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William and Phyllis
MACK INSTITUTE
for INNOVATION MANAGEMENT

Connected Strategy: Building Continuous Customer Relationships for Competitive Advantage

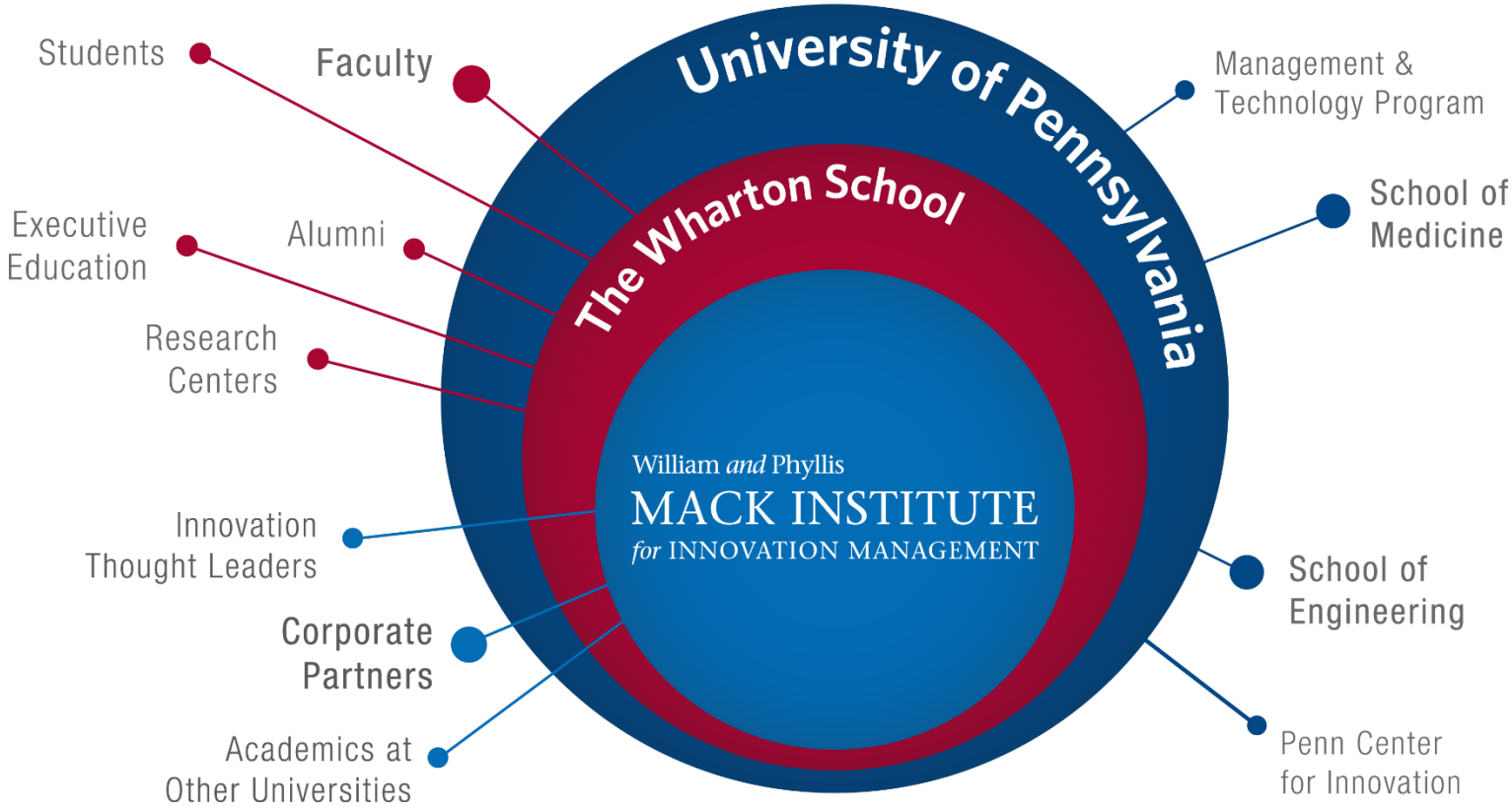
Mack Institute Spring Conference 2019

Wharton | San Francisco

Our Mission

The Mack Institute fosters industry and academic communities to transform our innovation research into real-world impact.

