

SMART LOCKERS & SMART BOXES
THE TOTAL SOLUTION TO CONTACTLESS DELIVERY
FOR MAIL AND MORE

Presenter: Don L McCarty / 7 Apr, 2021



EAST TENNESSEE STATE
UNIVERSITY



KEY TOPICS

- [Major Issues of Mail Delivery](#)
- [Student Smart Lockers – Packages](#)
- [Department Smart Boxes - Letters, Flats & Packages](#)
- [Department Lockers – economical alternative or supplement](#)
- [New Student Smart Mail Boxes – Packages, Letters & Flats](#)
- [New Student Smart Mail Boxes – Advantages vs Traditional PO Boxes](#)
- [New Student Smart Mail Boxes – Advantages vs High Density Folders](#)
- [Mobile App – Smart Mail Pick-up](#)
- [Important Things to Consider](#)
- [How to Get Started](#)
- Questions & Answers and Points of Contact



WHO HAS THESE MAIL PROBLEMS?

- Too many Parcels
- Not enough space to process or store parcels
- Not enough staff
- Not enough time
- Not enough money to get the right equipment
- Leadership doesn't understand or care about Mail (until something goes wrong)
- Leadership is considering reducing your space or outsourcing your operation
- Mail Handling Safety Concerns (**Too much touching & Customer Interaction**)



DELIVERY ISSUES FACING MAIL CENTER

Parcel Delivery

- Parcel Volume going up \ Space at a Premium
- Package Tracking System is not the solution (Need to minimize touching)
- Smart Lockers **not If** but Who, When & Where
 - At least 8 companies in the market (some are resellers)

Letter Mail Delivery Options (Space vs Access)

- Traditional PO boxes (24/7 access but needs space)
- Folder Options (saves space but limited hours & more Touching than needed)
- Smart Mailboxes (Provides 24/7 & reduces space, & reduces touching 80-90%)



ETSU ORIGINAL SMART LOCKERS

- Measure the volume of packages by size to determine the correct doors sizes & number needed.
- 32% picked up after hours, Average Time in lockers 5.5 hours
- 96% picked up in 24 hours.
- 364 deliveries through 140 doors in a 24 hour period
- Multiple packages in same door, system displays if packages in other lockers
- NO NEED FOR PACKAGE TRACKING SYSTEM



System
was Good
but needed
Better!



NEW LOCKER BANK # 1 – 74 DOORS

Number of Doors:

- **Small - 34**
- **Medium – 19**
- **Large – 21**
- 1 computer screen with barcode reader & swiper
- **Doors opened by ID Card, Touchscreen or Mobile App**

Dimensions: (internal door opening)

- Small – 4 by 16.25
- Med – 9.75 by 16.25
- Large 14.5 by 16.25
 - Actual doors are .5” taller and 3” wider
- Bottom of highest door at 60”

Depth - 19 inches on all sizes,

- Depth of 23” would be better

1 cabinet of 12 or 20 doors is 44” wide by 76” High

Individual Unit



EAST TENNESSEE STATE
UNIVERSITY

NEW LOCKER BANK # 2 – 58 DOORS

Number of Doors:

- Small - 22,
- Med - 11,
- Large - 21, XL - 4

Dimensions:

- Same as Bank 1 except the 4 XL doors are 16.5 wide by 35" tall

Depth:

- 19 inches on all sizes,

Covid-19 Advantages:

- Smooth Metal surfaces easy to clean
- No handles or numbers on doors – quick to clean
- 1 computer screen with barcode reader & swiper – cleaned before & after loading and throughout the day



OLD LOCKER BANK # 3 – 48 DOORS

Number of Doors:

