions include markers, forms, binders, office supplies, tape, art supplies, science supplies & equipment and other classroom supplies. Textbooks, which are ordered by the Curriculum Director, are budgeted as supplies and amounts spent are allocated back to the classroom. Utilities are also handled with supply requisitions.

Capital Outlays: Budgets for capital outlays are zero based and have to be justified individually, regardless of the amount spent last year. Each capital dollar budgeted has to be justifiable on its own merit. Examples of capital outlays include furniture, technology equipment and other classroom equipment. When capital items are

actually ordered, pictures of items are required and bids are obtained from multiple vendors if possible.

Manual Handling Routines – Requisitions & Purchase Orders:

Once budgeted amounts are authorized, teachers can normally initiate requisition of the materials. Exceptions to this practice depend on those routines in place by the Budget Manager because handling varies considerably by school.

Manual routines in place for USD 244’s requisition and purchase orders are noted below along with document flows, responsibilities and estimated times to complete each step. Time requirements estimated for each step were obtained from and reviewed with school personnel. Times utilized for each step incorporate the inefficiency and extra work caused by transposition errors, illegibility of hand written requisitions, double handling and extensive follow up required by the manual requisition process.

- STEP 1)** Requisition Form 625/N-3/ (see example attached) is manually completed to order supplies. The form is hand written. Items being requisitioned must be located in a catalogue and the following information is to be noted on Form 625/N-3/:
- a) Item number
 - b) Year of the catalogue (if available)
 - c) Name & address of vendor
 - d) Page number of the item being ordered
 - e) Pictures are requested for capital outlays (if available)

Manual Times Required to Complete STEP 1

School personnel estimate that an average of 15 minutes is required to complete STEP 1.

Expected Benefits of Paperless Requisitions

Projected timesaving per item is 5 minutes. STEP 1 to initiate the requisition will not be greatly impacted by implementing a paperless requisition process. Procurement group members will key items into the system to create the requisition versus hand writing the information on the form.

- STEP 2)** Manual routing of Form 625/N-3/ varies, as noted below:
- BES:** Hand-written Form 625/N-3/ is sent to the procurement clerk (school secretary). Her role is to:
- a) Assigns budgeted Fund Accounting data
 - b) Retypes Form 625/N-3/ for the Budget Manager
 - c) Staples hand written and typed Forms 625/N-3/
 - d) Forwards Form 625/N-3 to Budget Manager for review and approval.
- BMS/ BHS:** Form 625/N-3/ is forwarded to the procurement clerk (school secretary), who:
- a) Coordinates requisitions for the Budget Manager
 - b) Assigns budgeted Fund Accounting data.
 - c) Forwards hand-written Form 625/N-3 to Budget Manager for review and approval.

Note: When SKYWARD SASI's electronic requisition system was used, BMS & BHS teachers entered requisitions directly into the system. The school secretary at BES entered electronic requisition into SKYWARD SASI.

Manual Times Required to Complete STEP 2

School personnel estimate that 9 minutes is required to complete STEP 2. Average time of 15 minutes required at BES and 7 minutes at BMS & BHS were adjusted for PO volumes.

Expected Benefits of Paperless Requisitions

Timesaving of about 8 minutes per requisition is projected. A paperless requisition process will essentially eliminate STEP 2. The role of procurement clerks will be primarily oversight and verification of fund accounting because routing & determination of status will be handled electronically.

- STEP 3)** Budget Managers:
- a) Review requests
 - b) Verify budgeted Fund Accounting
 - c) Approve or decline requisition requests
 - d) Return Forms 625/N-3/ to school secretary.

Manual Times Required to Complete STEP 3

School personnel estimate that 5 minutes is required to complete STEP 3.

Expected Benefits of Paperless Requisitions

Timesaving of 4 minutes is projected. STEP 3 of the requisition process will be essentially unchanged by the implementation of DataTeam System's paperless requisition process. However, electronic routing and paperless handling will conservatively cut times required back to about 1 minute per item.