A Central Node in a Knowledge Network



We act as the hub of a global network linking scholars, industry leaders, and students.

Our Impact

Mack Institute activities focus on research, managerial practice, and students.

$4M	Research funding since 2001
4	Continents represented in corporate partner network
522	Research projects funded since 2001
2150	Approximate total of unique conference attendees since 2001
592	Working papers, scholarly articles, and books/book chapters
143K	Annual MOOC enrollment
37K	Academic citations as of 2018
2000+	Students engaged in programs, faculty-led courses, and events annually

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for INNOVATION MANAGEMENT

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Co-director, Mack Institute; David M. Knott Professor and Professor of Management

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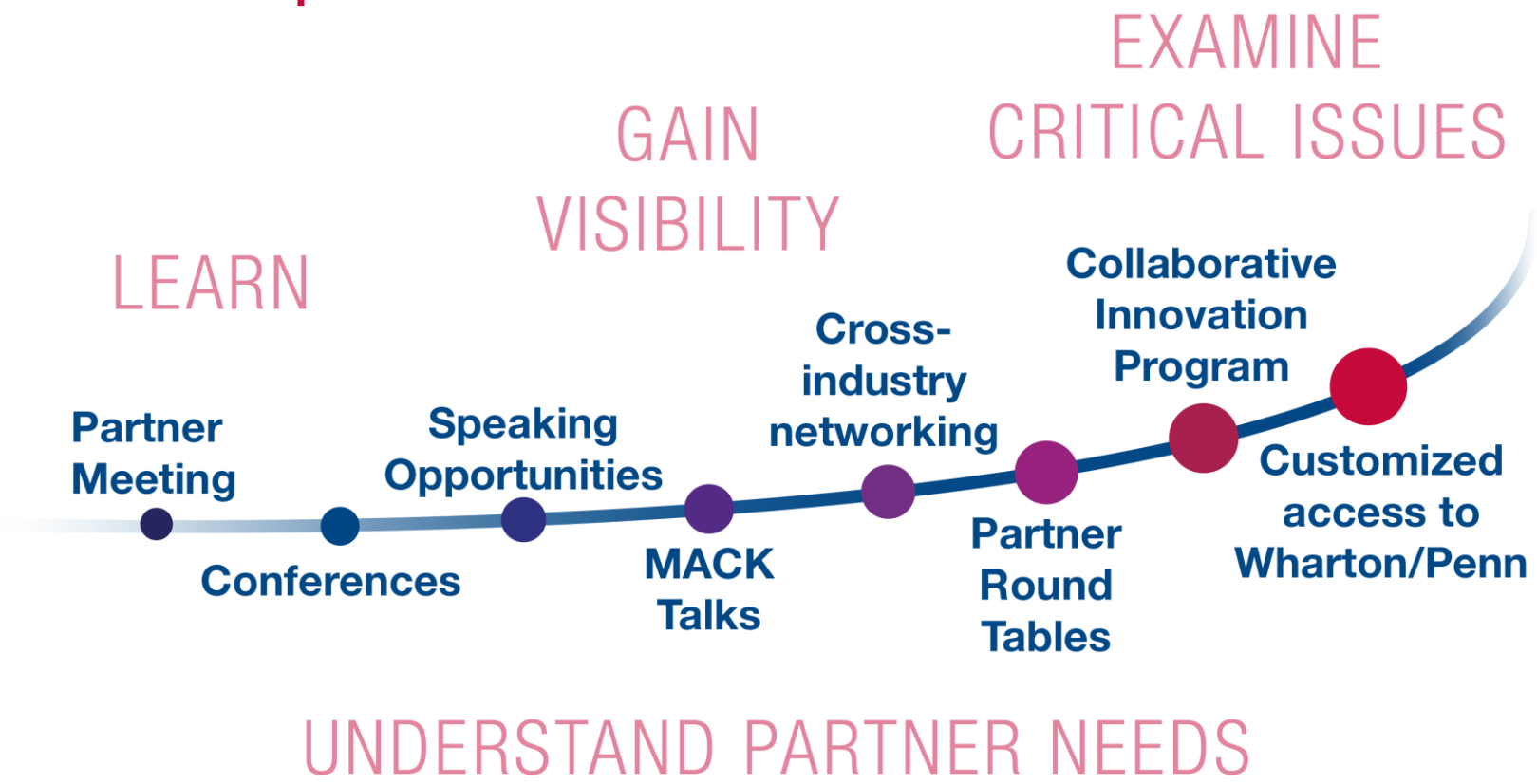
KARL T. ULRICH
Vice Dean of Innovation; CIBC Professor; Professor of Operations and Information Management

