Contact Tracing: Driving Participation, Scale, and Innovation through the Mobility Framework
Dr. Trish Holliday

Leadership and Learning Strategist, Executive Coach
Founding Partner, HOLLIDAY | KENNING

TWITTER:@HollidayTrish

#ACTWebinar     #SafeMobility     #GetMovingAgain     #LetsHytch     #SmartCities     #TDM     #Mobility
1. Can we target two birds - COVID recession and traffic - with one stone? Mark Cleveland

2. Can leadership make a difference? Martin O’Malley

3. Can data really drive decision-making? Dr. Charles Apigian

4. Can incentives really drive behavior change? Michael Skipper

5. Can mobility tracking improve quality of life? Aaron Steiner

6. What’s culture got to do with it? Dr. Trish Holliday
Co-founder @Swiftwick & @HytchRewards. Investing in US domestic manufacturing for 15 years. Rotarian, technology entrepreneur in #Nashville, loves sky diving & scuba, craft beer, cycling & Oregon Duck games
Less than 10 percent of survey respondents believe carsharing, ridesharing, or shared micromobility to be safe.

Perceived health safety of mobility modes, % of respondents

- Private vehicle: 81%
- Walking or private bike: 55%
- Shared micromobility: 8%
- Public transport: 7%
- Carsharing: 5%
- Ridesharing: 5%
- None: 5%

Source: McKinsey Global COVID-19 Automotive Consumer Survey (first 2 parts of ongoing survey conducted May 9–17 and May 23–31, 2020, respectively, each with >8,000 respondents across 7 countries)
Safe at Home - Safe at Work

Shelter in Place  
(tap to start)

Safe to Work  
(tap to start)
Covid-19 Recession

- **Mitigate** curve with social distancing, sheltering in place, contact tracing
- **Allay** fears of returning to work safely
- **Achieve** broad community cooperation
- **Prepare** for multiple waves

Environmental Impact of Traffic

- **Mitigate** congestion with fewer single occupancy vehicles
- **Allay** transportation barrier to employment
- **Achieve** broad community cooperation
- **Prepare** for return of traffic

Two Crises, One Solution

Hyitch™

TDM Platform that offers:

- Employers health tracking data for safe work sites and mobility tracking data for smart commuting
- Employees can carbon-zero commute anywhere in the US
- Participation Solved
- Privacy Solved
- Data Driven Decisions Enabled
Are people willing to share their data for a safer community?

WE SAY YES

Hytch believes that COVID drivin behavior change is proof that leaders can capture and nudge behavior change at scale.
Are people willing to share their data for a safer community?

1. What about Privacy?
2. What drives Participation?
3. Where is the win for triple bottom line Public Policy?
4. How do we connect corporate Environmental Health & Safety (EH&S) initiatives to People?
TO LEVERAGE COVID-19 DRIVEN BEHAVIOR CHANGE WE MUST:

1. Document the **wellness pledge** before a daily commute begins.
2. Offer **shelter in place** incentives.
3. Manage compliance with company-directed **quarantine**.
4. Reinforce **physical distancing** behavior change with reminders.
5. Capture and contribute mobility data to expedite professional **contact tracing**.

Mobility tracking is the glue that makes contact tracing work.
Hytch Commuter Wellness Pledge

Do you have symptoms of fever, cough (excluding chronic cough due to known medical reasons), shortness of breath, sore throat, or diarrhea (excluding diarrhea due to a known medical reason)?

In the last two weeks, did you care for or have close contact with someone diagnosed with COVID-19?

Have you travelled internationally or outside of your state in the last 14 days (excluding commuting from a home outside of your state)?

According to CDC guidelines, answering YES means you should at least maintain safe physical distance from others and avoid commuting. Consider sheltering in place and report your status to your employer for further instructions.

SHELTER IN PLACE
BACK
Hytch is easy to use, implement and leverage.

