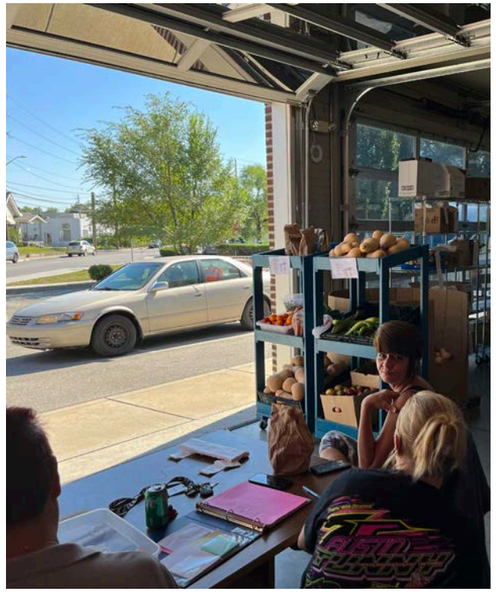
southeast

RESTRUCTURING THE PANTRY

SPRING 2024 REPORT | VOL 2.4

southeast



SOUTHEAST
community services

Top row: Volunteers pack food boxes, Front desk workers check neighbors into the thrift shop, and a box of food sits waiting to be picked up by a neighbor.

Bottom row: Shelva Floyd, food pantry coordinator at a desk in the pantry; Storage shelves in the backstock; front door to the pantry.

TEAM SOUTHEAST

Design Researcher

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Introduction

"At Southeast Community Services, one of our foundational beliefs is that everyone is naturally creative, resourceful, and whole. That is the core on which we build our programs, and how we treat our neighbors and staff. We presume that neighbors are experts in their own lives and, therefore, critical partners in the work to meaningfully address challenges they face."

—Peggy Frame, Executive Director

Southeast Food Pantry (Southeast) is located in the Fountain Square neighborhood, near downtown Indianapolis. It is operated by Southeast Community Services, a large multi-service center that has created deep ties to the neighborhood over the past 50 years. The pantry shares space with a thrift store operated by Fletcher Place Community Center in a distinctive, repurposed auto body garage building that has been named "The Elaine," in honor of Elaine Cates, a longtime Southeast employee who was known for serving the community. Although it is nested within a large community organization, the pantry has only one employee, Shelva Floyd, the Food Pantry Coordinator, whose diverse prior experience includes working in the finance industry and as a chef. Shelva is exceptionally well suited to this work and approaches it with consideration and zeal.

A volunteer organizes pre-packed food boxes on pantry day as he waits for neighbors to arrive.

Advertisement for "Produce for the People"


A pantry worker protects a ham from a canine neighbor as she chats with his owner.

Southeast has two methods of food distribution, a traditional food pantry and an open-air market called "Produce for the People." The food pantry currently serves 30 families on Mondays from 2:00-4:00pm and 42 families on Thursdays from 3:00-5:30pm. It uses a "client choice" model, where neighbors select groceries through an online platform called SmartChoice and pick up their orders at appointed times, approximately two weeks later. Volunteers meet one hour before the pantry opens and pre-pack the neighbors' orders for pickup. Produce for the People serves 30-100 families per week (varies with the weather) on Wednesdays from 12:00-2:00pm in an unstructured setting where neighbors can select an unlimited amount of produce. The pantry sets out half of the day's produce at 12:00pm and then replenishes the tables with the remainder of the produce at 1:00pm. Neighbors are free to take whatever they wish. Any leftover produce is distributed on pantry days or set out at the community center for the public.

FALL 2023 RESEARCH PROCESS & FINDINGS

During the fall semester of 2023, our team of Collaborative Action Research in Design (CARD) students at Herron School of Art + Design worked at Southeast to understand the pantry's processes and map the experiences of the staff and volunteers using a human-centered design (HCD) approach. HCD asks designers to lead with empathy. We empathized with the staff and volunteers at Southeast by observing, interviewing, and documenting the experiences that they were having as they interacted with one another, their clients, and with the system.

RESEARCH QUESTION 1

What are the commonalities of the staff and volunteer experiences at food banks and food pantries?

RESEARCH QUESTION 2

How might staff and volunteers create an environment of empowerment for end users?


Staff and volunteers from Southeast and Fletcher Place celebrating after the 2023 Thanksgiving basket giveaway.

We discovered that Southeast serves as a welcoming hub in the community, providing not only food but a connection point for staff, volunteers, and community members that creates a social safety net. There is a significant mutuality and reciprocity that exists in the pantry, as neighbor helps neighbor with little distinction between the giver and receiver. We determined that the pantry values:

- **Efficiency**
- **Agency**
- **Caring Community**
- **Serving Effectively**

Each of these values helps drive the day-to-day workings of the pantry that we mapped through the experience of the staff and volunteers.

Simultaneously, our colleagues from the Luddy School of Informatics and the Purdue School of Engineering & Technology worked to map the information flow and material flow at the pantry.

SPRING 2024 RESEARCH PROCESS & GOAL

In the spring of 2024, our team reconfigured, and we formed an interdisciplinary group, bringing together one student from each field: design, human computer interaction (HCI), and engineering. A Master of Business Administration (MBA) student from the Kelley School of Business also joined our team at this time. We started the spring semester building on the knowledge each group member brought from their fall semester research at the pantry.

We worked together to review the prior research and confirm with Shelva the pantry's main priorities as well as the specific barriers and challenges they were facing.

SOUTHEAST'S TOP PRIOTITIES

- **Addressing neighbors' food needs**
- **Increasing the number of families served**

Food assistance is a stabilizing factor for Southeast's neighbors in need—keeping them from making hard decisions between food and other household necessities.

Volunteers loading a car on a pantry day.

SOUTHEAST'S TOP BARRIERS & CHALLENGES

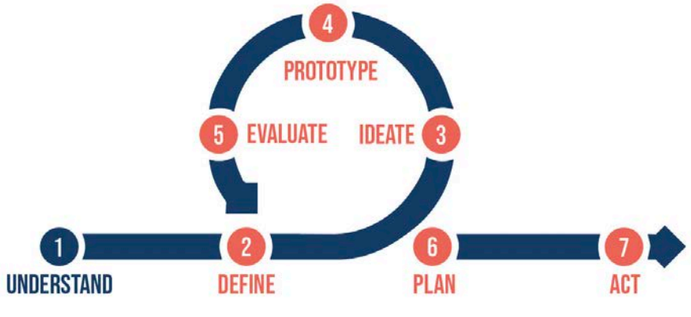
- **The high number of no-shows on pantry day (often 30%).** Each week, the pantry had many neighbors who were ordering food and were not showing up to claim their order. Every time that happened, it prevented another person who might have benefitted from using the pantry resources. "No-shows" were also creating extra work for staff, who had to try and contact them repeatedly and/or re-stock their orders after pantry day.
- **A complex inventory tracking, forcasting, and management system.** Software limitations at the pantry were creating difficulty managing inventory, which meant that sometimes staff might over or under order food due to a lack of sufficient forecasting information. The crux of this issue is a two-week delay between the time neighbors order food and pick it up. Staff knew that they needed "50 boxes of cereal" to satisfy neighbors' orders, but they did not know exactly *when* they needed them. With limited storage space and money, they could not just go ahead and order everything the system suggested.
- **Lack of transportation access to assist with food sourcing.** The pantry was limited to sourcing food from Gleaners food bank because Gleaners will deliver its orders to Southeast. Sometimes, other food sources offered something to the pantry for free or at low cost, but the pantry did not have access to a vehicle to use to procure it.

Our goal throughout the spring semester was to address these barriers and challenges at the pantry together and deliver one or more design solutions. Our team used the CARD Model as our framework for the design process.