SIDNEY G. WINTER
Deloitte and Touche Professor Emeritus

Current Corporate Partners

Partnership Benefits



As we get to know partners and better understand their needs, we can provide benefits that align with their interests.

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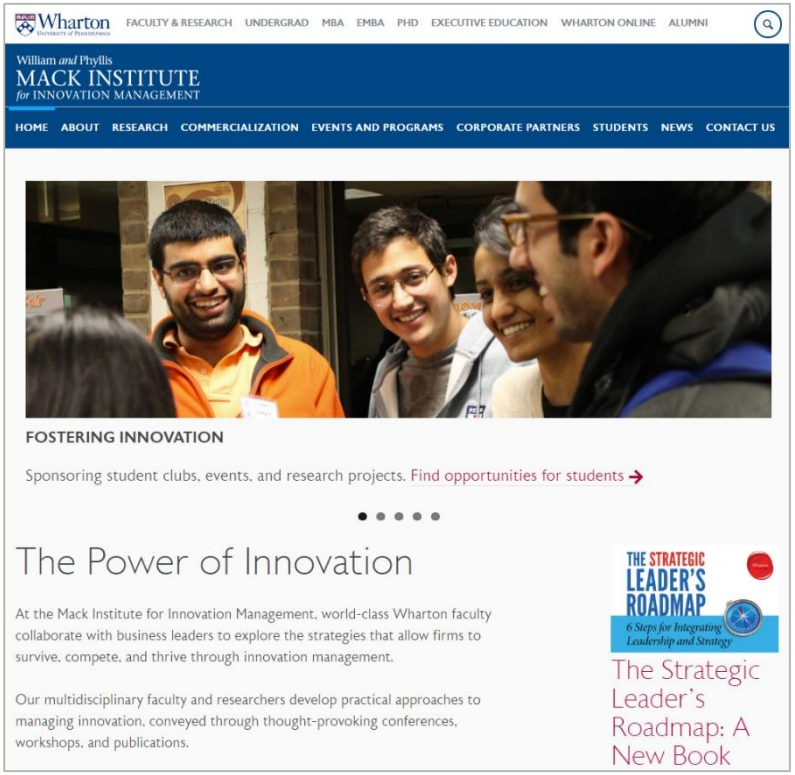

Conference Agenda

8:00 a.m.–8:30 a.m.	Breakfast
8:30 a.m.–10:00 a.m.	Building Connected Strategies
10:00 a.m.–10:30 a.m.	Break
10:30 a.m.–12:00 p.m.	Creating Connected Customer Relationships
12:00 p.m.–1:30 p.m.	Lunch and Networking
1:30 p.m.–2:30 p.m.	Creating Connection Architectures
2:30 p.m.–2:45 p.m.	Break
2:45 p.m.–3:45 p.m.	Technologies Underlying Connected Strategies
3:45 p.m.–4:00 p.m.	Closing Remarks
4:00 p.m.	Reception: Palomino

KNOWLEDGE FOR ACTION

CONNECTED STRATEGY

Nicolaj Siggelkow
Christian Terwiesch
Wharton School

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Truck Rental
Household & Business Rentals
GoPenske.com
1-800-GO-PENSKE