- STEP 4)** Procurement clerks (School Secretaries):
- a) Make those changes requested by Budget Manager
 - a) Route "approved" Forms 625/N-3/ in inter-office envelope to Central Office
 - b) Return "declined" Forms 625/N-3/ back to originators for resolution. (When resolved, declined requisitions are re-processed, using the same handling routines noted)

Manual Times Required to Complete STEP 4

School personnel estimate that 5 minutes is required to complete STEP 4.

Expected Benefits of Paperless Requisitions

Timesaving of 4 minutes is projected. STEP 4 will be virtually eliminated by paperless processing. Procurement clerks will continue to coordinate the process, but elimination of paper will make the process much more efficient.

STEP 5) Procurement Clerk - Central Office:

PO procedures if materials yet to be ordered from vendor

- a) Verifies Form 625/N-3/ signed & approved by Budget Manager
- b) Verifies accuracy of fund accounting used, adding if missing
- c) Fixes fund accounting used on form, if incorrect
- d) Verifies ordering information on form is complete, including:
 - 1) Legible item number is noted on form
 - 2) Name & address of vendor noted
 - 3) Year of the catalogue noted, along with page number
 - 4) If capital outlay, confirms picture of item provided
 - 5) Calls Teacher if further clarification required
- e) If new vendor, enters vendor data into DataTeam system
- f) Enters PO request into DataTeam system
- g) Enters date of requisition for control purposes
- h) Prints 3 copies of Purchase Order
- i) Batches PO's
- j) Forwards batch of PO's processed to Superintendent.

PO procedures if materials already in hand (i.e., picked up by teacher.)

This practice is typically limited to office supply orders of less than \$50, involving consumable supplies like printer & fax cartridges.

- a) Verifies packing slip confirming receipt of material is attached to Form 625/N-3/
- b) Teacher authorizes payment on packing slip
- c) Verifies accuracy of fund accounting used, adding if missing
- d) Fixes fund accounting used on form, if incorrect
- e) If new vendor, enters vendor data into DataTeam system
- k) Enters PO request into DataTeam system
- c) Enters date of requisition for control purposes
- d) Prints three copies of PO
- f) Forwards batch of PO's processed to Superintendent

Manual Times Required to Complete STEP 5

School personnel estimate that 15 minutes is required to complete STEP 5 because of the number of steps required and the double handling involved.

Expected Benefits of Paperless Requisitions

Timesaving of 10 minutes per requisition is projected. STEP 5 will be cut back considerably by paperless processing except for the oversight role the procurement clerk will continue to provide.

- STEP 6) Superintendent:
- a) Reviews PO requests.
 - e) Verifies Fund Accounting used on each PO.
 - f) Approves or declines Purchase Orders.
 - e) Returns PO's to Accounts Payable Clerk

Manual Times Required to Complete STEP 6

School personnel estimated final reviews are accomplished in less than one minute per requisition.

Expected Benefits of Paperless Requisitions

No timesaving projected. Approval of the PO will still be required, but paperless processing and routing will make approvals much more efficient and convenient.

- STEP 7) Procurement Clerk (Central Office):
- Procedures, if materials need to be ordered from vendor.***
- a) Fixes fund accounting problems noted by Superintendent
 - b) Logs approved PO's into Journal
 - c) Voids PO's not approved by Superintendent
 - d) Mails or faxes approved PO to vendor
 - e) Copies & mails approved PO to secretary of each Budget Manager
 - f) Files office copy of PO
 - g) Returns declined PO's to secretary of each Budget Manager

Procedures, if materials already on hand, (i.e., picked up by teacher)

- a) Fixes fund accounting problems noted by Superintendent
- b) Logs PO into Journal
- c) Materials are receipted in DataTeam system
- d) If invoiced, initiates vouchers to pay vendors
- e) Copies & mails approved PO to secretary of each Budget Manager
- f) Staples extra copy of PO to office copy of PO
- g) Files office copy of PO

Manual Times Required to Complete STEP 7

School personnel estimate that STEP 7 requires 10 minutes.

Expected Benefits of Paperless Requisitions

Timesaving of 7 minutes is projected. STEP 7 activities will be considerably more efficient in a paperless environment.