SmartChoice™ Food Pantry Software

Some of the challenges at the pantry are created by their software, SmartChoice. This application is also expensive. It costs the pantry $1,000 per month, the same amount as enough food to fill the weekly grocery orders.

Methodology



THE CARD FRAMEWORK
is a design process model developed and implemented by the Herron School of Art+ Design.

The CARD Model has seven phases: Understand, Define, Ideate, Prototype, Evaluate, Plan, and Act. As the diagram indicates, the Ideate, Prototype, and Evaluate phases may be repeated in cycles before Plan and Act begin.

During the fall 2023 semester, our teams were all in the Understand phase, which was full of information discovery. Our new interdisciplinary team started the spring semester by working with Shelva, the pantry director at Southeast, to define a problem statement. Then we continued working to ideate potential solutions, prototype and evaluate those solutions, and create a plan the pantry could use to act, ultimately delivering a design solution that addresses the identified priorities and barriers.

DEFINE PHASE

Our team meeting with Shelva (left) for the first time during the spring semester.

In order to provide direction for our work, our team met with Shelva in January to review the fall semester's findings and develop a Problem Statement.

We created a Challenge Map *(see VOL 2, Fig 2)* that identified multiple opportunities for improvement at the pantry and classified them in three categories: Caring Culture, Mobilizing Resources, and Process Improvement. Each opportunity existed along a continuum from strategic <——> tactical. We mapped them accordingly so that our team and Shelva could examine the options together in a systematic manner and take care to select one that would help focus our work for significant impact. Shelva immediately decided not to consider the Caring Culture space, the pantry was already addressing some needs in that area. So, we began to look for opportunities that would mobilize resources and improve processes. Through this initial discussion, we isolated two problem statements we wanted to consider for our work together.

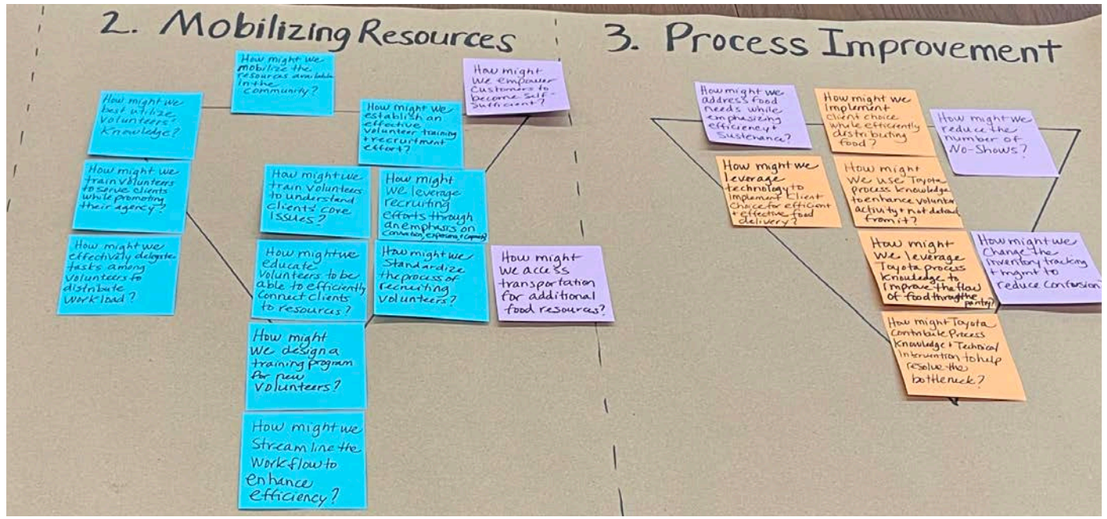
FINDING OUR FOCUS

- **"How might we leverage technology to implement client choice for efficient, effective food delivery?"** *(We added a note to this indicating the need to improve inventory forecasting & management.)*
- **"How might we leverage Toyota's process knowledge to improve the flow of food through the pantry?"**

After further reflection and additional conversation, we refined our problem statement and began to shift our midset to approaching the problems we had identified as opportunities for impact.

PROBLEM BECOMES OPPORTUNITY

"How might we improve the flow of food through the pantry while preserving client choice?"



Challenge Map: Shelva asked our team to focus on Mobilizing Resources and Process Improvement.

Shelva discussing the Challenge Map with our team

IDEATION PHASE

After defining the problem, our team moved into the Ideation Phase of the design process. Since we knew what area of the pantry's work we wanted to focus on to make a change, we could begin to dream about the possibilities for what we could accomplish together throughout the semester.

Ideation Session 1

In early February, we were joined by Jamie Bonini, the President of Toyota Production System Support Center, a non-profit division of Toyota that consults on process improvement. Jamie has worked with many food pantries across the country to optimize their workflows; he visited Southeast to share his knowledge and help our team ideate with Shelva.

During Jamie's visit, we walked through the pantry and demonstrated the pantry's staging and workflow. We discussed the manpower and resources the pantry uses to fulfill orders on pantry day. Our team, Shelva, and Jamie diverged together on ways to improve the process by brainstorming and role-playing common scenarios in pantry order fulfilment.

We documented the session with photos and notes and produced a list of ideas to consider for prototyping.

Jamie (left) talking with one of our teammates about the idea of using carts in the pantry to speed order fulfillment.

IDEAS GENERATED AT OUR SESSION

- **Reduce choices & streamline food options into "buckets," which could include cultural foods**—example buckets would be toiletries, greens, fruit, vegetables, starches, cereal, Mexican food, baking staples, etc.
- **Don't pre-pack food orders**—serve clients the same way as now but don't pre-pack boxes, reducing inefficiency of packing no-show boxes. This option brings longer wait time and potential parking issues but also gives freedom to serve some walk-ups.
- **Have customers park & shop in person**—Jamie's research says people prefer to shop in person and look at the merchandise; but it may be difficult to get orders completed in a timely manner. May also require more volunteer help. Parking could be an issue as well.
- **Reduce time between order & pickup using current system**—with the goal being to reduce no-show orders significantly by having people order as close to pick-up as possible (day before, morning of, or on-site when they come to the pantry).
- **Clear the wait time in the system**—could or should we have an "all-call pickup" week where all orders are fulfilled and we begin again with ordering closer to pickup time? Shelva is unclear how the wait time developed and may research this.
- **Operate pantry days more like produce days, where resources are expended each pantry day?** The pantry could use half on Thursday and constrain half the food for the Monday pantry day.
- **Offer a hybrid service**—Thursday is online pick list day with order confirmation, Monday is in store shopping day?
- **Use small shopping carts for days when volunteers are low in number?**
- **Neighbor Survey**—What if we talked to some repeat clients and asked them about their reaction to change? How would people respond? Would they like to order closer to pick up, order in person, or something else entirely?

Shelva and Jamie discussing an idea in the pantry.

Ideation Session 2

One week after Jamie's visit, our team met with Shelva to continue the ideation process and select ideas for prototyping.

We started this session by reviewing the pantry's goals with Shelva to make sure we selected ideas for prototyping that would advance them. Shelva had met with colleagues at the community center and determined that their main goal was to serve more neighbors. However, they had a secondary goal to increase the depth of relational connection.

Keeping these goals in mind, we reviewed the ideas we had generated from our session with Jamie and began to refine them through guided discussion. We converged our ideas by examining their degree of relevance to the pantry's goals.

During our discussion, Shelva expressed that while the pantry was open to multiple solutions, reducing the variety of offerings seemed counterintuitive given the level of service they were trying to provide their neighbors. So, we focused on solutions that we thought could increase personal service, increase the number of clients served, or both. We had a casual interest in exploring shopping carts, but it was not our main goal. **We selected "Park & Shop in Person" and "No Pre-Prepacking" as the potential design solutions we wanted to prototype.** Then, we outlined these top two choices in a storyboard format to determine how each experience should flow and how we would prototype them together.