Dashboard | Dashboard

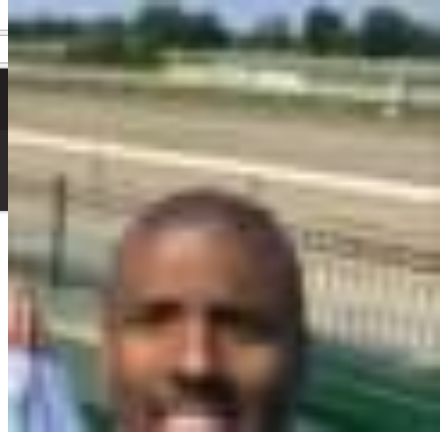
Secure | https://turo.com/dashboard/history

TURO | Enter city, airport, or address | List your car | Dashboard | Learn more

ACTIVITY | TRIPS | HISTORY

FEBRUARY 2018

Your trip
Tesla Model S 2013
Feb 2 - Feb 5



Get started

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Make money with your car
Turo for business

Learn more

How Turo works
Policies
Trust & safety
Owner tools
Traveler FAQs

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Denver
Honolulu
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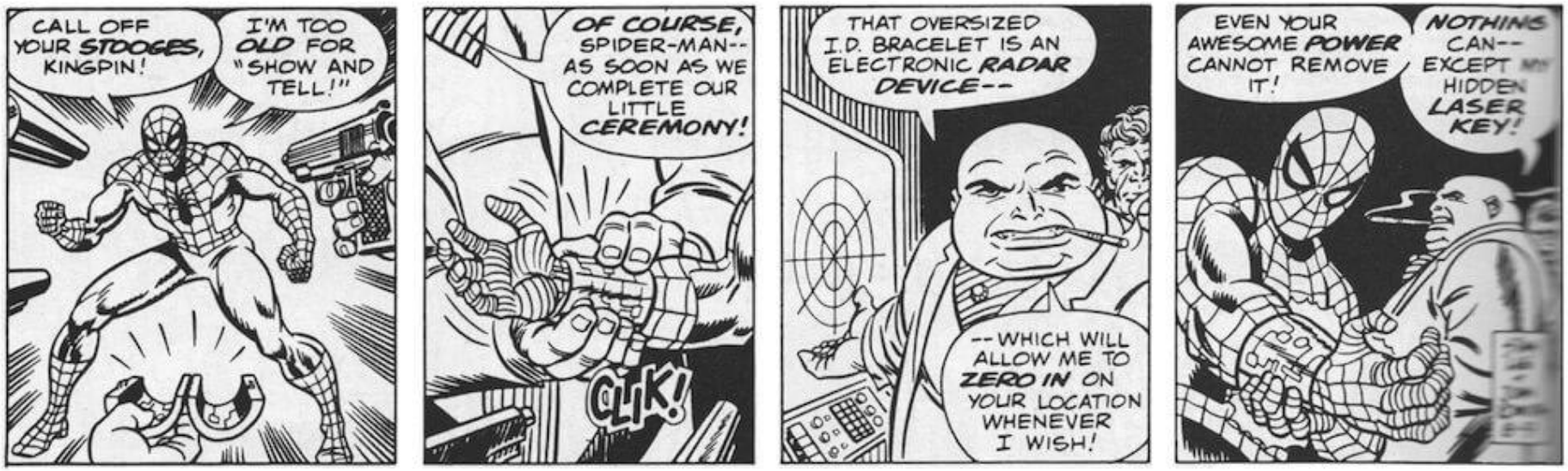
https://turo.com/reservation/2622271


Marlon
Charging
13 hr 25 min remaining
STOP CHARGING
57 mi
10 mi/hr
+ 4 mi
22/22 A
201 V
SET CHARGE LIMIT
SETTINGS FOR THIS LOCATION
SCHEDULED CHARGING
OFF
ON
CHARGE CURRENT
22 A
CONTROLS
CLIMATE

What is New in this Story that might Apply to Your Work?