- STEP 8) Procurement Clerk (Central Office)
Payment Procedures once goods received, receipted & invoiced.
- a) Maintains alphabetical “hold” file until materials ordered are received & receipted by originator and invoiced by vendor.
 - b) If invoiced, but lacking receipts traces teacher.
 - c) If receipted, but no invoice, holds for vendor’s bill.
 - h) Once goods invoiced and receipted, initiates voucher request to pay vendors.
 - i) Submits payment request to Board of Education for approval at their monthly meeting.
 - j) Mails checks to vendors once approved.

Manual Times Required to Complete STEP 8

School personnel estimate that STEP 8 requires 20 minutes to complete.

Expected Benefits of Paperless Requisitions

Timesaving of 17 minutes is projected. STEP 8 activities will be streamlined significantly in an electronic environment.

Paperless Handling Routines – Requisitions & Purchase Orders:

DataTeam System’s procurement process is designed to be a paperless requisition that can be routed for approval electronically. Once approved, the requisition can be output for use by purchasing personnel to complete the procurement of items on requisitions. Purchase orders are delivered to appropriate suppliers and vendors of materials and/or services.

Procurement groups are established with a set of members that have common procurement permissions. Individuals with common procurement permissions are established in the same group to facilitate management of the process. Discrete approval trees are defined for specific groups and item types. Item types designate the type of item being requisitioned. Facilitating electronic routing, approval trees determine the routing that will be created when requisitions are generated in the system. Approval trees are built to lead to a processing point in the procurement process. In addition to making the process more efficient, it also facilitates the ability

to determine the interim status requisitions at any point within the process. Electronic requisitions will be handled as follows on the next page:

Ordering Materials:

- a) Log into the system and create a purchase requisition.
- b) Select the appropriate approval tree.
- c) Complete the requisition form for your item.
- d) Create requisition.

Administrator Approvals:

- a) Select Approve Purchase Requisitions from menu.
- b) Approve or reject pending requisitions.
- c) If rejected, type appropriate comments and send an E-note.
- d) Approve selected requisitions to complete process.

Procurement Clerk: Requisitions to review and/or approve:

- a) Log into system as procurement clerk
- b) Select Approve the Clerk's requisition from menu
- c) Approve or reject pending requisitions
- d) If rejected, type appropriate comments and send an E-note
- e) Approve selected requisitions to complete process

Processing approved requisitions:

- a) Log into system as procurement clerk
- b) Select Process Approved Requisitions from menu
- c) Select requisitions to be reviewed &/or edited
- d) Process Selected Requisitions
- e) Note batch number
- f) Continue processing batch
- g) Download PO Data by vendor
- h) Order Materials

Comparison of Manual versus Paperless Handling

**Table 1
Benefit Summary**

<i>Description</i>	<i>Manual Processing Times (minutes)</i>	<i>Paperless Processing Times (minutes)</i>	<i>Projected Efficiencies (minutes)</i>
STEP 1 (Initiate)	15	10	5
STEP 2 (Review/ Route)	9	1	8
STEP 3 (Review/Approve)	5	1	4
STEP 4 (Review/ Route)	5	1	4

STEP 5 (Review)	15	5	10
STEP 6 (Review/ Approve)	1	1	-
STEP 7 (Review/ Order)	10	3	7
STEP 8 (Receipt/Pay)	20	3	17
Total Minutes	80	25	55

Special Handling/ Exceptions of Manual Requisitions:

- 1) When the Requisition Form 625/N-3/ contains multiple line items, the Procurement Clerk at Central Office attaches copy of requisition to the PO and types “see attached” versus entering complete line item detail on the PO. Their rule of thumb is to type detail for each line item if there are fewer than four or five lines. This results in incomplete PO records when each line item is not entered into the system. Additionally, auditors take exception to this practice because of an inadequate audit trail.

Note: Paperless processing should eliminate this problem.

- 2) Maintenance, Transportation and utilities use Open PO’s to minimize clerical efforts required and to be more efficient. As actual expenditures are incurred monthly, partial payments are made against the Open PO. Receipts covering expenditures are provided daily to the Accounts Payable clerk. These receipts are compiled by the 25th of each month and entered into the system as a PO.

Note: Paperless processing should streamline this process considerably.