Hytch certifies origination, destination, mode, occupancy, duration, distance and environmental impact.
Safe Circles for Physical Distancing

Physical Distancing Score: 100%

Amy

Adam

- Broadcasting
- Reminding
- Hytch Sponsored
- Personal Defense
- Private Company App
Safe Circles for Physical Distancing

Physical Distancing Score: 90%

Duration: 1 min
Safe Circles for Physical Distancing

Physical Distancing Score: 60%
Duration: 1 min

Physical Distancing Score: 90%

Physical Distancing Score: 50%
Duration: 30 min

Drew
David
Diane

Broadcasting
Reminding
Hytech Sponsored
Personal Defense
Private Company App
Safe Circles for Physical Distancing

Physical Distancing Score: 100%

Duration: 10 min

Physical Distancing Score: 70%

Broadcasting
Reminding
Hyetch Sponsored
Personal Defense
Private Company App
Governors or Mayors in any state contract for contact tracing support

Cash rewards defined by partners to drive participation in a focused geographic area

In exchange for rewards, users sell mobility data to participate in contact tracing program

Authorized state and local health authorities submit contact tracing request to Hytch from an identified case to obtain mobility record, with locations, modes, dates, etc., and to facilitate the connection with other potentially exposed users.

Citizens can be made aware of being in contact with confirmed Covid-19 cases by highly trained agents of the state.
Rules To Meet Community Objectives

<table>
<thead>
<tr>
<th>EXAMPLE OF AVERAGE TRIP</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impacted Region</td>
<td>1¢</td>
<td>1¢</td>
<td>1¢</td>
</tr>
<tr>
<td>Impacted Corridor</td>
<td>2¢</td>
<td>0¢</td>
<td>0¢</td>
</tr>
<tr>
<td>Equity Communities</td>
<td>2¢</td>
<td>2¢</td>
<td>0¢</td>
</tr>
<tr>
<td>x Distance (miles)</td>
<td>14</td>
<td>8</td>
<td>18</td>
</tr>
<tr>
<td>CASH REWARD</td>
<td>$0.84</td>
<td>$0.24</td>
<td>$0.18</td>
</tr>
</tbody>
</table>
### Rewarding Smart Mobility

#### Rules Applied

<table>
<thead>
<tr>
<th>RULES APPLIED</th>
<th>MARKET TRIP</th>
<th>SPLIT MODE TRIP</th>
<th>EMPLOYER SPONSORED TRIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupancy Count PER MILE</td>
<td>-</td>
<td>.01</td>
<td>-</td>
</tr>
<tr>
<td>Mode</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>Equity Zone</td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time of Day</td>
<td>.01</td>
<td></td>
<td>.01</td>
</tr>
<tr>
<td>Destination</td>
<td>.01</td>
<td>.03</td>
<td>.01/02</td>
</tr>
<tr>
<td>x Distance (miles)</td>
<td>37</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td><strong>Sub Total</strong></td>
<td><strong>$1.85</strong></td>
<td><strong>$0.15</strong></td>
<td><strong>$0.54</strong></td>
</tr>
<tr>
<td>Construction Zone Bonus</td>
<td>.05</td>
<td></td>
<td>.05</td>
</tr>
<tr>
<td>Corridor Bonus</td>
<td>.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL CASH REWARD PER PERSON</strong></td>
<td><strong>$1.98</strong></td>
<td><strong>$0.69</strong></td>
<td><strong>$1.65</strong></td>
</tr>
<tr>
<td><strong>TOTAL PAYOUT FOR TRIP</strong></td>
<td><strong>$3.96</strong></td>
<td><strong>$2.07</strong></td>
<td><strong>$3.30</strong></td>
</tr>
</tbody>
</table>

#### Environmental Impact

<table>
<thead>
<tr>
<th>ENVIRONMENTAL IMPACT</th>
<th>NOx</th>
<th>CO</th>
<th>CO2</th>
<th>PM2.5</th>
<th>PM10</th>
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</thead>
<tbody>
<tr>
<td>Carpool</td>
<td>.010693</td>
<td>.14817</td>
<td>14.948</td>
<td>.000444</td>
<td>.000259</td>
</tr>
<tr>
<td>Construction Zone</td>
<td>.008670</td>
<td>.118230</td>
<td>12.120</td>
<td>.000360</td>
<td>.000210</td>
</tr>
<tr>
<td>Driver left</td>
<td>.009248</td>
<td>126112</td>
<td>12.928</td>
<td>.000384</td>
<td>.000224</td>
</tr>
</tbody>
</table>