Shelva with part of our team discussing ideas from the session with Jamie.

OUR IDEATION TOOLKIT

- A toolkit designed for ideation includes interactive materials for co-creation that are meant to promote understanding, spark ideas, or assist with visualization.
- To aid in the storyboarding process, our team created a toolkit that included Post-its, butcher paper, markers, and paper cutouts of a variety of items that could be important to the pantry workflow. These items could be used to articulate new workflows quickly as we worked.

PROTOTYPING & EVALUATION PHASES

Once we had ideas to work with, our team moved quickly to prototype and test them. One team member met Shelva at the pantry on the next pantry day to conduct a brief test of having volunteers use shopping carts. That trial produced some amount of chaos and traffic jams in the pantry and did not seem to increase order fulfillment speed, so we decided to put that idea on hold and continue with the prototypes we had storyboarded together during our ideation session.

Prototyping & Evaluation Session 1: "Park & Shop in Person"

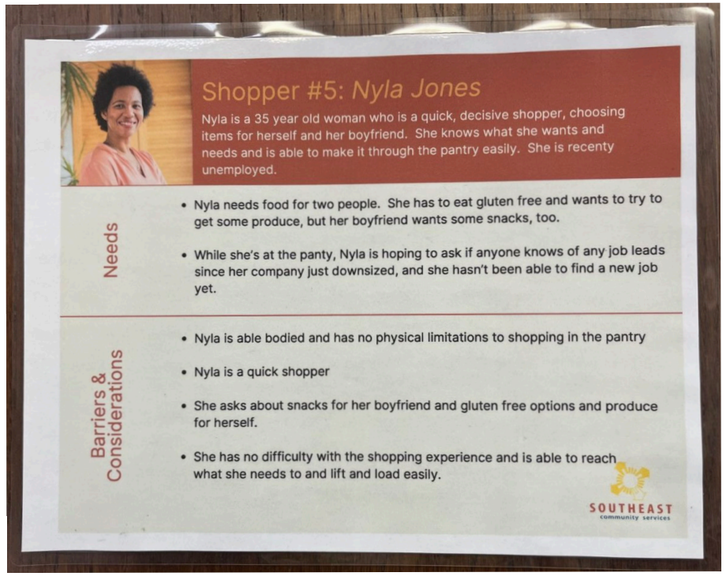
A fellow student (left) and a member of our team (right) role play a pantry shopper and a volunteer during our "Park & Shop in Person" prototyping session.

A few days after our ideation session, our team met at the pantry to prototype the design solution we called "Park & Shop in Person." Although Southeast already has a mechanism for their neighbors to choose their own groceries, they can only shop online, not in person. Jamie's research suggests that people prefer to see pantry items in person and select them themselves, given brand preferences, produce freshness, and dietary issues. We wanted to determine if it would be feasible to offer an in-person shopping experience for Southeast neighbors and if using that model would impact the number of people we could serve weekly.

We conducted an experiential prototype of the "Park & Shop in Person" method on a day when the pantry was closed. Our team invited two other students to participate, and Shelva invited a pantry volunteer. In all, we had seven participants prototyping and one of our teammates watching the process remotely via livestream video and documenting the session.

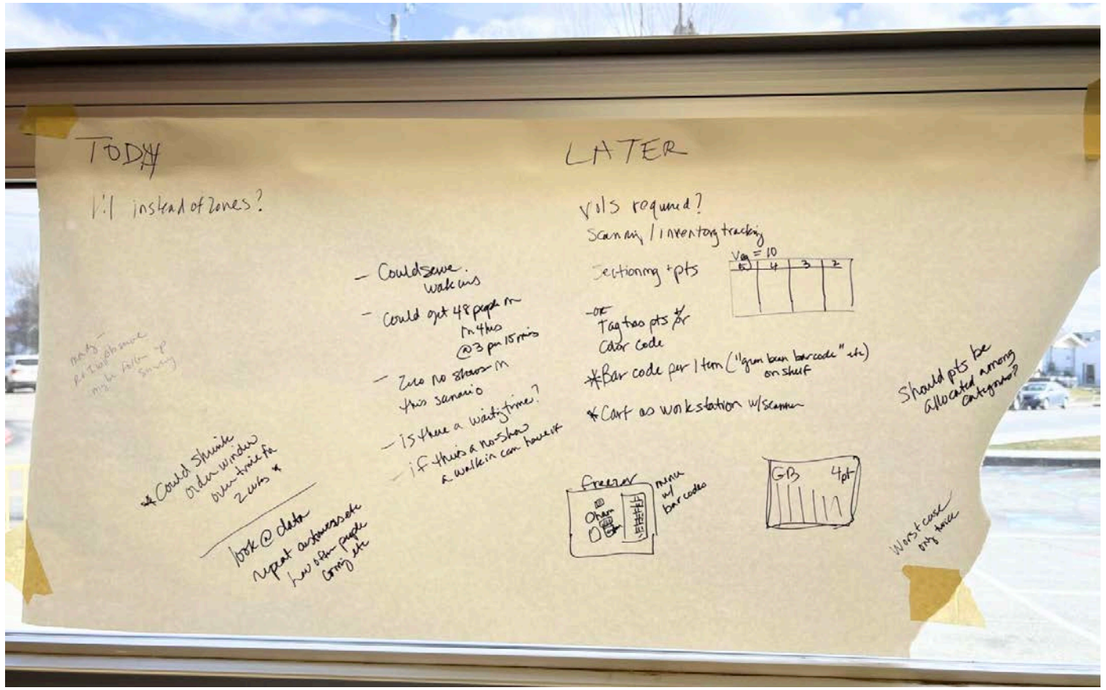
We divided the session into four parts: Prototype, Evaluate, Prototype, Evaluate. During each Prototyping push, three participants acted as pantry volunteers/"personal shoppers" who were assigned to help "neighbors" manage the shopping experience. They were given information about item limits by food type and household size, etc. to help shoppers make their selections. Three other participants acted as "neighbors" who were shopping at the pantry and were given personas to adopt that included their personality, circumstances, household size, food preferences, and dietary requirements. The final participant acted as a "check-in/check-out clerk." During the first prototyping push, volunteers were each responsible for one "zone" of the pantry and would hand off the neighbor from volunteer to volunteer as they completed their shopping experience. This strategy is one that Jamie had suggested we try due to its effectiveness at creating efficiency in many other pantries.

After the first prototyping push, we evaluated what we had done and discussed the results to see if we needed to make any adjustments to the process we were using. We determined that the zone strategy was not working well for us. Transitioning the neighbors among volunteers felt cumbersome and created a relationship interruption. We decided to conduct the second half of our prototyping session using a 1:1 neighbor to volunteer strategy during the second prototyping push. This time, the same volunteer stayed with the neighbor throughout the entire shopping experience. Afterwards, we evaluated again, documenting the benefits of the new strategy and other changes that we would have to make at the pantry to be able to execute it effectively with neighbors for a live prototype or pilot test.



USING PERSONAS

During our prototyping session, each participant played a role in the pantry. In order to help them understand their role and how they should interact with the other people, the environment, and the items in the pantry to get the most accurate results possible out of our test, we developed personas. Each participant then adopted the persona they were given. The photo at left shows a sample of one personas we developed for a Southeast pantry shopper.



Above, notes we took during the "Evaluate" portions of our session. We divided our notes into two sections: "What should we change today?" and "What would we need to change for later?"

After two rounds of testing, we learned that it was feasible to manage "Park & Shop in Person" at Southeast using personal shoppers who worked 1:1 with neighbors. We discovered that most shoppers required 15 minutes in the pantry regardless of their family/order size and personal circumstances. Moving through the pantry, interacting with the volunteer, and going through the point system were the limiting factors. With this information, we determined that Southeast could serve 48 neighbors with the "Park & Shop in Person" model during a regular pantry day, which would increase the number served under the current model. However, there would have to be significant changes made to the pantry to make it work.