The Early Version of Connected Strategy: How Judge Jack Love Turned Homes into Prisons



1977 Spiderman strip

Initial tagging technology developed in the 1960s

Ankle monitor product with an initial focus on security
Judge Jack Love (New Mexico)

Next application: tracking dementia patients

http://www.nytimes.com/1984/02/12/us/electronic-monitor-turns-home-into-jail.html
http://reason.com/archives/2012/05/24/the-lighter-side-of-electronic-monitorin
https://www.newsmax.com/health/health-news/alzheimer-electronic-tag-dementia/2013/06/21/id/511165

From Criminals to Children

The Customer Need
Track children on a boat in order to ensure safety (allowing their parents to relax)

The Status Quo Solution
Interrupt all play activities every 30 minutes for a complete roll call

The New Solution
Provide a wrist band to each child and track the location of the wrist band
Combine tracking with geo-fencing

What would you prefer?
As a child
As a parent
As cruise team
As Disney executive

From the Cruise Ship to the Theme Park: Meet and Greet

The Customer Need
Personalize the theme park experience by having Disney characters interact 1:1 with guests

The Status Quo Solution
Interaction is truly random (and hence not personalized) or prearranged through the parents

The New Solution
Wrist band identifies the guest and CRM system provides guest history to the cast in real time

The Value Proposition
“Remember the child” and weave together multiple theme park experiences across time and location

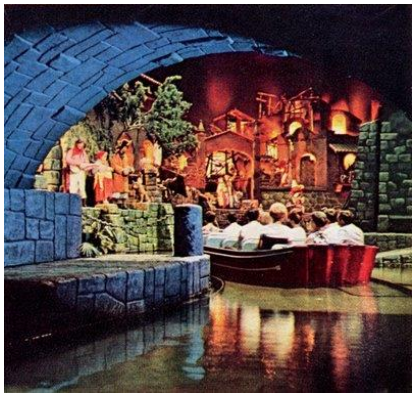
Other Application of the Magic Band Soon Followed

Meal Ordering

Recommendations

vs

Personalized experiences



Traffic management / fast pass

Personalized memories

=> Better Customer experiences (at potentially lower (!) costs)

The Shanghai Resort Opening in 2016

SHANGHAI DISNEY RESORT
上海迪士尼度假区

$5.5 Billion in investment
11 million guests in year 1 of operation (compared to 20MM in Florida and 6MM in Hong Kong)

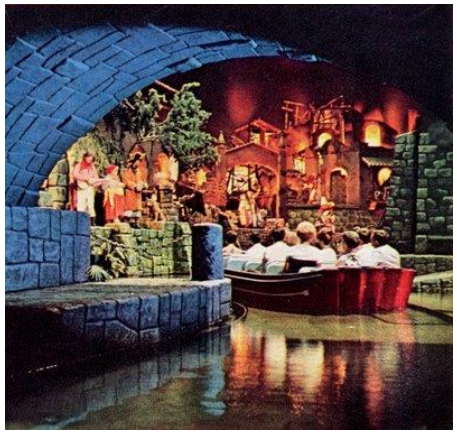
But…

The Connectivity Challenge

How can we use **new technology** to create **Customer experiences** that replace episodic interactions with frequent, low-friction, and customized interactions …

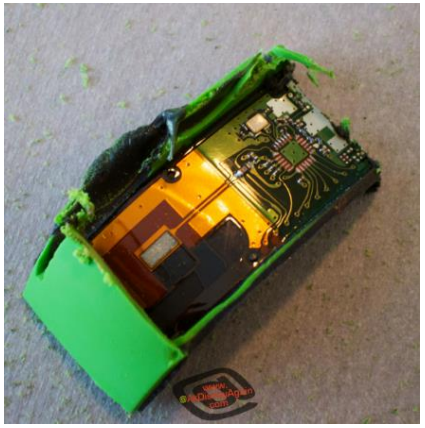
… and do this without increasing (and potentially reducing) **fulfillment costs**

Other Connected x: connected cars / mobility, connected banks, IoT, etc …



Customer Experience

Delivery model determine fulfillment costs



Technology platform Enabling technology

Objective of this session:
- Understand different types of connected Customer experiences
- Distinguish between different fulfillment models
- Spot new opportunities and identify disruptive threats

Connected strategies consist of two elements

Higher Willingness-to-Pay at lower cost!
That's why Connected Strategies can be industry changers.