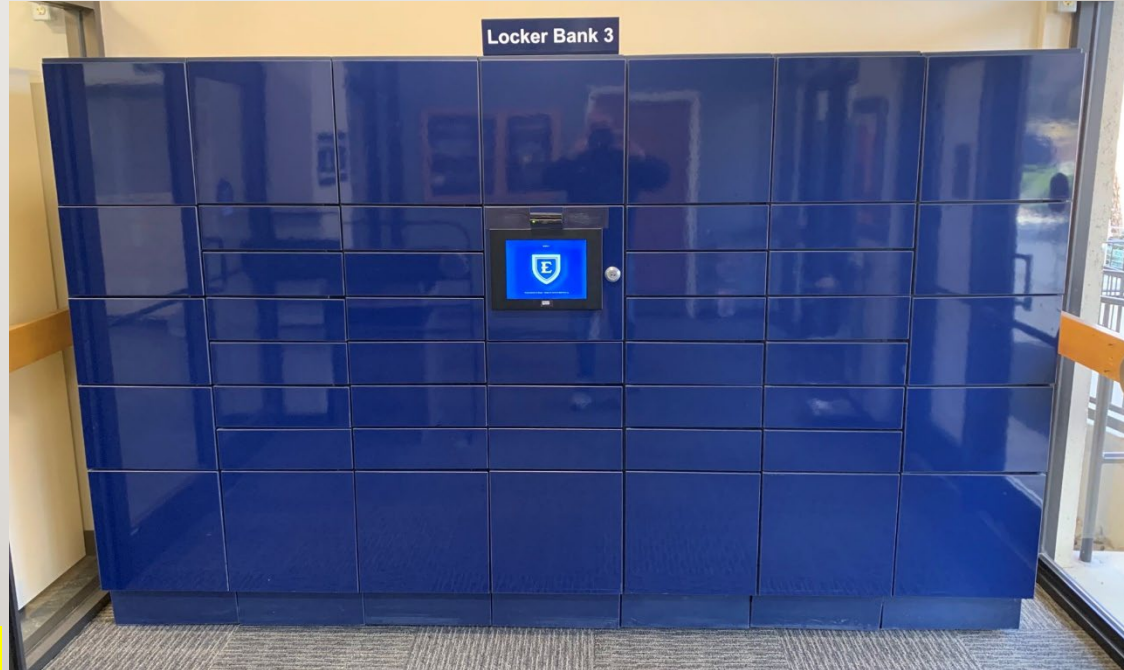
- Small - 27
- Med - 6
- Large - 15

Dimensions:

- Small – 5.5 x 16.75 w (opening – 5 x 12.25)
- Med – 11 x 16.75 w (opening – 10.5 x 12.25)
- Large - 16.75 by 16.75 w (opening – 16.25 x 12.25)

Depth is 23 inches on all sizes

Smooth Laminate Finish easy & quick to clean



SUMMARY OF NEW STUDENT LOCKERS

- 3 banks of 180 doors (47' wall space)
- 4 different door sizes
- Over 460 packages at same time on several occasions
- Have had over 700 deliveries in 24 hours
- The key is consolidating packages into same doors
- Reloading at lunch & at end of day is critical
- Not placing Mail for Closed, Forwards or Holds into system
- Signatures not needed (Policy adopted by USPS, UPS & FedEx)



SMART DEPARTMENT LOCKERS

114 doors - 12 feet of wall space

104 doors for permanent assignment

- Most Dept usually get mail everyday
- Emails sent if there is mail
- Permanent PIN so emails not needed

10 doors for re-assignable use

- Departments don't get much mail, only come to pick-up when emailed
- Operates like Student system
- Can put dozens of Depts that get little mail

Contactless Delivery & Pickup

Advantages: Easy & Quick to Clean



EAST TENNESSEE STATE
UNIVERSITY

DEPARTMENT LOCKERS – NO INTERNET NEEDED

- 28 Department doors & 2 Outgoing mail slots
- AM Drop-off, PM Pick-up (10 Mins)
- Staff Open all doors with 1 Key Fob
- Each Department issued PIN
- No Emails, Lan Line or Electricity needed
- Totally Portable & Standalone Systems
- A Notice System for oversized Packages
- **Contactless Delivery & Pickup**
- **Locker & Access Doors cleaned each visit**
- 24/7 access if needed



PRINT PRODUCT & LARGE PARCEL LOCKERS – NO INTERNET

- 10 doors for Departments or UPS & FedEx Drop-offs
- AM Drop-off (1-2 minutes of staff in our lobby)
- Consolidate Departments that are Co-located
- Serves over 20 departments
- Open all doors with 1 Key Fob
- Each Customer sent a PIN
- No Emails, Lan Lines or Electricity needed
- **Contactless Delivery & Pickup**
- **Locker & Access Doors cleaned each use**
- 24/7 access if needed