CHANGES REQUIRED BY "PARK & SHOP IN PERSON"

- **Track shoppers' points and pantry inventory in real time.**
- **Implement system of barcoding items by grocery type.**
- **Develop visual cues to help shoppers & workers track points more easily.**
- **Change pantry layout & signage slightly to accomodate in-person shopping with carts.**

Prototyping & Evaluation Session 2: "No Pre-Packing"

At the time, Southeast volunteers were coming to the pantry an hour before pantry day to pack neighbors' orders before they arrived. This activity was frenetic, took extra time, and also created the issue of having to return items to stock when neighbors didn't show up to pick up their order, which happened about 30% of the time. We wanted to see if it was feasible to eliminate pre-packing and move to a just-in-time packing model to mitigate some of these problems. Due to the widely variable size in orders, it took each volunteer between 3-30 minutes to pre-pack an order before the pantry opened, with most orders taking about 5-10 minutes.

The week after our first prototyping session, our team came to the pantry on a pantry day to do a live prototype for our second design solution called "No Pre-Packing." Shelva assembled the typical crew of volunteers, had them arrive an hour before pantry day as usual so that we could meet, and printed two copies of each order. We discussed how to divide the workload among the volunteers, ultimately deciding to create two teams of two with Shelva floating back and forth to lend support for larger orders or to get frozen items that were difficult to find. We decided that one volunteer would work from the top of the list while the other would work from the bottom. Once we determined the best procedure, we packed a couple of orders to try it out and discovered that the flow was working well. Then, we waited for the pantry to open. As Shelva and the volunteers filled the orders, our team tracked the order fulfilment times (which translated to the neighbors' wait times).

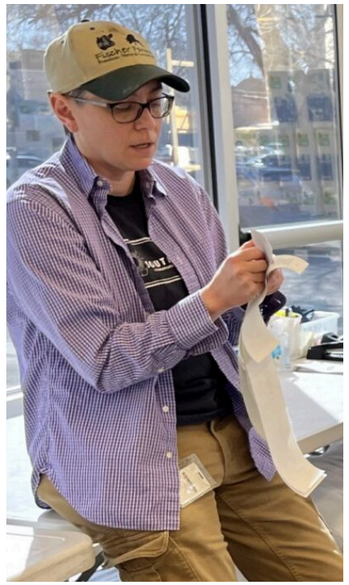
Above & left, our team observed the trial and tracked order fulfillment times, which ranged from one to six minutes. The average time was 2.4 minutes, significantly faster than with pre-packing.

At left, volunteers pack orders in teams of two during our prototyping session.

"No Pre-Packing" worked incredibly well. Because volunteers were approaching the work systematically in pairs, there was a much more organized, less frenetic feeling in the pantry than normal. Due to an organization system Southeast had recently implemented, food items were listed on the order tickets according to their location in the pantry in a systematic way. That organization was a key factor that allowed No Pre-Packing to work well because volunteers who split the order tickets in half were able to move about on opposite sides of the pantry to gather food items, which prevented them from running into one another in the small space, enabling them to fill orders quickly. Order time fulfillment time was reduced to 1-6 minutes, with the average order taking 2.4 minutes. Additionally, volunteers enjoyed working in teams and reported feeling more of a sense of community in the pantry with this strategy. Team members can also be paired to accommodate for strengths and weaknesses, increasing the team's capability to work well.

After the Prototyping session, our team met with the Southeast staff and volunteers briefly. Everyone felt so positive about the solution implementation that the pantry decided not to go back to pre-packing. They also felt that the pantry could use this strategy to increase the number of neighbors served from four every 15 minutes to six every 15 minutes. Additionally, Shelva felt this model would allow for a "Coach" (staff person from the community center associated with the pantry) to greet the cars as they arrive, update neighbors' information, and interact with them during the order packing process, addressing the goal of increasing the depth of relationship with neighbors as well.

A volunteer packing cold items during our session.

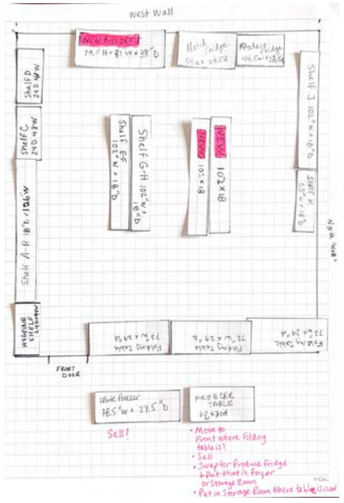


At top, alphabetical shelf tagging corresponds to location tag on the order tickets given to pantry workers to fulfill, at bottom. By splitting the ticket in half, a team of volunteers each works on the opposite side of the pantry to fill the order, relieving congestion and speeding uo order fulfillment times.

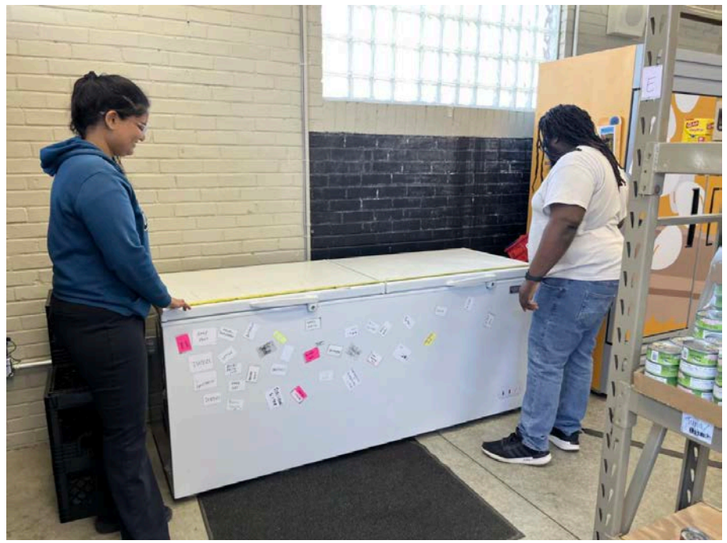
Prototyping & Evaluation Session 3: "Pantry Reconfiguration"

Increasing the number of neighbors served at the Southeast pantry requires sourcing and storing more food. The space in the pantry is somewhat limited, so we wanted to determine the best way to configure the pantry to maximize storage.

In mid-March, our team went to the pantry to measure the space and each of the key elements that currently exist in it (tables, shelving units, refrigerators, and freezers). We then built a paper prototype of the pantry so that we could reconfigure it and determine ways to maximize the space and gain additional storage capacity. As we were measuring the pantry, we talked with Shelva about constraints in the space and opportunities and limitations for storage. Shelva confirmed that we had to stay within the confines of the existing footprint of the pantry and not use any space from the thrift shop. Given that constraint, one thing our team noticed was the amount of floor space being taken up by the existing chest freezer and freezer table. While observing in the pantry, we had also noticed that these freezers were hard for the volunteers to use because it was difficult for them to see the contents and navigate their way through to find items.



Above, we created a paper prototype of the pantry with suggested changes in pink.



At left, our team measuring the pantry.

When we built the paper prototype, we looked for upright, commercial glass door freezer options and discovered that we could significantly increase the freezer storage while decreasing the footprint in the pantry. Currently, the existing freezers take up 27.5 ft^2 and provide 38 ft^3 of freezer space. An upright, commercial, glass door freezer would take up 18.5 ft^2 and yield 72 ft^3 of freezer space. It would also create greater usability for volunteers. Changing the freezer configuration would also make more floor space available, allowing the pantry to increase the square footage of shelf storage by 27%. Shelva mentioned the possibility of adding toppers to the existing shelving, which could provide even more space if there is a means of effective utilization determined for shelving that tall.

