The Stable Scheduling Study
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Acknowledgements

IMPROVING WORK-LIFE FIT IN HOURLY JOBS:

AN UNDERUTILIZED COST-CUTTING STRATEGY IN A GLOBALIZED WORLD

WORK LIFE LAW
UC Hastings College of the Law

Just-in-time schedules

- ## Computer generates schedules based on associates' availability
  - ### 3-7 days' notice of schedules
  - ### Hours differ every day of the week
  - ### Days differ every week of the year
  - ### On-calls
  - ### Part time, often short, hours

- ## 94% of managers hire for open availability
  - ### People often patch together several PT jobs

Lambert, 2009

Front-end labor costs

- Just-in-time scheduling: analogy to just-in-time inventory

- Focus on driving down front-end labor costs
  - The goal: tight fit between labor supply and labor demand
  - So if it rains and there are fewer customers, send people home or cancel shifts
  - On-calls to ensure labor at short notice

- Flawed analogy: *people aren't machines*

Williams & Huang, 2011

Back-end labor costs

- Absenteeism
- Turnover
  - 100%-500% annually
    - People quit when they find a job with FT or more PT hours
- Constant hiring
- Time consuming to do the schedule

Williams & Huang, 2011

Back-end labor costs

- Poor execution

- Low worker engagement

- Inadequate knowledge of product & procedures

- Current model counts savings but not costs

- *Flawed business metrics*

Ton, 2014; Williams & Huang, 2011

Prior research on lean scheduling

- "Employees rushing, taking shortcuts, unable or unwilling to spend time with customers. We will have stores with misplaced products, messy shelves, long checkout lines, a lot of wasted inventory, and a lot of unhappy customers"

Ton, 2014, p. 158

Stable Scheduling Study

- Why study schedules?

- What makes SSS unique?
  - Experimental design
  - Only prior experimental study gave more notice of unstable schedules
  - SSS: goal was to change entire ecosystem of instability
  - Evaluated the experience at a variety of levels
    - Senior leadership
    - Store managers
    - Associates: focus groups and 2-wave survey
    - HR, analytics; marketing, finance, supply chain

Data components

1. **Monthly personnel data**
   - Demographic information on all employees in the stores in the experiment

2. **Time-clock data**
   - Times each employee clocked in and out each work day

3. **Weekly posted schedules**
   - The schedule published by managers

4. **Detailed sales and traffic records**
   - Sales and traffic recorded in 15-minute increments

5. **Shift Messenger transaction data**
   - Every shift posted and picked up and by whom

6. **Monthly manager surveys**
   - Surveys asking about scheduling practices and challenges

7. **Employee surveys (baseline and post-intervention)**
   - Surveys asking about employees' work schedule, organizational commitment, and health and wellbeing

8. **Biweekly manager interviews**
   - Check-in interviews with store managers discussing the implementation of the Intervention