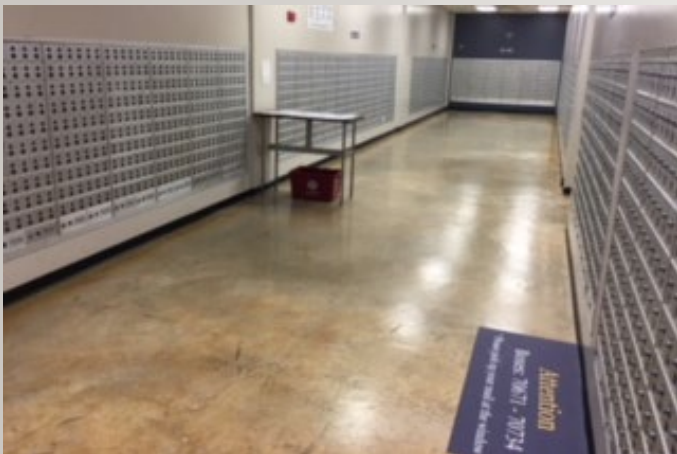
READY FOR THE REALLY EXCITING NEWS!



TRADITIONAL PO BOXES

- 8,700 PO Boxes
- 330 Linear Wall Feet vs 76'
- 2,900 vs 400 Square Feet to access