#### Trip Description

<table>
<thead>
<tr>
<th>TRIP DESCRIPTION</th>
<th>DETAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carpool departed with 2 participants from Concord equity zone @ 6AM – drove through I-680 Construction &amp; Corridor – arrived in San Jose High Impact Destination Zone @ 8AM</td>
<td></td>
</tr>
<tr>
<td>Carpool departed with 3 participants from neighborhood to BART Station Destination @ 9AM – took BART together during off peak shoulder time into Oakland – arrived at Oakland @ 10:30AM and all walked to final destination</td>
<td></td>
</tr>
<tr>
<td>Driver left San Francisco driving alone @ 6AM – stopped in San Mateo to pick up passenger – drove through I-280 Construction Zone – arrived at Major Employer Destination Geofence @ 7:30AM</td>
<td></td>
</tr>
</tbody>
</table>
CONTACT TRACING: Driving Participation, Scale and Innovation from a Mobility Framework

1. **Inform**
   - Metro Region Public/Private Partnerships

2. **Define**
   - Desired Commute Behavior

3. **Develop**
   - Reward rules are conditions that create Desired Habits

4. **Pay**
   - Incentives acquire data, create evangelists and drive participation

5. **Track**
   - State authorized mobility log access as a Health Department resource for Contact Tracing
Katie O’Malley fan. Celtic rock singer/songwriter. 61st Governor of Maryland, former Mayor of Baltimore

Governor Martin O’Malley

#ACTWebinar  #SafeMobility  #GetMovingAgain  #LetsHytch  #SmartCities  #TDM  #Mobility
Where US COVID-19 cases are increasing, decreasing vs. two weeks ago

Last updated: July 20

Source: Worldometer comparing 7-day averages
Dr. Charles Apigian
Director of the Data Sciences Institute at Middle Tennessee State University

TWITTER: @capigian

Changing education to make ALL students (K - career) data literate. Community Leader of the Year and Data Scientist of the Year, @Nashtechcouncil. "Using Data for Good." @MTSU_DSI
MTSU - Hytch Partnership

A data driven approach to ride sharing.

- January 2018 - Hytch started tracking trips
- Spring 2018 - Hytch Rewards and Data Science Institute began working together
Analysis for an upcoming USDOT report on ride sharing

Validating database structure for scale and flexibility
Several case studies – including companies and local municipalities

Benchmarks for sustained use

Effect of rewards per mile on total miles

Relationship between percentage of no reward trips and last trip

Reward per mile amount to pay a customer as an incentive that diminishes over time.
Total Miles vs. Reward Miles

![Bar graph showing Total Miles vs. Reward Miles]

<table>
<thead>
<tr>
<th>YrMonth</th>
<th>Trip Count</th>
<th>Total Miles</th>
<th>Reward/Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>201802</td>
<td>9569</td>
<td>120,470.17</td>
<td>$0.05</td>
</tr>
<tr>
<td>201803</td>
<td>31023</td>
<td>414,799.85</td>
<td>$0.04</td>
</tr>
<tr>
<td>201804</td>
<td>34738</td>
<td>469,367.68</td>
<td>$0.04</td>
</tr>
<tr>
<td>201805</td>
<td>45440</td>
<td>678,394.06</td>
<td>$0.04</td>
</tr>
<tr>
<td>201806</td>
<td>48927</td>
<td>765,876.91</td>
<td>$0.03</td>
</tr>
<tr>
<td>201807</td>
<td>50732</td>
<td>816,449.54</td>
<td>$0.03</td>
</tr>
<tr>
<td>201808</td>
<td>54904</td>
<td>899,599.07</td>
<td>$0.02</td>
</tr>
<tr>
<td>201809</td>
<td>42464</td>
<td>687,642.60</td>
<td>$0.02</td>
</tr>
<tr>
<td>201810</td>
<td>45236</td>
<td>764,197.17</td>
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<tr>
<td>201811</td>
<td>37044</td>
<td>626,850.92</td>
<td>$0.02</td>
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<tr>
<td>201812</td>
<td>35542</td>
<td>587,917.33</td>
<td>$0.02</td>
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<tr>
<td>201901</td>
<td>41793</td>
<td>669,335.23</td>
<td>$0.02</td>
</tr>
<tr>
<td>201902</td>
<td>38250</td>
<td>591,514.21</td>
<td>$0.02</td>
</tr>
<tr>
<td>201903</td>
<td>44203</td>
<td>765,833.74</td>
<td>$0.02</td>
</tr>
<tr>
<td>201904</td>
<td>41064</td>
<td>807,616.48</td>
<td>$0.02</td>
</tr>
<tr>
<td>201905</td>
<td>38346</td>
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<tr>
<td>201906</td>
<td>21896</td>
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<tr>
<td>201907</td>
<td>14532</td>
<td>328,056.09</td>
<td>$0.01</td>
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<tr>
<td>201908</td>
<td>10997</td>
<td>226,799.08</td>
<td>$0.00</td>
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<tr>
<td>201909</td>
<td>7940</td>
<td>154,472.85</td>
<td>$0.01</td>
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<tr>
<td>201910</td>
<td>6382</td>
<td>120,205.32</td>
<td>$0.01</td>
</tr>
<tr>
<td>201911</td>
<td>6084</td>
<td>117,048.93</td>
<td>$0.01</td>
</tr>
<tr>
<td>201912</td>
<td>4713</td>
<td>106,049.15</td>
<td>$0.01</td>
</tr>
</tbody>
</table>
What sustains a new data contributor?

