AGM – Futuristic Delivery/Pickup Options Recommendations

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- Using Berkeley Store As Pilot For Alternative Delivery Methods a necessary and good start
- Need to start developing a analytics database to continually glean insights into customer reach and growth, efficiency and effectiveness of delivery methods
- A single way trip from Downtown Berkeley station to other Bart stations averages one hour
- Having just Berkeley Store as pickup location will just not scale for customer base
- In addition, only one pickup location will be a single point of failure
- Requires evaluation of alternate delivery methods to grow business and delight customers

Adding More Pickup Locations

- Continuing to build on analytics database to continually glean insights into contribution of pick up locations to growth will be very useful
- Given significant investment needed to build pickup locations, using BART stations are pickup points for running experiments will reduce risk
- Picking stations that have a large number of adjoining line segments or ones where a large number of passenger start or end their trip will maximize coverage and minimize pickup locations (for example Milpitas)
- Having too many pickup locations increases costs and reduces the “exclusiveness” image of the meals

Using Public Transportation (BART) To Transport Deliveries

- Given that BART covers a large region where AGM patrons reside, BART can be make delivers more cost efficient
- Since it is possible that there can be BART delays/cancellations on any given day between segments or across the entire system, contingencies need to be planned and need to be able to react quickly to changes
- Ability to do this will depend on analytics system and alternate/hybrid delivery methods
- There can be challenges using BART if deliveries are done within a short duration of order given the large region BART covers and large transfer times between stations
- Either deliveries need to be planned with longer lead times for actual delivery so that the BART trips can be planned accordingly or BART needs to be used to supplement the deliveries by using it strategically with shorter hops

Using Delivery Drones

- Delivery drones can be a revolutionary delivery method and can be experimented on a small scale to get insights and learn from it
- Regulatory risks and needs to evaluated in conjunction with adoption in other industries
- Can possibly be used to deliver to additional pickup locations rather than addresses of specific patrons
- Will benefit significantly with analytics database build out so that opportunities can be harnessed

Using Delivery Robots

- Delivery robots can be a useful delivery method in some contexts and can be experimented to get insights and learn from it
- Applicable in contexts wherein there are some delivery locations with a large number of orders (for example office locations, college campuses)
- Use of this delivery method has added benefit of understanding patron preferences and patron segmentation for future offerings
- Will benefit significantly with analytics database build out so that opportunities can be harnessed

Hybrid Approach

- Given that there are unique benefits with each delivery approach along with associated risks and constraints, a hybrid approach can be extremely useful
- Increases redundancy in delivery if one or more approaches faces a challenge at a given point of time
- Analytics data collected from each of the delivery approaches can have synergetic benefits
- Can help scale the business since they can holistically increase coverage and serve niche needs simultaneously
- Provides opportunities for experimentation and learning

No SQL

- Neo4j graph database very useful for all delivery methods discussed since it can answer analytics questions such as
  - shortest path between locations, time needed to travel between points, impact of a station/line path not been accessible during a durations, locations that are central that can help establish pickup locations, etc
  - The relational database serves to store transactional data reliably and efficiently
- Possible uses of Mongo DB in systems involved with these processes
  - Efficiently combine information about stations, lines, transfer times, etc using a collection of documents that can be used to support use cases such as search, descriptive analytics, etc
  - Can perform analytics from different points of view (station, lines, etc) with rollups over different periods of time (hour, day, week, etc) to glean interesting insights leading to business decisions
- Possible uses of Redis in systems involved with these processes
  - Be able to store information that is static over a days and be able to serve the information for very quick searches (such as finding different paths from stations, etc)
  - Able to get some real time analytics on orders and deliveries performed using various methods so that appropriate actions can be taken