All Removed



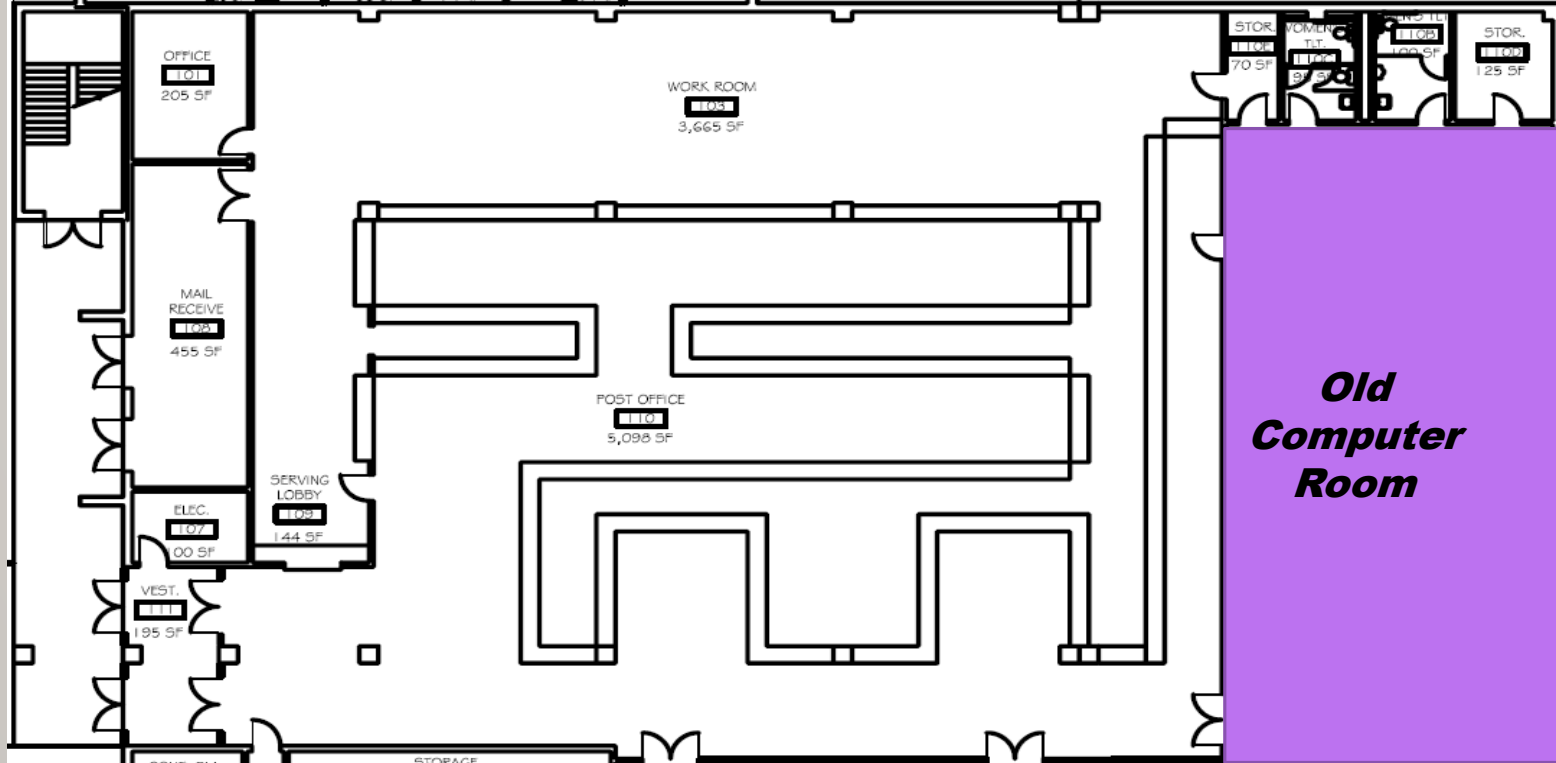
Dials & Handles

- **Difficult & Slow to Clean**



Old Configuration

Old Newspaper Office



Old Computer Room

***New Passport & Director's
Conference Room & Office***



OFFICE
101
205 SF

WORK ROOM
104
3,665 SF

STOR
102
70 SF

WOMEN
103
5 SF

STOR
104
100 SF

ITS

MAIL
RECEIVE
105
455 SF

ELEC.
107
00 SF

VEST.
108
195 SF

***All New
Lockers &
Mailboxes***

New Bookstore

Space Now Rented Out

SMART MAILBOXES - 280



SMART MAIL BOXES 1 & 2

Smart Mail Box Stats

- 5 seconds per piece to process
- 1 second per piece to sort
- 92% pickup in 24 hours
- Pick-up Procedures same as Lockers

Smart Mail Box 1

- 21 feet long
- 200 Doors
- 374 pick-ups one day (wasn't full)



SMART MAILBOXES – LETTER, FLATS, SMALLER PACKAGES

PICK-UP SAME AS SMART LOCKERS



Smart Mail Box 2

- 8 feet in length
- 80 doors – Avg 164 pickups a day

Total Smart Mail Boxes

- 280 doors
- 29 feet of wall space needed
- Total less than 160 square feet to access
- 5" high by 9.75" wide
- 15" depth but no door
- 75% of all packages will fit
- 1 size – Do not select door size each time

LOAD FROM REAR



EAST TENNESSEE STATE
UNIVERSITY

Smart Mailbox - How it Works

- Types a “**box number**” and the name and box number is displayed for verification.
- Selects “**add**” and repeat.
- The system assigns the lowest door number available & processes in numerical order.
- Once all the letters are entered, the letters are placed in the back of the mail boxes. (**1 sec each**)
- If system currently has a letter, the system alerts agent to add to earlier assigned door.
- System indicates “Forwards” & “Holds” before entry. (Reduces time & Customer frustration)
- System displays what mailboxes are available & occupied.
- Recipients receive a reminder notification every 24 hours (adjusted to what is needed)
- After 24 hours, mail is moved (if needed) to holding bins & automated daily reminders are sent out until mail is picked up or 15 days.
- Mail is filed in mail bins in alpha order to be held for a maximum of 15 days & Returned to Sender.
- System allows for mail retrievable by PIN, student ID card or mobile app.