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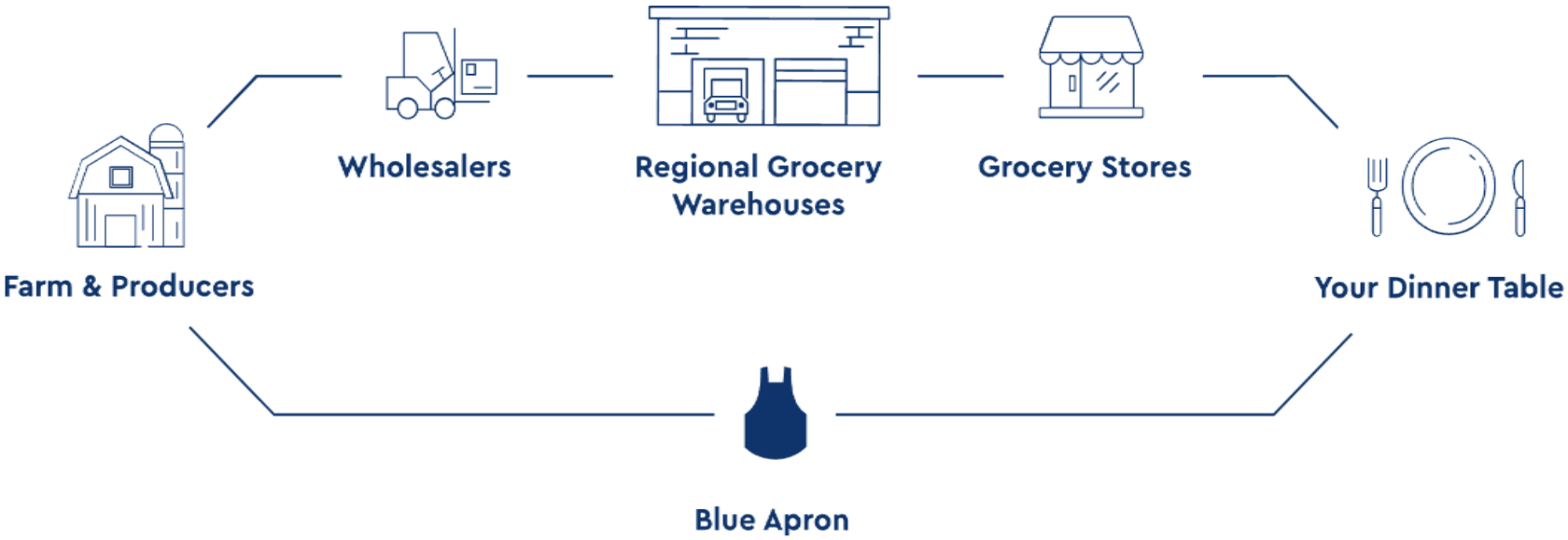
LEFTOVERS


Seared Steaks
Knick Knacks
Fresh Mint
Tokyo-Style
Fresh Ramen


Farm & Producers
Wholesalers
Regional Grocery Warehouses
Grocery Stores
Your Dinner Table
Blue Apron

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Impact of Connected Strategies on WTP and cost

- As any other innovation (or strategy), a new business model will create a competitive advantage for a firm only if it increases the gap between WTP and cost for a transaction with a customer.

- Connected Strategies have effectively pushed out the existing efficiency frontier

