Checking In?

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Every weekend hundreds of children participate in the Sunday school program at our church. Although our manual system for checking in children worked, too much time was spent on the preparation of the materials needed for the weekend check-in and long lines would build at the check-in stations. After the weekend, more time was spent manually recording the attendance of each child into an Access database for reporting purposes. Over time, various changes were implemented in an effort to improve the overall process. At one point pagers were issued to the parent, however they were later eliminated for a variety of reasons.

After hearing about successful implementations of more automated, electronic check-in systems, our Children's department asked us to create a new system for them.

Design

The new system was designed to reduce waiting in line, reduce or eliminate administrative tasks, and increase certain security aspects. In a nutshell our Children's department idea was to have parents check-in using one of several kiosks strategically located on campus and then drop off their children at the appropriate classroom. In the classroom the parent would receive a claim card, and a matching attendance label would be stored in an attendance book for use during the checkout process. Sounds fairly simple…

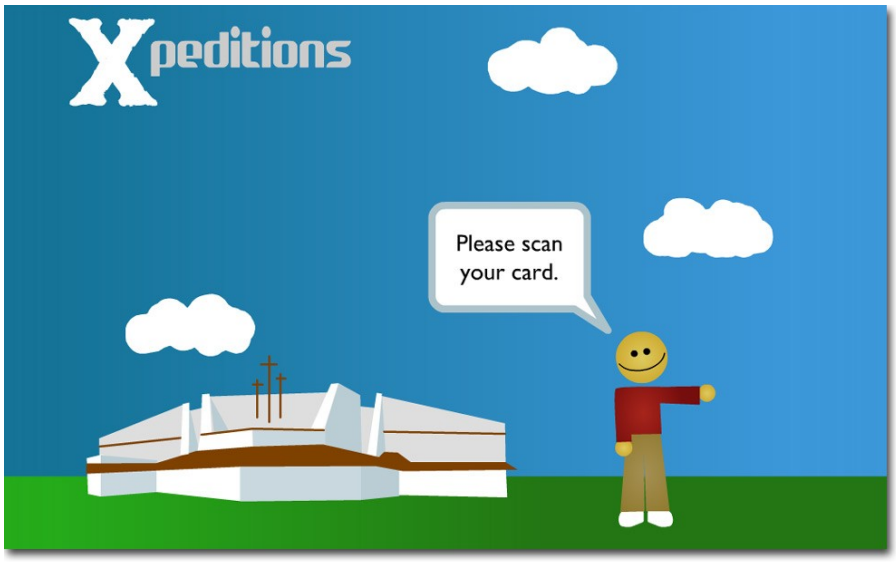
We considered several possible designs for how a child's classroom might be dynamically determined based on variables such as age, gender, number of teachers in class, number of children in the class, teacher to child ratio, classroom status (open, closed, full), etc. However with each variable came additional complexities and additional people processes would be needed to ensure the system would function properly. In the end we decided to keep the first version of the new system as simple as possible.

The business rules associated with the room selection were placed into a 'classroom selection engine' that could be changed for a later revision without much hassle. Without going into all the boring "business logic" details, let me simply walk you through what a parent sees when they are checking in their children.

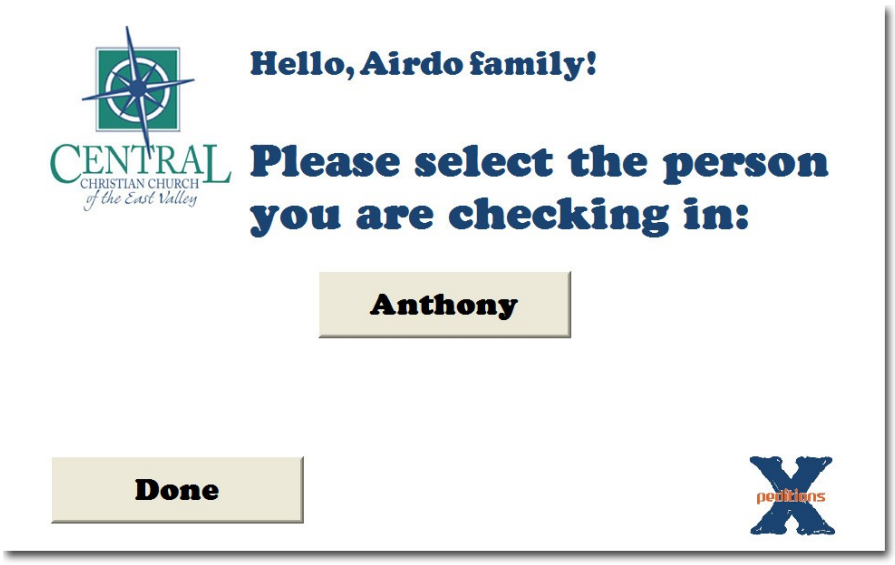
Walkthrough

Each family whose children participate in Sunday school was issued three small key tags with a bar-coded family ID similar to those used by many grocery stores.