Asset Manager Software Interfaces with all Systems including Mailroom

Dashboard Reservation Package Viewer Kiosks Mailbox Mailroom Content Agents Students Users Reports Settings Support & Maintenance

Asset Manager Dashboard

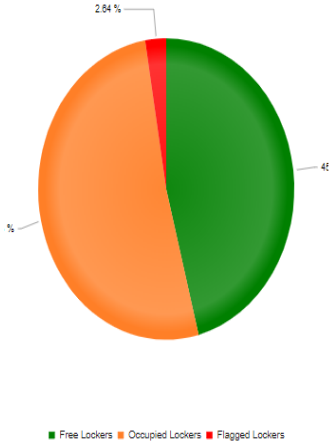
Refresh in 11 seconds

Kiosk Name	Code	Status	Lookers Count	Occupied Lookers Count	Packages Count
Bank-1	Bank-1	Online	74	49	55
Bank-2	Bank-2	Online	43	23	24
Bank-3	Bank-3	Online	58	22	22
Mailroom	Mailroom	Online	0	0	44
MBOX-01B	MBOX-01B	Online	200	108	108
MBOX-02	MBOX-02	Online	80	32	32
Total:			455	234	285

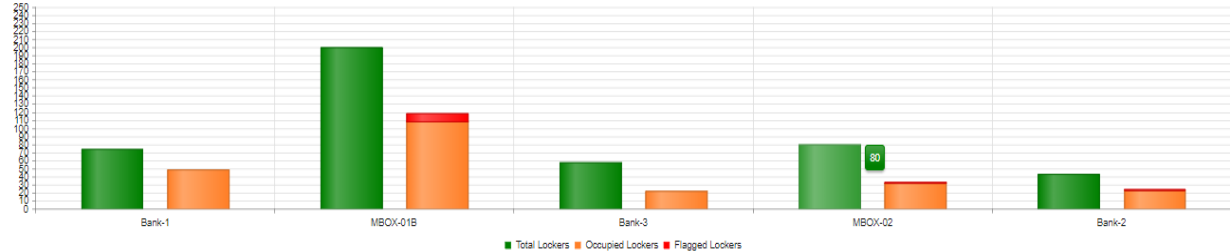
Navigation icons: Home, Previous, 1, Next, Refresh

1 - 6 of 6 items

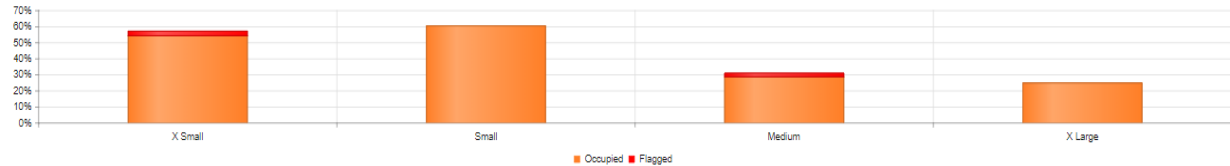
Current Overall Utilization



Current Utilization by Kiosk



Current Overall Utilization by Size



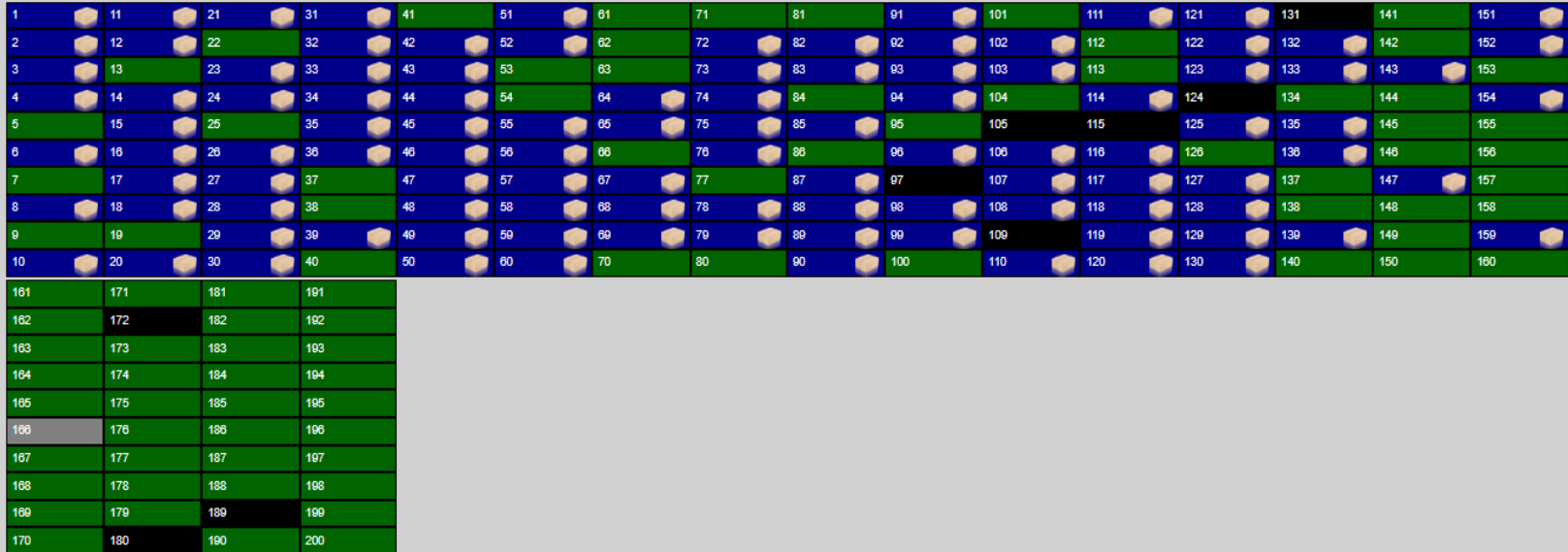
STEP I - SELECT "DROP-OFF"