9. **Monthly focus groups with sales associates**
   - Discussions with associates focused on implementation of the Intervention
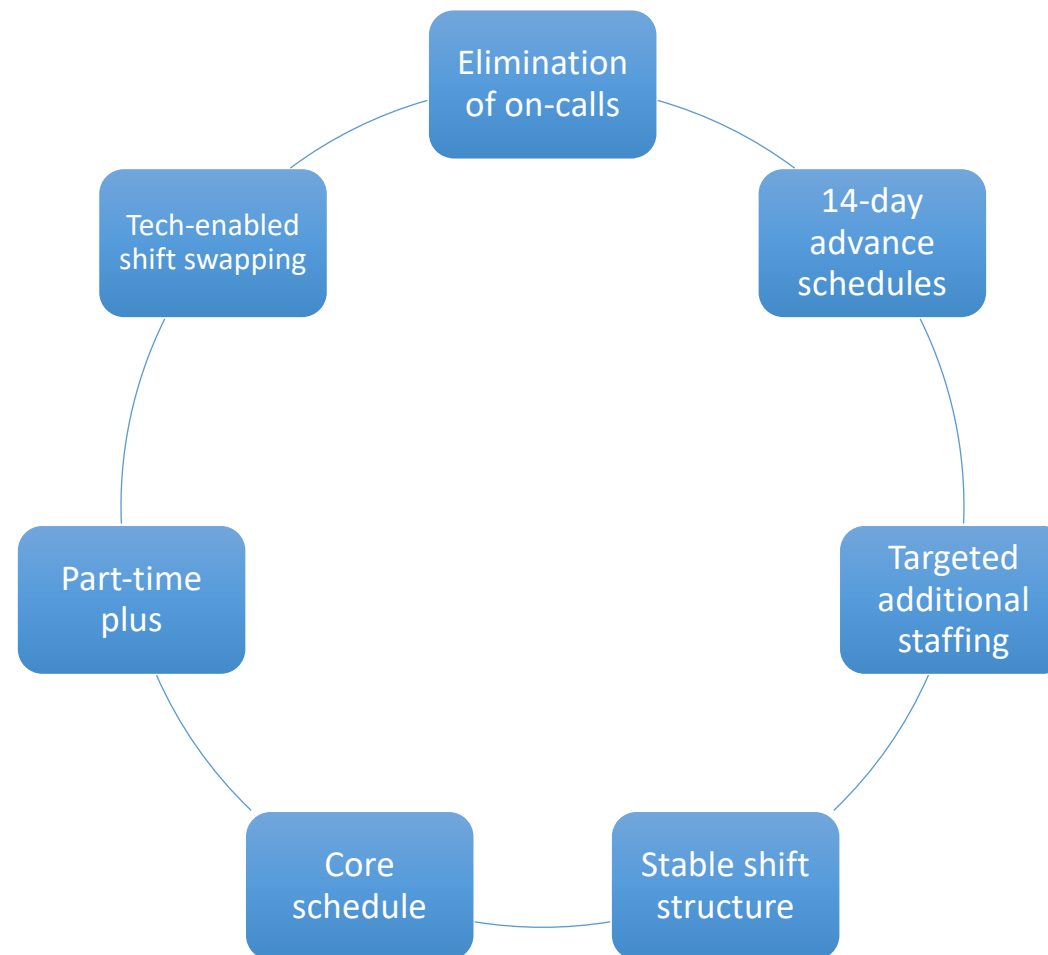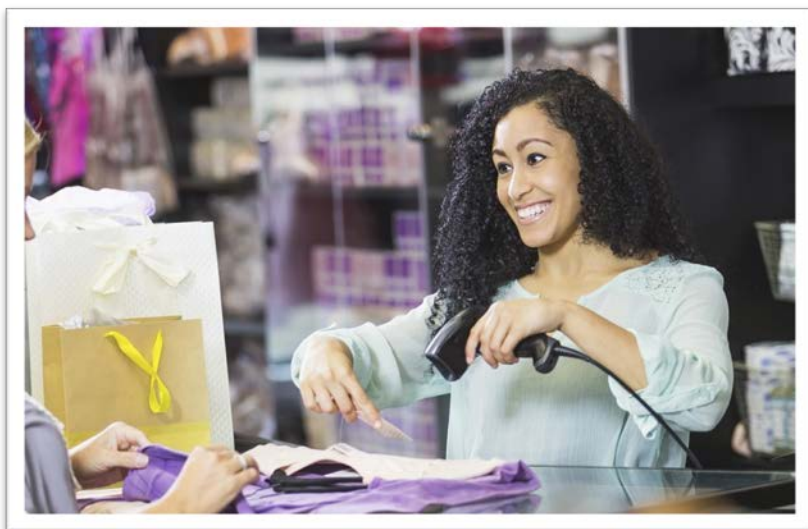
Who worked in the stores?