- 3) Freight costs on materials ordered are handled by increasing the amount of the PO at the time the item is vouchered. When this occurs, line item detail and the PO are out of balance. Prior to vouchering the payment, if the overrun exceeds \$50, authorization must be obtained from the Budget Manager. If shipping & handling expenses are not known when the PO created in the system, an estimate of 15% is used as a proxy.

- 4) Filing requirements are manually intensive. Files of all purchase orders created are maintained alphabetically by vendor. Open files are also maintained of items invoiced but not receipted, receipted but not invoiced, backordered, and partially completed PO’s. Administrative efforts required to resolve vendor inquiries, trace for receipts and fix handling errors caused by transposition errors and double handling are manually intensive and time consuming. Related administrative efforts can substantially increase required processing times shown in Table 1.

Note: Electronic routing, E-notes and paperless processing will automate this process substantially.

Problems - Manual Requisition & Purchase Order Handling:

- 1) Retyping hand-written requisitions increases the likelihood of transposition errors.
- 2) Retyping hand-written requisitions is inefficient and results in double handling.
- 3) Extensive follow up is required by the Accounts Payable Clerk to resolve errors & misunderstandings with originators of requisitions and vendors.
- 4) Receipting for materials is problematic. Teachers do not promptly receipt for materials and this causes double handling by the Accounts Payable Clerk tracing teachers prior to payment. Requires follow up phone calls and sending multiple copies of invoices to teachers. When notices requesting payment are received from vendors, the teacher is emailed to determine whether the materials have been received. The Central Office Procurement Clerk then responds to the vendor and if there is a dispute over receipting, the vendor is asked to provide the signature of the party receiving the goods.
- 5) Backorders also result in double handling by the Accounts Payable clerk, as do partial shipments by vendors. Except for Open PO's, amounts cannot be vouchered until the entire order is complete.
- 6) Receipted materials lacking invoices are another problem requiring extra handling by the Accounts Payable clerk.
- 7) No advance warnings exist for Budget Overruns.

Payment Process:

Pending approval by the Board of Education, PO's are vouchered for payment once the PO materials are received, receipted and invoiced. The Board of Education meets once per month and approves each bill prior to issuance of payment. Accordingly, checks are usually cut one time per month. This can easily add 30 days to the elapsed processing cycle time for requisitions. If payments are necessary in the interim, the Superintendent can request the School Board President to authorize the expenditure.

Comparison: Elapsed Processing Times from Requisition to Payment

Table 2 - Comparison of Manual Requisition process to Paperless Handling. Estimated Processing Times Required

<i>Description *</i>	<i>Manual Processing Average Times (days) Minimum/Maximum</i>	<i>Paperless Processing Times (days) Minimum/Maximum</i>	<i>Expected Time Savings (days)</i>
STEPS 1, 2, 3 & 4	3 to 7	1 to 3	3
STEPS 5 & 6	3 to 7	1 to 3	3
STEPS 7 & 8	3 to 7	3 to 7	-
Vendor	7 to 14	7 to 14	-
Receipting	7 to 14	1 to 3	9
Payment	7 to 30	3 to 20	7

Total Days **	30 to 60	18 to 50	14
Elapsed Time (wks.)	4 to 8	3 to 7	2
Ave. Duration (wks.)	6	4	2

* Refer to discussion of manual process above for description of each step.

** Doesn't foot down, because times required for each step vary.

Study Methodology: Type II, non-engineered estimates was employed to study the manual requisition process in use at the Burlington, Kansas school district. Process flows were detailed and documented, but standards resulting from the study were not proceeded by methods or quality analysis. Rather, an "ask expert" Type II approach was used to estimate times and document data flows by conducting interviews with school personnel. Personnel performing the actual tasks documented process flows and listed the elements (steps) required by the manual requisition process. Although the process is reliable, estimated times determined by this approach are difficult to crosscheck without employing an actual Type I time study. Resultant processing times determined by the study were subsequently reviewed and confirmed by district personnel to verify the accuracy of these results.

Somewhat mitigating study results, school district personnel participating in this study were relatively new to their jobs and had minimal experience levels. As the study progressed, however, it became apparent that this limitation may have actually enhanced study results. Participants tended to over document the process and were committed to ensuring that each step was discussed and captured accurately and in complete detail. A more experienced person would have been more likely to overlook documentation of steps and processes they deemed unimportant.