Kiosk Locker Bank Layout : MBOX-01B

Drop Off

Recover All



Size	Available	Occupied	Flagged	Expired	Disabled	Reserved	Total
X Small	85	105	9	0	1	0	200
Total	85	105	9	0	1	0	200

- Available
- Occupied
- Flagged (Dirty)
- Flagged (Out Of Service)

STEP 2 - ENTER "PO BOX NUMBER" AND VERIFY ADDRESSEE
STEP 3 - SELECT "SAVE AND NEW"



Kiosk Locker Bank Layout : MBOX-02

Go Back General Kiosk Settings Locker Layout Settings & Synchronization

Drop Off

Recover All

1	11	21	31	41	51	61	71
2	12	22	32	42	52	62	72
3	13	23	33	43	53	63	73
4	14	24	34	44	54	64	74
5	15	25	35	45	55	65	75
6	16	26	36	46	56	66	76
7	17	27	37	47	57	67	77
8	18	28	38	48	58	68	78
9	19	29	39	49	59	69	79
10	20	30	40	50	60	70	80

Size	Available	Occupied	Flagged	Expired	Disabled
X Small	48	31	1	0	0
Total	48	31	1	0	0

Drop off at Mailbox Locker:

Locker

1

Name

Don McCarty (MCCARTYDL-10003)

Name (ID - Mailbox Number)

Package ID

Save and New

Save and Close

Close

IF ADDRESSEE ALREADY HAS MAIL – SYSTEM ALERT
IF A PACKAGE IS GOING TO BE PUT IN – SCAN BARCODE

Drop off at Mailbox Locker:

Locker

Name



Name (ID - Mailbox Number)

Package ID

Selected student already has a package in the locker 1. Please drop off the item in the same locker.



Save and New

Save and Close

Close

- * MORE THAN JUST LETTER, FLATS & NEWSPAPERS
- * 75% OF ALL OUR PACKAGES WILL FIT IN THE MAILBOXES
- * COMBINING LETTERS WITH PACKAGES INCREASES PICK-UP RATE
- * LETS AGENT SELECT SPECIFIC MAILBOX AND/OR DOOR

TZ Limited Welcome

Dashboard Reservation Package Viewer Kiosks Mailbox Mailroom Content Agents Students Users Reports Settings Support & Maintenance

(New Reservation - Step 3 of 4) Select Locker Size

Recipient: Don McCarty Packages: testpig

Select Locker Bank: Locker Banks Availability

Locker Bank	
X Small	X Small
MBOX-01B	101
MBOX-02	47

Select from Empty lockers:

X Small
5(H) x 17(W) x 17(D) (inches)

Select from occupied/reserved lockers:

1 (XSmall)
Packages(1) Reservations(0)