- Total of 2,331 employees in 28 stores

- How long had they worked in the stores?
  - 1/3 < 6 months, 1/3 6 -24 months; 1/3 of associates > 2+ years

- 1/3 white, ¼ African American, ¼ Hispanic, 14% Asian, 2% Native American

- ¾ female

- ¼ under 20, ½ 20-29, ¼ 30+ years old

- Only 5% of associates worked full time

Sequence

- Gap's system: computer-generated schedules

- 3 month pre-pilot…took 8 months!
  - Tried four different systems for tech-enabled shift swapping
  - Shift Messenger

- After pre-Pilot, two interventions were rolled out in all U.S. stores
  - Elimination of on-calls
  - 14-day advance scheduling

Intervention design

- Elimination of on-calls
- 14-day advance schedules
- Targeted additional staffing
- Stable shift structure
- Core schedule
- Part-time plus
- Tech-enabled shift swapping

Changing the ecosystem

- Elimination of on-calls and 14-day notice took away tools managers use to cope with uncertainty

- The five other elements provided managers with alternative tools to achieve the coverage they need

How the interventions worked together

- SM eased impact of elimination of on-calls & 14-day scheduling

- Many managers: *dramatic* decrease in # of hours spent on scheduling

"Without Shift Messenger, I would probably wish we had the on-call shifts. Sometimes I do miss them, but I think we have Shift Messenger, so it kind of fills in that void."

Elimination of on-call shifts

- Last-minute schedule changes can occur, but only with employee consent

"We're better prepared for things versus just throwing in on-calls…We plan more for what could potentially go wrong. We've just started to implement the attendance policy better, and employees are more mindful themselves about what happens when someone doesn't show up."

- Store 17, January 2016

14-day advance notice

- Scheduling managers required to finalize and publish associate work-schedules at least 14 days in advance

- Associates must request planned time off at least 14 days in advance as well

"We have a calendar for the year, (workload, flows), but no one ever looked ahead. I would look for the week, but now it forces me to look out even further than 2-3 weeks. I am more able to plan things. That is the norm now. Weird now to think I only looked out 1 week ahead before."

- Store 30, May 2016

Pressure to comply

Employees who agree they receive fewer hours if they say no to management requests to change their schedule:

	Control	Treatment
Wave 1	27.59%	25.85%
Wave 2**	32.09%	23.68%

Employees who agree they feel pressure to stay late when asked to do so by managers:

	Control	Treatment
Wave 1	62.76%	48.31%
Wave 2**	55.97%	38.16%

** = Statistically significant

Early apprehension quickly dissipated

- Some managers initially expressed apprehension about elimination of on-calls and advance notice
  - Soon most managers did not miss either

- Apart from 3 outlier stores, nearly 90% of schedules were published at least two weeks in advance during the first three quarters of 2016.

- Ultimately, Gap reduced the Advance Notice policy from two weeks to ten days at the study's conclusion (except in SF).

Targeted additional staffing

- Algorithm identified key periods of sales associate understaffing
- Increase staffing on the floor during peak hours
- Analyze the return on investment of additional staffing hours

With the additional hours, we are "focusing people's energy more onto the sales floor [and] seeing a big return on that. If someone is more available to help people on the floor when they come in for a return, for example, they sell through the hours well."

- Store 90, March 2016

Stable shift structure

- Establish recurring shifts that are consistent day to day *(eg: Early AM, AM, Mid-day, Early PM, Close)*

- Manager sets firm start-times and end-times for each shift

- Goal: same start and end times for *majority* of scheduled shifts

"The stability went down quite a bit because it's summer… so lots of people are traveling and we have to move things around. I really hope we go back soon to 50 – 75% stable shift structure, like we had before, because it makes my life so much easier."