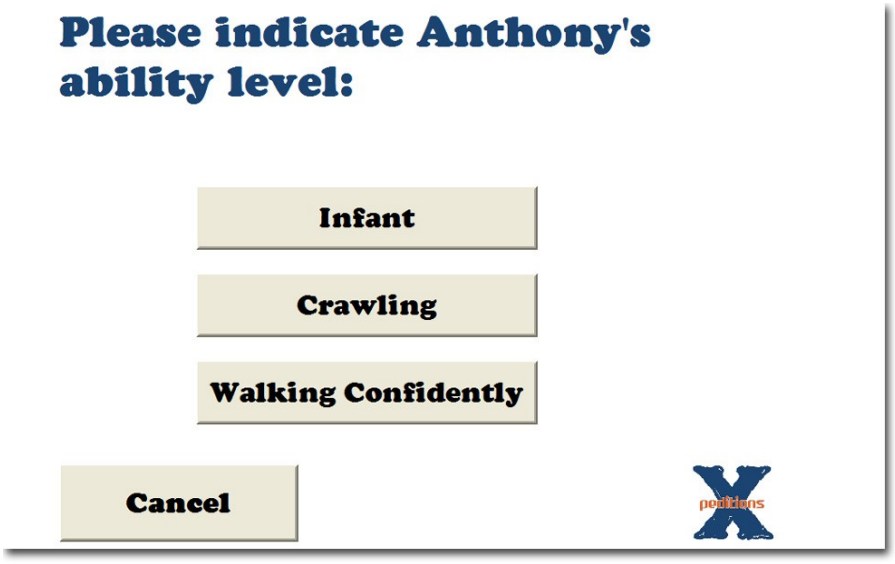
First the guardian/parent walks up to a check-in kiosk (a touch screen and a barcode scanner) and scans their key tag.



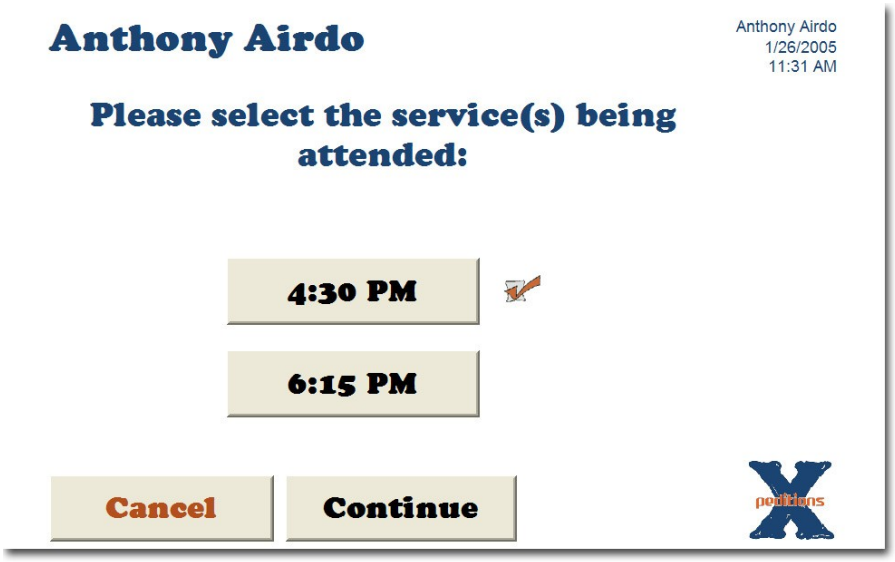
The system locates and displays the family members that are within the appropriate age range. Next, the parent selects the name of the child they are checking in.



If the child is not yet walking, they are given the opportunity to record their child's ability level. This information is stored and used to determine which classroom the child should go to.