Changing the pantry's existing chest and table freezers out for a glass door reach-in freezer like this one would provide additional storage while taking up less floor space. It would also increase usability for workers.

Current freezer configuration and organization makes it difficult for pantry volutneers to find items quickly and slows down order fulfillment.

PLAN & ACT PHASES

After the Prototyping & Evaluation sessions, our team met with Shelva both online and over email to debrief and plan to implement solutions for the pantry.

We decided not to pursue "Park & Shop in Person" because there were significant changes required to pantry logistics to facilitate this shopping model and because we could scale the pantry more quickly and serve more neighbors with the "No Pre-Packing" model. Shelva implemented that model immediately after the prototyping session; it was working well, and they were able to incorporate the community center Coach as hoped, improving the relational aspect of the neighbors' experience. Shelva and our team discussed the idea of reconfiguring the pantry to allow for more food storage. The engineering student on our team created a 3D model of the suggested new pantry configuration to enable visualization. Shelva applied for a grant for the new freezer and shelving and additional food resources, among other items. The pantry had also applied to receive food from Midwest Food Bank, but they did not have a vehicle to transport it. So, our team arranged a meeting with Nine13, a local non-profit that provides transportation logistics services for some food pantries, to get a quote for delivering food from Midwest to the pantry. Shelva mentioned again how difficult it was to track and manage the inventory in the pantry because SmartChoice's reporting systems are not specific about what dates shoppers will be picking up items, and she has limited storage space and finances and cannot order items ahead of when they are needed. We discussed the concept of shrinking the neighbors' order window from two weeks to two days to try and help with this issue so that she would have a more "real-time" awareness of the pantry's inventory needs and also so that neighbors would have a greater capability to ensure their schedule would allow them to pick up the food on pantry day, hopefully reducing no-shows. Finally, Shelva mentioned being interested in changing the pantry management software from SmartChoice to a more affordable option, so the HCI student on our team researched software that might offer a similar usability for a better price.

During the first four months of 2024, Southeast has given away 52,731 pounds of grocery items and an additional 28,000 pounds of fresh produce to 530 families. We hope our design solution can increase the pantry's capacity by up to 50%.

Value Proposition Statement

During Ideation, we had asked Shelva and the community center stafff to identifiy their goals. They had determined that feeding more people and deepening the relationships with those people were tandem priorities for the pantry. During the Plan & Act Phase, we reviewed the pantry's goals and the results of our prototyping sessions. Then, we went through an exercise to develop a value proposition as we articulated the concepts of our design solution. During this exercise, we defined:

- **The end user**—*Shelva/Southeast Pantry*
- **The job they needed to do**—*Serve more people*
- **The gain or benefit they hoped for**—*Increased Pantry Capacity*
- **The pain point we wanted to lessen**—*Improve food flow through the pantry and reduce the impact of "no-shows"*
- **What our design solution should offer**—*Multi-tiered design solution that starts with not pre-packing orders*

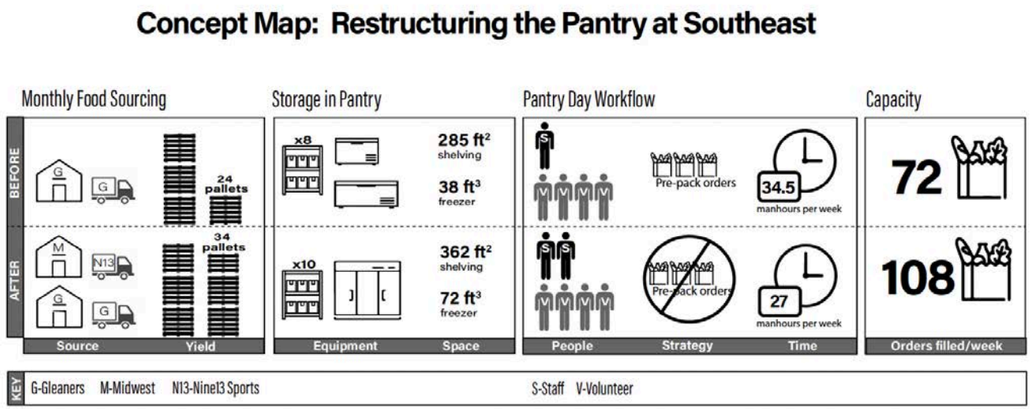
Our **multi-tiered design solution that starts with not pre-packing neighbors' online orders** helps **the pantry serve more people** by **improving the flow of food and reducing the impact of no-shows on pantry day,** resulting in **increased pantry capacity.**

As we finalized the concept, we worked to ensure our design solution would meet the specifications of the value proposition.

Design Solution

Our design solution incorporates many changes in the pantry into a package of solutions we call “Restructuring the Pantry at Southeast.”

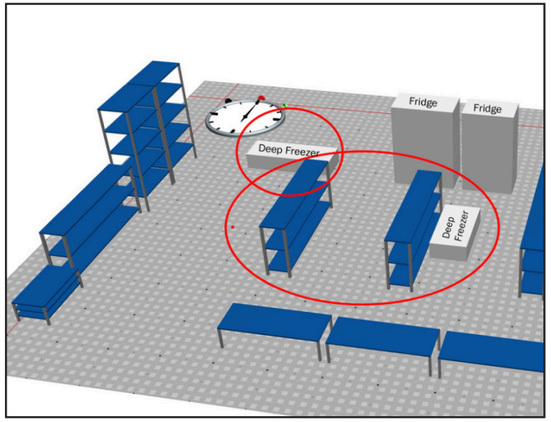
In order to accomplish the goal of feeding more families, the pantry has to source more food on its limited budget. Currently, it spends about $1,000-$1,200 per week and purchases an average of 24 pallets of food per month at Gleaners, which gets delivered by Gleaners. If it gets approved as a partner with Midwest, it can receive up to 10 pallets of food there per month for free. Nine13 will contract with them to deliver the food to the pantry at a cost of $500 per month. This seems to be a promising way to increase the food sourcing significantly with minimal additional cost.



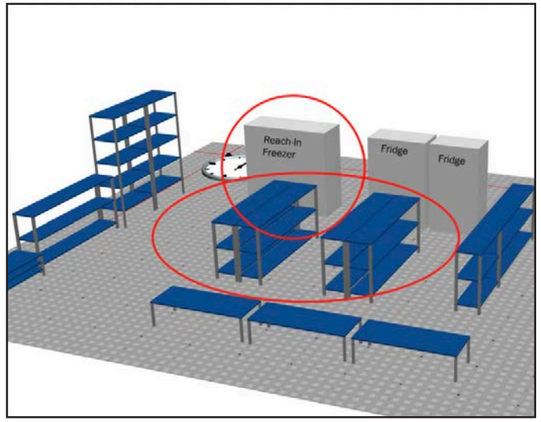
Our concept comes in three parts: Increase food sourcing, increase the storage space in the pantry, and change the workflow to accomodate more shoppers. Altogether, the pantry’s capacity can be increased by 50% using this concept.

Once the pantry is sourcing additional food, it needs a place to store that food before it is distributed. Our design solution proposes replacing the existing chest freezer and freezer table with an upright, commercial glass door freezer. This appliance will almost double the storage capacity and require less floor space in the pantry, allowing room for 27% more shelf space to be added.

BEFORE



AFTER



After our paper prototyping, the engineering student on our team created these 3D renderings of the pantry before the design solution and after. The red circles indicate the areas where changes would be made. *Renderings courtesy of Joshua Lazenby, Bachelor of Science in Engineering Candidate.*

Regarding workflow, Shelva chose to implement “No Pre-Packing,” which uses the same number of staff and volunteers as the previous process but requires less of their time before and after the pantry is open. A Coach from the community center was also able to join for pantry day to help facilitate relationships with neighbors in this new scenario, adding one additional staff member to the number of workers. Even with the addition of an extra person helping, the total number of manhours required remains lower with this solution because of the change in workflow before and after the pantry is open. This model also allows workers to pack orders more efficiently, creating the opportunity to serve more people on a given pantry day without increasing the hours of operation.