Pros of Smart Mailbox System vs Traditional PO boxes

- **More than just Letters** - Ability to accommodate letters, magazines, flats & small packages
- **Mail Retrieval** - by PIN, Student ID card or Mobile app
- **Easier & Faster Loading** - Larger doors than traditional PO boxes
- **Notification** - Ability to send tracking numbers via e-mails & deliveries recorded
- **Online Viewing** - system allows viewing of the current status of each mail receptacle
- **Smaller footprint** - (built into the wall) decreasing letter mail space
- **Integration** - System is capable of being integrated with other automated programs to streamline data updates (Changes to Open, Close, Forward & Hold Boxes)
- **Accountability** - Every piece of mail is accounted for from Delivery, RTS, Forward & Recycle



Pros of Smart Mailbox System vs Traditional PO boxes (cont)

- **No sharing of PO boxes** or worry about leaving PO Boxes closed for a set amount of time before being reissued
- No need to change combination locks or worry about replacing keys
- No need for periodic quality control of thousands of PO Boxes to ensure the correct letters are in the correct box
- No need to periodically change the PO Box Number or Name labels on the PO Boxes
- No need to teach customers how to open the PO Box doors each semester
- No need to remove all the mail at the end of each semester
- No need to post “Forward or Hold Cards” on the PO Boxes & remove them when semester is over
- No need to spend money on Package Tracking System or Labels
- **Easy & Quick to Clean Doors**
- **Far less touching of surfaces for Clerks & Students**



Pros of New Mailbox System vs High Density Folder Systems

- 24 hour access to mail for students
- No manpower required to retrieve mail from receptacles to complete the delivery
- **Contactless Delivery & Easy to Clean**
- Students don't have to wait in line for letters to be retrieved from folders (**no worry of social distancing**)
- System is capable of delivering small packages like books
- No labeling and relabeling of the folders
- Eliminates periodic quality control for thousands of folders to ensure the letters are in the correct folders
- All doors are re-assignable after each delivery which doesn't require each box holder to have a reserved space
- No removing of all the mail at the end of each semester



Last Day of Semester



- Dashboard
- Reservation
- Package Viewer
- Kiosks
- Mailbox
- Mailroom
- Content
- Agents
- Students
- Users
- Reports
- Settings
- Support & Maintenance



Asset Manager Dashboard

Refresh in 29 seconds

Kiosk Name	Code	Status	Lockers Count	Occupied Lockers Count
Bank-1	Bank-1	Online	74	0
Bank-2	Bank-2	Online	43	0
Bank-3	Bank-3	Online	58	20
Mailroom	Mailroom	Online	0	0
MBOX-01B	MBOX-01B	Online	200	0
MBOX-02	MBOX-02	Online	80	32
		Total:	455	52



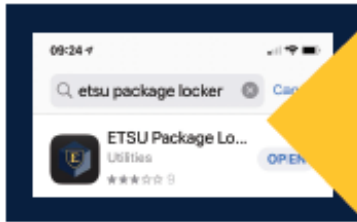
MOBILE APP FOR MAIL PICKUP

Requires no contact with screen

PACKAGE PICK-UP MADE EASY

DOWNLOAD THE APP

- Instant notification of package delivery
- View all packages in the mail center
- Faster pickup time

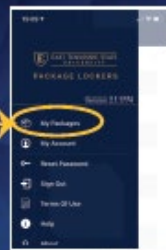


Download the ETSU Package Locker App in the app store

Create an account using your ETSU email and select a password

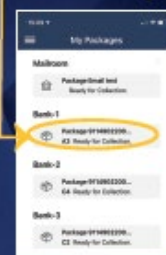
4 Easy to Use Steps

Select "My Package"
From the Menu



1

Select the Package
to Pick-Up



2

Move within 10ft
of Locker



3

Select
"Open Locker"



4

LATEST CHANGES FOR SMART LOCKERS

All these changes increased efficiency

- Seamless automated transition from Lockers to shelving for mail
- Added Hold & Forward Functionality to system to wasted Time & Space
- Added ability to place multiple packages in same door
- Added ID card scan for Pickups
- Mobile App
- Better Metric Reporting
- Refrigerated units
- Multi-status change upload from PO Box Manager to TZ (Adds, Deletes, Holds & Forwards added and removed with one upload)
- Rear Loading