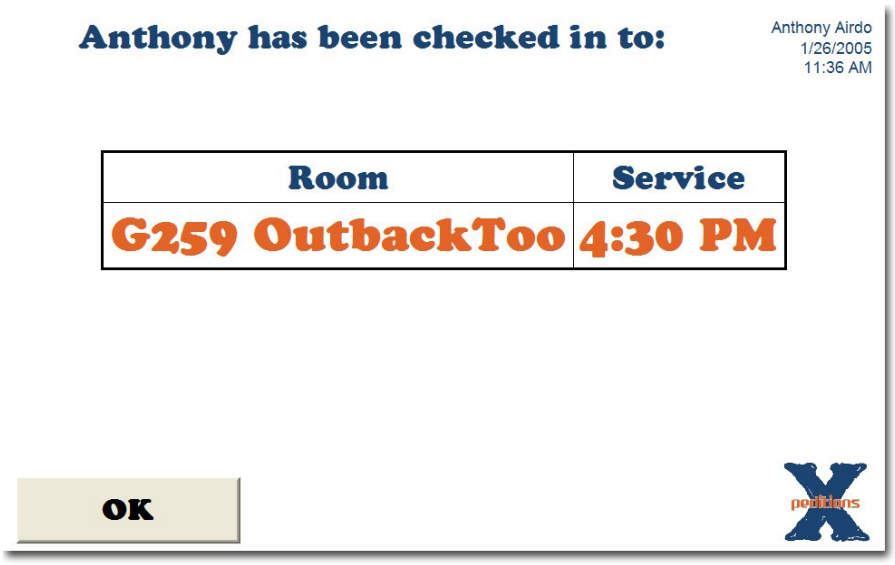


Next, the parent selects the upcoming service(s) they are attending.

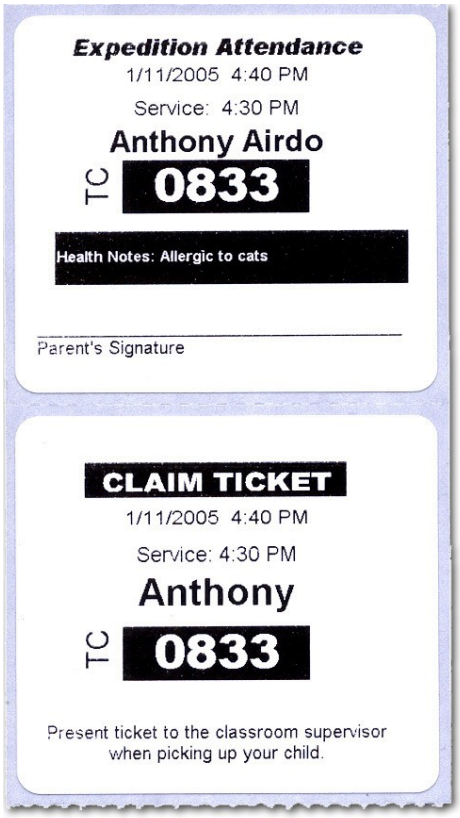


If a matching classroom is found a confirmation screen is shown.

The child is checked into the classroom and the attendance is recorded. By the time the parent and child arrive at the classroom a claim card is waiting for them along with an attendance label for them to sign.



The attendance label and claim card have a matching string (two characters and four digits) that is used for verification during the checkout process.



In the event that the child's parent need to be contacted during service, the four digit number is broadcast to our Guardian Notification system – a set of LED display panels strategically located throughout the rooms on campus.

Lessons Learned

One of the philosophies we tried to adhere to is the Don't Make Me Think concept written about by Steve Krug, a highly respected usability consultant. We wanted to eliminate unnecessary words and choices on each screen. The first few times a parent uses the kiosks, they are a slower at checking in as they carefully read everything and decide which button to press. After the third or fourth weekend, most are able to fly through and check in multiple children in less than 15-30 seconds.

Although we all liked orientation of the barcodes that were printed on the key tags, we believe the scanners we are using would prefer that the barcode be stretched out across a larger area.

It has not presented itself as a problem yet, but I think it also would have been better to design the code to be able to utilize multiple printers in each room – perhaps using a round-robin approach. The Zebra LP2824 label printers we use seem to print about one label set (claim card and attendance label) every 6-10 seconds or so.

Summary

In the end, creating our new check-in system required the talents of multiple people to handle things like label printer research and setup, network wiring, LED display technology, PC/kiosk setup and installation, not to mention the actual database and coding tasks.

There is no single "right" way to design an electronic check-in system. It should meet your needs without having to implement drastic changes to your children's ministry. As our church finds limitations and faults with this new system I will do my best to update you with our findings so that you can learn from our mistakes.