Implementing these changes in the pantry in food sourcing, storage, and workflow will allow Southeast to move from serving 72 families per week to serving 108 families per week. We feel that if Shelva moves forward with the additional steps of shrinking the order window neighbors currently have between when they place and pick up their orders from the current time of two weeks to two days, it will also help better manage the inventory, optimize the client experience, and reduce the number of “no-shows” due to schedule conflicts and planning difficulties, since people are likely more in touch with their schedules, food needs, and ride availability in a narrower timeframe.

The following pages detail the experience the workers in the pantry would have while operating the new design solution and give a blueprint for the tasks that would be need accomplished during each phase of the neighbor’s interaction with the pantry as they sign up for services, log into the website, order food, and come to the pantry to pick it up.

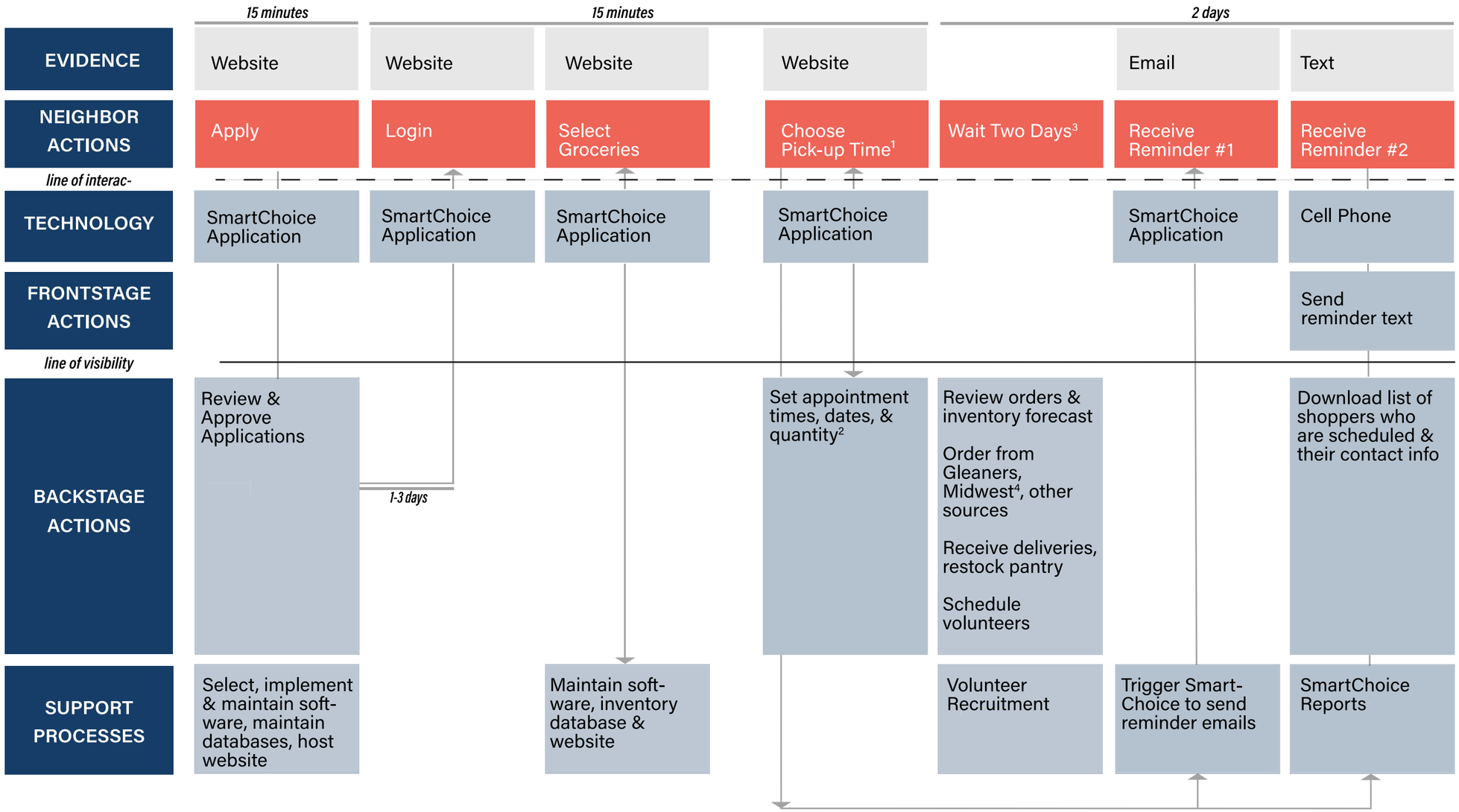
SOUTHEAST EXPERIENCE MAP

PHASES	BEFORE			DURING		AFTER
	PANTRY ADMINISTRATION	FOOD MANAGEMENT	PREPARATION	CHECK-IN	GROCERY PROCESS	AFTER
ACTIONS	**Manage Organization Operations** ▪Manage budget *Apply for Grants *Research Software & Food Sources **Manage Volunteers** ▪Recruit *Retain **Process Client Applications** **Work with Community Partners** ▪Discuss & evaluate service design ▪Co-operate for funding ▪Solicit donations *Partner with Midwest & Nine13	**Stage Pantry Environment** *Change freezer type *Order new shelving **Engage Suppliers** ▪Place orders ▪Receive Food *Order from Midwest & possibly other suppliers beside Gleaners **Manage Inventory** ▪Re-stock shelves	**Manage Volunteers** *Arrive just a few minutes early ▪Assign positions *Pack 3-4 orders to get ahead before neighbors arrive **Create Welcoming Environment** ▪Send client reminders ▪Ensure parking safety **Print Online Orders**	**Manage Queues** ▪ Manage parking lot ▪ Manage walk-ins **Verify Client Data** *Coaches (staff) greet neighbors *Coaches update contact & family information	**Connect Clients to Additional Services** *Coaches assess neighbors' needs briefly to connect them with additional services **Pack Pre-selected Orders** *Pack orders as neighbors arrive to pick them up **Grocery Transport** ▪ Transport items to car ▪ Load Client car **Restock Items if Available**	**Manage Organization Operations** ▪ Process attendance data ▪ Contact no-shows **Manage Inventory** ▪ Re-stock shelves **Clean** ▪ Follow health guidelines **Lock up**
PAIN POINTS	**Small Staff** **Volunteer Reliant** ▪ Attrition ▪ Older volunteer population with inconsistent attendance due to travel	**Limited Physical Space** **Insufficient Transportation** **May be mitigated by new relationship with Nine13 **Technical Challenges** ▪ Online ordering system clunky ▪ Inventory management shortcomings **May be addressed by reducing two week order window	**Worker Attrition** **Language Barriers**		**Language Barriers** **Inconsistent Inventory Accuracy** **Shrinking pick-up time will address this issue **Inconsistent Order Size** **Choice Model Creates Inventory Flow Issues** **Shrinking pick-up time will address this issue	**Client No-Shows** **Impact of this issue may be significantly reduced by design solution

*Indicates new task or practice related to the design solution
**Indicates issue addressed by design solution

Last fall, the Design Team mapped the common experiences of staff and volunteers at three pantries in Indianapolis, including Southeast (See Vol 1, Fig 3). This experience map conveys the changes that our design solution has created to the workers' experience at Southeast specifically and indicates issues that were identified in the fall semester that have been mitigated or addressed by the design solution.