<table>
<thead>
<tr>
<th>Ave. Reward in First Month</th>
<th>Less than 3</th>
<th>3 or more</th>
<th>6 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.00</td>
<td>71.3%</td>
<td>28.7%</td>
<td>16.4%</td>
</tr>
<tr>
<td>$0.01</td>
<td>70.4%</td>
<td>29.6%</td>
<td>18.6%</td>
</tr>
<tr>
<td>$0.02</td>
<td>51.5%</td>
<td>48.5%</td>
<td>33.3%</td>
</tr>
<tr>
<td>$0.03</td>
<td>46.1%</td>
<td>53.9%</td>
<td>41.1%</td>
</tr>
<tr>
<td>$0.04</td>
<td>43.4%</td>
<td>56.6%</td>
<td>45.6%</td>
</tr>
<tr>
<td>$0.05</td>
<td>38.0%</td>
<td>62.0%</td>
<td>50.6%</td>
</tr>
<tr>
<td>$0.06</td>
<td>40.4%</td>
<td>59.6%</td>
<td>50.9%</td>
</tr>
<tr>
<td>$0.07</td>
<td>41.5%</td>
<td>58.5%</td>
<td>53.4%</td>
</tr>
<tr>
<td>$0.08 or more</td>
<td>52.3%</td>
<td>47.7%</td>
<td>38.7%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>52.9%</strong></td>
<td><strong>47.1%</strong></td>
<td><strong>35.6%</strong></td>
</tr>
</tbody>
</table>
Statistics based on first month incentive

<table>
<thead>
<tr>
<th>First Month Reward</th>
<th>Percent of Users</th>
<th>Trips Per User</th>
<th>Distance Per User</th>
<th>Ave. Reward Per Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.00</td>
<td>4.5%</td>
<td>20.74</td>
<td>114.07</td>
<td>$0.00</td>
</tr>
<tr>
<td>$0.01</td>
<td>27.3%</td>
<td>27.94</td>
<td>145.71</td>
<td>$0.01</td>
</tr>
<tr>
<td>$0.02</td>
<td>16.7%</td>
<td>65.28</td>
<td>228.72</td>
<td>$0.02</td>
</tr>
<tr>
<td>$0.03</td>
<td>12.9%</td>
<td>108.74</td>
<td>283.44</td>
<td>$0.03</td>
</tr>
<tr>
<td>$0.04</td>
<td>10.0%</td>
<td>123.39</td>
<td>252.90</td>
<td>$0.03</td>
</tr>
<tr>
<td>$0.05</td>
<td>10.2%</td>
<td>159.10</td>
<td>266.04</td>
<td>$0.04</td>
</tr>
<tr>
<td>$0.06</td>
<td>12.8%</td>
<td>159.12</td>
<td>238.19</td>
<td>$0.05</td>
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<tr>
<td>$0.07</td>
<td>3.5%</td>
<td>133.44</td>
<td>164.57</td>
<td>$0.05</td>
</tr>
<tr>
<td>$0.08 or more</td>
<td>2.0%</td>
<td>80.73</td>
<td>168.22</td>
<td>$0.15</td>
</tr>
<tr>
<td>Grand Total</td>
<td>88.80</td>
<td>220.98</td>
<td></td>
<td>$0.03</td>
</tr>
</tbody>
</table>
What’s the cost to incentivize ride sharing?