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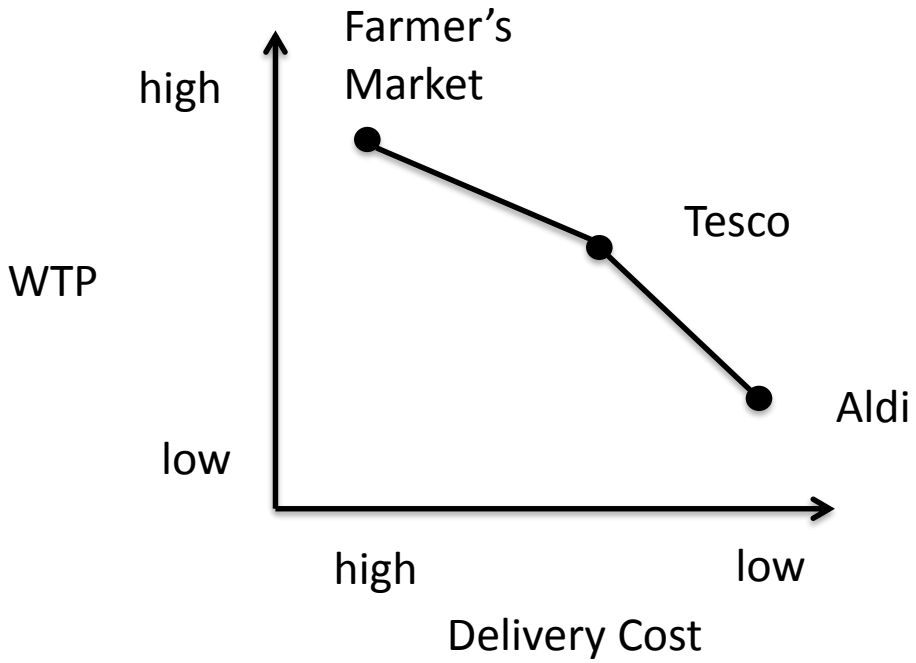