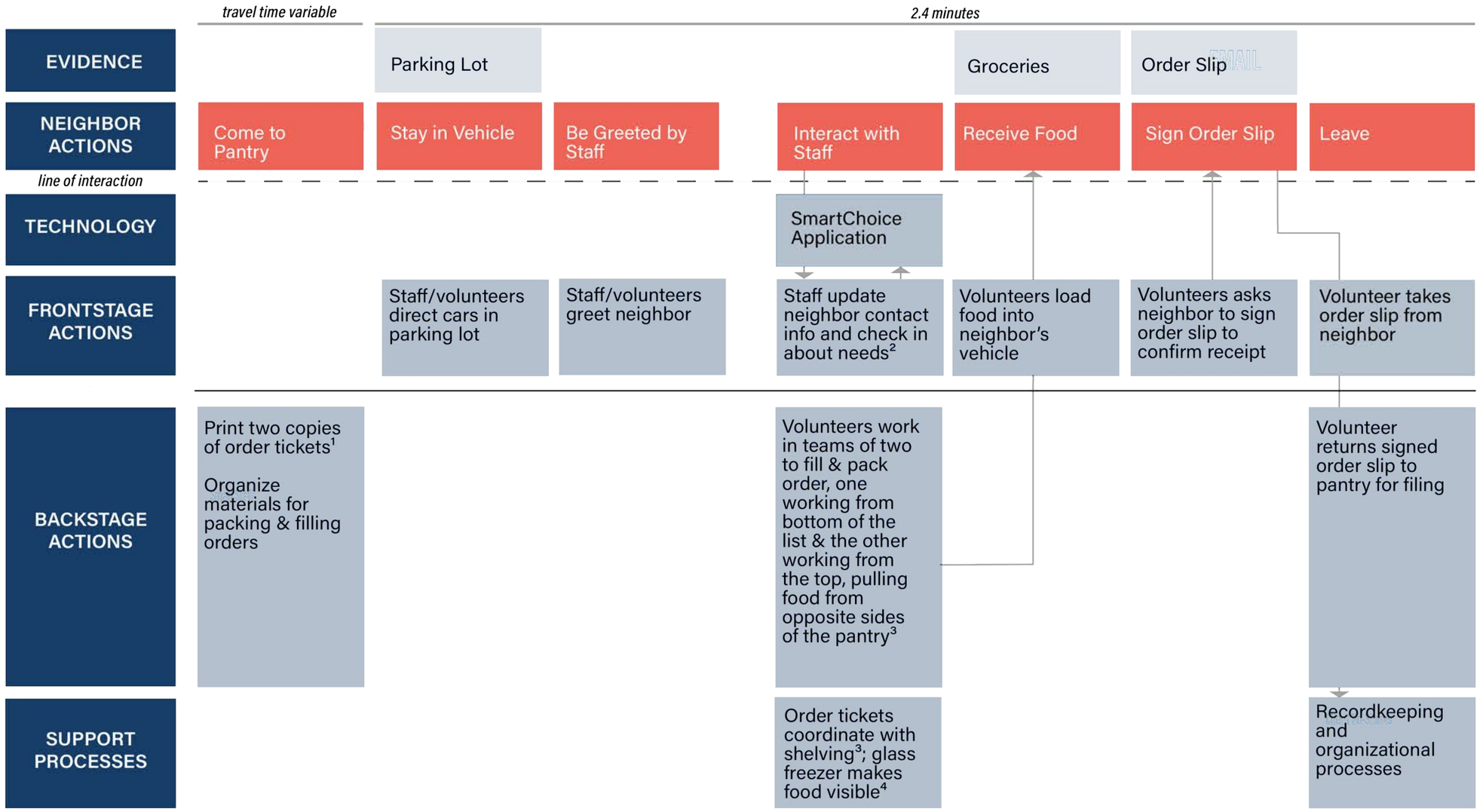
SOUTHEAST SERVICE BLUEPRINT *Before Pantry Day*



Footnotes indicate areas where changes would occur due to design solution. [1]Increase in number of pick-up times available. [2]Pantry will make changes in the software to create additional pick-ups. [3]Pick-up wait time reduces to two days from 14 days. [4]Pantry would partner with Midwest to procure more food, using Nine13 to transport it.

Before Pantry Day, neighbors go to the Pantry's website and log into the SmartChoice application to apply for services. Once approved, they use the application to shop for groceries and schedule a time for pick-up. Neighbors receive a reminder email as well as a text reminder. This service blueprint details the change in workflow and neighbor experience due to the design solution.

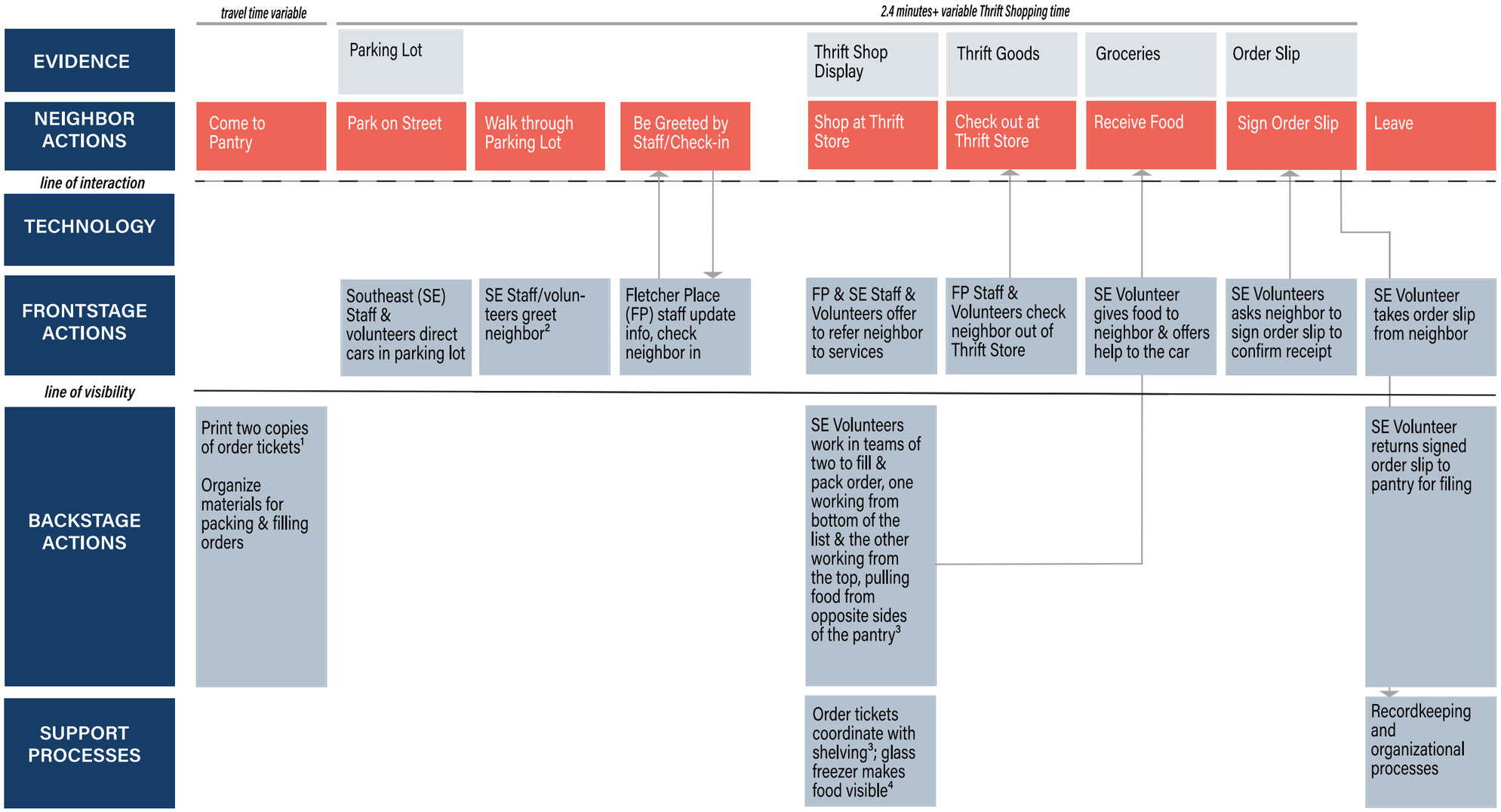
SOUTHEAST SERVICE BLUEPRINT *Pantry Day Drive-Thru*



Footnotes indicate areas where changes would occur due to design solution. [1]Print two copies for volunteers to work in teams of two. [2]Community Center Staff will integrate into pantry for referral services. [3]Items on order tickets organized by location tags of pantry shelving. [4]Commercial glass-door freezer increases usability/accessibilty for volunteers.