As low as $0.02 per mile

- 14-mile average trip
- 177 miles average per month per user
- To incentivize 177 miles per month:
  - $0.02 for $3.54 per month
  - $0.03 for $5.31 per month
  - $0.04 for $7.08 per month
  - $0.05 for $8.85 per month
- $5,000 per month = 1,500 users at $0.02 per mile.
The GNRC is an association of local governments representing communities across 13 counties in Middle Tennessee.

Sean Pfalzer
Transportation Planning Manager, Greater Nashville Regional Council
An agency tool to inspire participation

1. Move from anonymous data and periodic surveys to real time, direct commuter relationships
2. Own the data to contribute to GNRC modeling and planning
3. Leverage GNRC data and our understanding of short and long term infrastructure investments
4. GNRC will design rules to support its policy objectives for:
   ○ Increased carpooling and transit use
   ○ Improved mobility options for traditionally underserved communities
   ○ Decreased travel demand during peak rush hour periods
   ○ Enhanced engagement with area travelers
   ○ Better movement of freight within and around the region
Employer and Market Sponsors Share Burden and Accelerate Participation

- Create custom incentives to meet your unique goals
- Motivate your employees to self organize shared commutes
- Cultivate commuter-friendly and eco-friendly culture

CUSTOM REWARDS

**Employee Driver** - $.05/mile

**Non-Employee** - $.01/mile

**Employee Rider** - $.03/mile
Aaron Steiner
Director of Mobility Innovation, City of South Bend

TWITTER: @aaronsteiner

Taking the stress out of your commute in @CityofSouthBend with @CommutersTrust a program by @InnovationCoSB and @BloombergDotOrg Bloomberg Mayors Challenge.
Case Study: South Bend, Indiana

1 in 3

low-income workers cite transportation as top barrier to employment

$3M+

Estimated cost to employers in our region due to high employee turnover

City’s Commuters Trust transportation-as-a-benefit program provides

shared mobility discounts and incentives

including 50¢ per mile carpool rewards using Hytch, paid in part through employer contributions
### Case Study: South Bend, Indiana

#### New COVID-19 Reality

| Shared rides increase **health safety risk** during pandemic | Employers face **increased financial pressure** | Unemployment rises from **3.6% to 20%** |

#### Our Response

| Implement **Hytech Wellness Pledge** to promote safe commuting | Redefine objectives in new environment and **diversify partnerships** | Expand program to cover unemployed residents |
We believe that strong, equitable local recovery from the pandemic will require **safe, more available mobility options**.
Dr. Trish Holliday

Leadership and Learning Strategist, Executive Coach

Founding Partner, HOLLIDAY | KENNING
Functional Fixedness
From the work of Dr. Karl Duncker

Functional fixedness is a cognitive bias that limits a person to use an object only in the way it is traditionally used.
Although people have dramatically changed, many organizations operate as if they are frozen in time.
It’s all about the way you think …

Growth Mindset is the Key!

Holliday | Kenning
Defining Intrapreneurship

A system that allows an employee to act like an entrepreneur within a company or other organization.

A broader vision for an established company that involves changes to traditions, processes, or products to sustain in the future.
1. Relentless Curiosity
2. Embracing Uncertainty
3. Daring Courage
4. Passionate Resilience
5. Contagious Collaboration

Five Qualities Inherent to Stoking the Intrapreneurial Spirit

By Aimee Hansen
A complacent culture blinds you to organizational threats

Culture eats strategy for breakfast

— Peter Drucker
Collective Impact

A framework to tackle deeply entrenched and complex social problems
Co-founder @Swiftwick & @HytchRewards. Investing in US domestic manufacturing for 15 years. Rotarian, technology entrepreneur in #Nashville, loves sky diving & scuba, craft beer, cycling & Oregon Duck games

Mark Cleveland
POST EVENT RESOURCES

1. CELEBRATE:  
   Post Event ACT Happy Hour

2. COLLABORATE:  
   Cyber HealthTech Conference - August 6  
   “Strategies for Self Protecting Data, Merging Health and Mobility Platforms”

   NASHVILLE TECHNOLOGY COUNCIL - Analytics Summit - Sept 21-22  
   “The Third Wave of Public Transportation, a Data Driven and Incentive Based Approach to Public Mobility”

Request for more information - hytch.me/collaborate
Questions
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