- Store 40, June 2016

Core schedule

- Identify employees who can consistently work specific shifts on specific days of the week

- Assign the same people to the same shift on the same day each week for a majority of shifts

- Create tools that allow managers to reuse the same schedule each week, making only minor edits

"It has made things faster…. It gave me a place to build from. I had core opener, and core closer and I could build off that. When I was gone for two weeks one time, I had my schedule manager just use the core schedule and build from there…. "

- Store 21, August 2016

Part-time plus

- Identify key staff members (usually high-performing individuals, with consistent availability)

- Guarantee these employees a minimum of 20 hours/week

"When you have a core group of people they really have a higher commitment to the store and they have more knowledge. Issues that come up they're aware of. They know how to handle things. Also they're more engaged. They know more about the business and they're able to speak to things. They know where product is too. They add an adaptability factor"

.- Store 90, August 2016

Tech-enabled shift swapping

- Identify a tech-enabled tool that permits peer-peer communication and shift swapping coordination capacity

- Train employees and managers on selected tool

- Deploy tool across all participating stores

"Really starting to like it…It's becoming really popular and employees are using it successfully to swap shifts. They're even leveraging the chat room function to share information with employees; the team coordinated a holiday-adopt-a-family over the chat function!"

- Store 31, December 2015

Stable Scheduling Study

- Four different dimensions of stable scheduling
  - Control
  - Predictability
  - Stability
  - Adequacy

Stable Scheduling Study

- We improved three
  - Control
  - Predictability
  - Stability
  - Adequacy

- Modest improvement

More scheduling stability increased sales

- Sales in intervention stores increased by 7%
  - Improved conversion
  - Higher basket values
- Labor productivity increased by 5%
- Gap spent $31,200 to fund TAS; intervention stores made $2.9 million in increased revenues
- Would increased stability increase revenues even more?
- We don't know. But one thing we do know:
- Not in the stability sweet spot

If it's more profitable, why aren't retailers already doing it?

Misaligned incentives

- Labor accounts for 85% of controllable costs in retail
- When finance needs to make its numbers for the quarterly report, the obvious fix is to cut labor hours
- Decreased sales may result, but finance makes its numbers

- Also, decreased sales effect is invisible
- Because this year's staffing starts from last year's, so fact that sales last year were artificially depressed due to unstable scheduling is an error that is passed through from year to year

Agency misattribution

- Purveyors of scheduling software market "science"
  - "Our workforce scheduling solutions use data from your key business systems to create demand-based schedules avoiding any over or understaffing."

  - "Emotional feedback from the field must be vetted through sampling and analysis, and retailers must guard against making knee-jerk changes to the labor model based on anecdotal evidence." (Kronos)

- "Emotional scheduling"

Hidden costs of unstable scheduling

- Poor execution
  - More stable scheduling improved customer service, decreased "phantom stockouts," reduced theft, improved associates' ability to arrive on time
- High turnover
  - More stable scheduling improved retention among more experienced associates
- Time spent managing schedules
  - Time spent in one large store decreased from 3 days to 4 hours
- Low-availability workforce
- *Unstable scheduling looks good because its true costs are hidden*

Sources of instability

- Assumption: instability stems from fluctuations in customer demand
  - Finding: only 30% does
- Some comes from associates, but a lot comes from HQ
  - Marketing
  - Supply chain
  - Leadership visits

Ton, 2014; Williams et al. 2018

Marketing

- "Promotions changing is the main driver of managers having to make schedule changes."

- "It's just been a roller coaster with promo changes. This week alone the window changed three times."

- "There were four promo changes for this week."

Shipment

- "Way more shipments are coming than what is predicted. This is the biggest operational issue we are facing."

- "This morning we came in to find out how many boxes we had. We were left in the dark."

- "We usually can only get an accurate number two days before the shipment comes."

Leadership visits

- "They changed a visit from Monday to Thursday and I only found out on Saturday. I made the schedule two weeks ago for extra help on Sunday, but now I have to change it."

- "We got four day's notice [for this visit]. I had to add in 100-150 hours."

- "Probably extended 2-3 shifts every day in the run up to the visit."

Shifting to stabler scheduling is a complex change management issue

- We shared a common assumption: we could change schedules with a store-level intervention

- In fact, a lot instability stems not from stores, but from HQ

- A truly successful intervention would involve several different departments: HR, operations, finance, marketing, supply chain, leadership

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