Once neighbors arrive at the pantry to pick up their groceries, they have two options. They can either utilize the drive-thru and stay in their vehicle, or they can park on the street and come inside to shop at the thrift shop while their grocery order is being prepared. This blueprint details the drive-thru process.

SOUTHEAST SERVICE BLUEPRINT *Pantry Day + Thrift Shop*



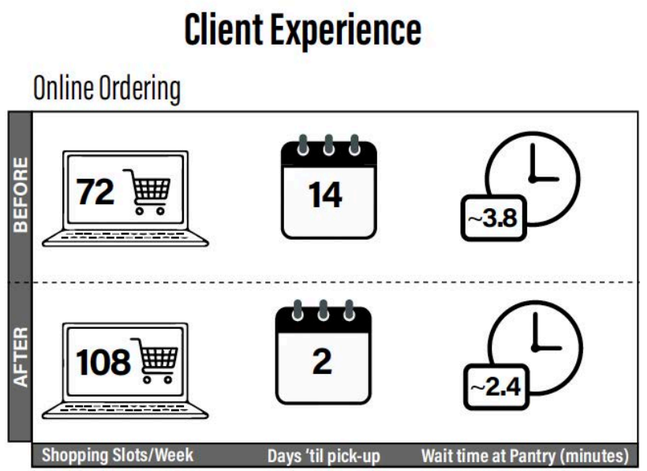
Footnotes indicate areas where changes would occur due to design solution. [1]Print two copies for volunteers to work in teams of two. [2]Community Center Staff will integrate into pantry for referral services. [3]Items on order tickets organized by location tags of pantry shelving. [4]Commercial glass-door freezer increases usability/accessibilty for volunteers.

Once neighbors arrive at the pantry to pick up their groceries, they have two options. They can either utilize the drive-thru and stay in their vehicle, or they can park on the street and come inside to shop at the thrift shop while their grocery order is being prepared. This blueprint details the process for neighbors to park and visit the thrift shop.

Discussion

Implementing the multifaceted design solution we called “Restructuring the Pantry” at Southeast will increase the pantry’s capacity from 72 families per week to 108 families per week, achieving a goal for the pantry of serving more neighbors. Our design solution will also have a positive effect on the neighbors’ experiences as they are served by the pantry

Once the design solution is implemented, neighbors will have 50% more shopping slots available each week.



Once the design solution is fully implemented, neighbors will have 50% more shopping slots available each week, increasing the chances that they will be able to find a shopping slot when they log on. They will also be able to pick their food orders up in two days instead of two weeks, making their access to food more immediate and requiring less extensive planning. Once they come to the pantry, they will see a shortened wait time—reduced from 3.8 minutes to 2.4 minutes on average. In addition to these changes, they will also have more interaction with staff (Coaches) from the community center who can hopefully build relationships with them, which could lead to opportunities for growth, employment, etc. .

We created an implementation plan to document the steps needed to execute the design solution and indicate the progress we made by the end of the semester. Hopefully, this guide can be used as a tool to continue the work of the design solution.

SOUTHEAST IMPLEMENTATION PLAN

Action Steps to Implement Design Solution	Responsible Party: Southeast	Midwest	Nine13	IUPUI/ IUB Team
1. Implement "No Pre-Packing" Strategy	●			
2. Apply for services with Midwest	●			
3. Approve pantry for services with Midwest		○		
4. Arrange meeting between pantry & Nine13				●
5. Produce quote for services thorugh Nine13			○	
6. Apply for funding to update freezer & storage & procure more food	●			
7. Purchase freezer & shelving once funds are available	○			
8. Purchase additional food once funds and storage/transportation are available	○			
9. Increase number of pick up slots in SmartChoice	○			
10. Change wait time for pick ups	○			
11. Integrate Community Center Staff/Coaches into Pantry Day	●			

Status: ○ Incomplete ● Complete

Shelva, Southeast's team of volunteers, and the Coaches from the community center have already begun to implement the "No Pre-Packing" part of this solution, and they are seeing some benefits from the decrease in manhours needed to run pantry day, the reduced impact of "no-shows" from not having to re-stock the shelves from unclaimed orders, and from the increased interaction the coaches are able to have with neighbors as they arrive at the pantry.

Shelva has applied for grants to make the physical adjustments to the pantry and to source more food so they can increase the number of shopping slots available. The design solution will be limited in its effectiveness if the pantry is unable to source and transport more food, store the additional food, and/or reduce the order window for neighbors (as that is the key to better understanding and managing the inventory needs).

Beyond the design solution we developed, Shelva is continuing to look at new software options for the pantry that would save money with similar utility so that she can reallocate funds toward the purchase of additional food. Freeing up those resources will be an important source of growth for the pantry. The HCI student on our team conducted a software analysis for her to provide information as she plans to look for a new provider.

COMPARATIVE ANALYSIS

Feature	Food Pantry Helper	Food Ready AI	Pantry Soft	Plan Street	Food Bank Manager	Food Pantry Pro
Inventory Management	✓	✓	✓	✓	✓	✓
Client Management	✓	✓	✓	✓	✓	✓
Distribution Management	✓	✓	✓	✓	✓	✓
Reporting & Analytics	✓ (Basic)	✓ (AI-Powered)	✓	✓	✓	✓
Volunteer Management	✓	✓	✓	✓	✓	✓
Donor Management	✓	✓	✓	✓	✓	✓
Price Comparison	Low (Starts at $59/yr)	High (Variable)	Medium (Variable)	Medium (Variable)	Low (Starts at $20/month)	Medium (Variable)
Funds Available	Budget-friendly	High budget needed	Consider budget	Consider budget	Budget-friendly	Consider budget
Prioritization	Good for small pantries	Ideal for large pantries with complex needs	Good for mid-sized pantries	Good for mid-sized pantries	Good for small pantries	Good for mid-sized pantries
Efficiency & Ease of Use	Very easy to use	Easy to use	Easy to use	Easy to use	Easy to use	Easy to use
Stakeholder Management	Basic communication features	Advanced communication & reporting	Basic communication features	Basic communication features	Basic communication features	Basic communication features
User Friendly	Very user-friendly interface	User-friendly interface	User-friendly interface	User-friendly interface	User-friendly interface	User-friendly interface
Forecasting & Order Management	Basic forecasting	Advanced AI-powered forecasting & ordering	Basic forecasting	Basic forecasting	Basic forecasting	Basic forecasting

Comparative Analysis of software applications, courtesy of Radhika Bhoj Master of Science in Human-Computer Interaction candidate.

In the future, Shelva and Southeast Community Services hope to scope the work of the pantry beyond its current offerings and expand to serving even more neighbors in new and different ways. If Southeast can find funding and resources to expand the pantry, the community center may want to operate a new model to combat the neighborhood's food desert. They are contemplating a bodega/coffee shop concept where anyone in the neighborhood could purchase food items and the profits of that endeavor could support neighbors in need shopping for free.

It will be exciting to watch what develops as this group of capable people with a strong caring culture continues to evolve their model to serve the needs of their community.

The welcoming entrance to Southeast Food Pantry on a sunny afternoon in April 2024.