Don't settle for what is offered, make your Business Partner work for you





LOCKER ADVANTAGES FOR COVID-19

- Multiple Customer Pick-up Options (Card, PIN & Mobile App)
 - Construction and Design Features to Reduce Contamination and speed cleaning
 - Package Delegation – allow others to pick up, staff not involved
 - Protect Your Staff – Touch once
 - Avoid Customer/Employee Interaction
- See comments in Notes section for detailed explanation



CONSIDER OTHER USES FOR LOCKERS

- **Bookstore** – when book arrives students need it now
- **Library** – After hours access or reduce foot traffic
- **ID office** – ID office sends to us for final delivery
- **Registrar/Grad Office** - Diplomas, Transcripts & Regalia Items
- **Print Office** - Smaller Print Jobs (envelopes, flyers, stickers, letterhead)
- **Ticket Office** – Athletics, Music, & any event – Especially if you print them
- **Campus Mail Distribution**
- **Eliminate or Reduce Delivery Runs** – Lockers at buildings
- Lowes, Home Depot, Walmart, Apple, Microsoft have embraced Smart Lockers

Note: Not All of these office above are open 24/7/ & 365 days like the lockers



THINGS TO CONSIDER

- When was the last time you left your office and every piece of mail that came in was available for the customer access 24/7
 - Parcel Lockers only 6 times in over 6 years (every item not in a locker by COB)
 - Since adding Smart Mailboxes – every mail item was in a door before leaving
- Last time you were 100% sure every item was in the correct delivery receptacle
- How long & often does your office conduct 100% Quality Check. ETSU twice a day 5-15 minutes
- Postal department only provided mail sorting & delivery & ran a CPU
 - 2016 added Passport & Photo Service, same staff now generate 54K in revenue
 - Added Print capability starting with letter addressing & Wide Format Printing – same staff
 - July 2018 responsible for printing or approving & ensuring every item is printed campus wide
 - Huge revenue stream for department, significant saving for campus – SAME STAFF

We have earned the reputation as the Department that "Gets things done Right at the Right Price on Time"

ALL changes in the operation were directly or indirectly due to SMART Lockers & Mailboxes



MORE THINGS TO CONSIDER

- **Find Business Partners with a desire to work with you** to provide the total mail delivery solution.
- Review the total mail process and not just packages
 - Get Rear loaded Smart boxes to save Time & Space (**Do not get High Density Folders**)
 - Over 30% of mail will be delivered after hours
 - Space savings by shelf reduction by 80%
 - **Do not get a separate Package Tracking System** – Waste of Time & Money
 - Only use reservation System if you have ran out of doors – double handling
 - **Do not apply additional labels** – Waste of Time & Money (can confuse customer)
- All Outsourcing Companies know Lockers are the best way to improve mail operation.
- **Almost All outsourced mail operations was because of 1 person not having:**
 - **Vision to see how technology could help**
 - **Desire to do the work to make needed changes**
 - **Proper support or relationship with leadership to make changes**



HOW TO GET STARTED

- Think Out of the Box – **Embrace Innovation & Technology**
- Establish Metrics Program – to determine size & # of doors – Great RFPs are out there
- Do Not Over Buy – Many vendors don't understand your volumes or processes
- Consider time saved on Inefficient Processes
 - PO Box Maintenance, Quality Control & Mail Sorting
 - Time saved touching mail once
- How much space can be saved & how much the space costs
- Goal should be not to reduce services but increase capabilities
- Don't go with cheapest or easiest solution (you will regret it)
- **When travel restrictions lifted, the best thing would be to come to ETSU for a site survey**





Questions?

DON MCCARTY - MSM, CMM, CMDSM, EMCM

DIRECTOR, POSTAL, PASSPORT & PRINTING SERVICES

EAST TENNESSEE STATE UNIVERSITY

423-439-6895

MCCARTYDL@ETSU.EDU



EAST TENNESSEE STATE
UNIVERSITY