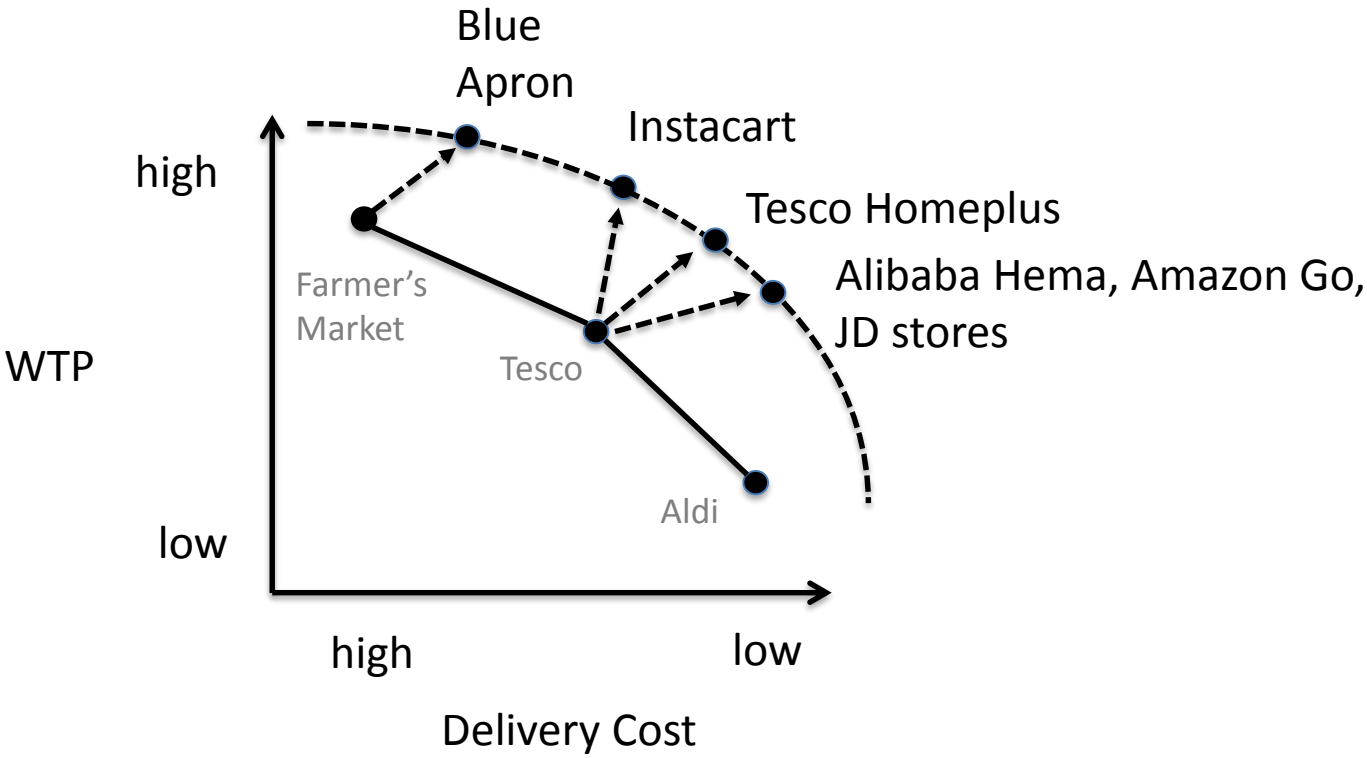
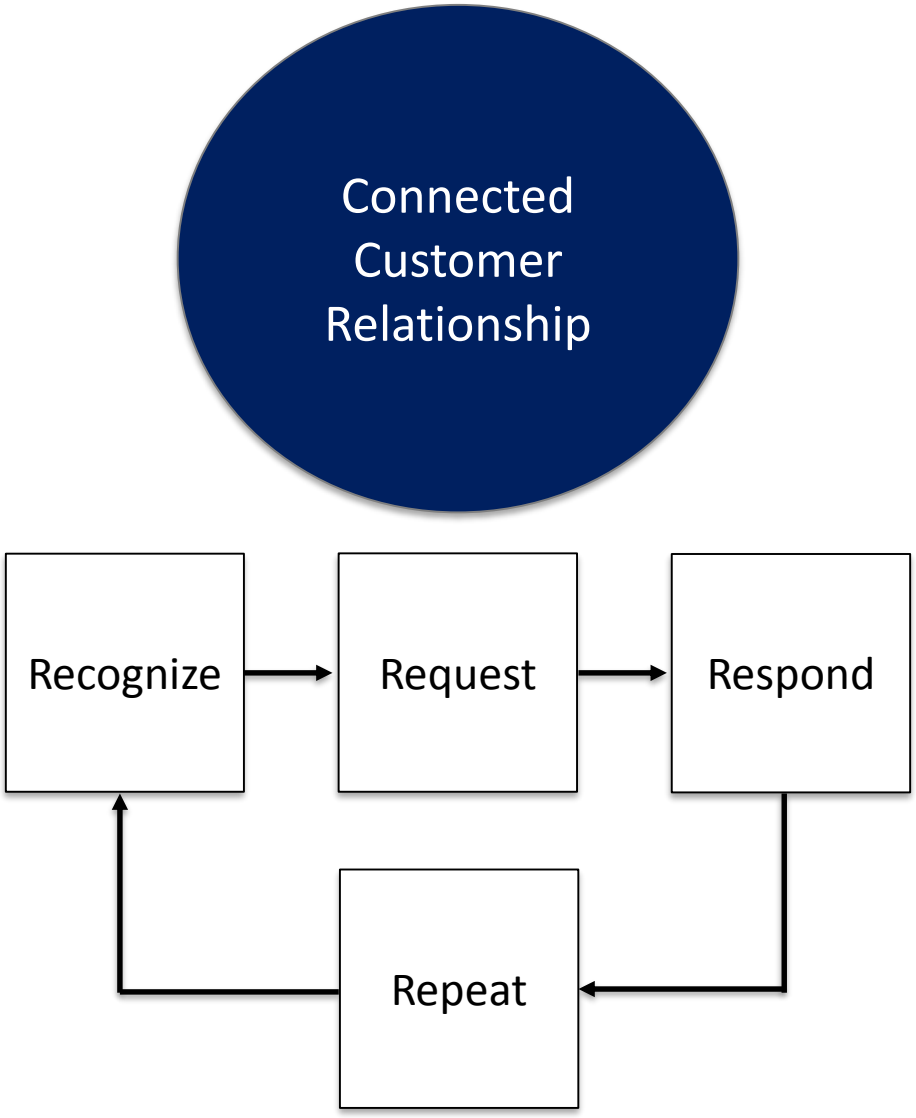
Efficiency Frontier

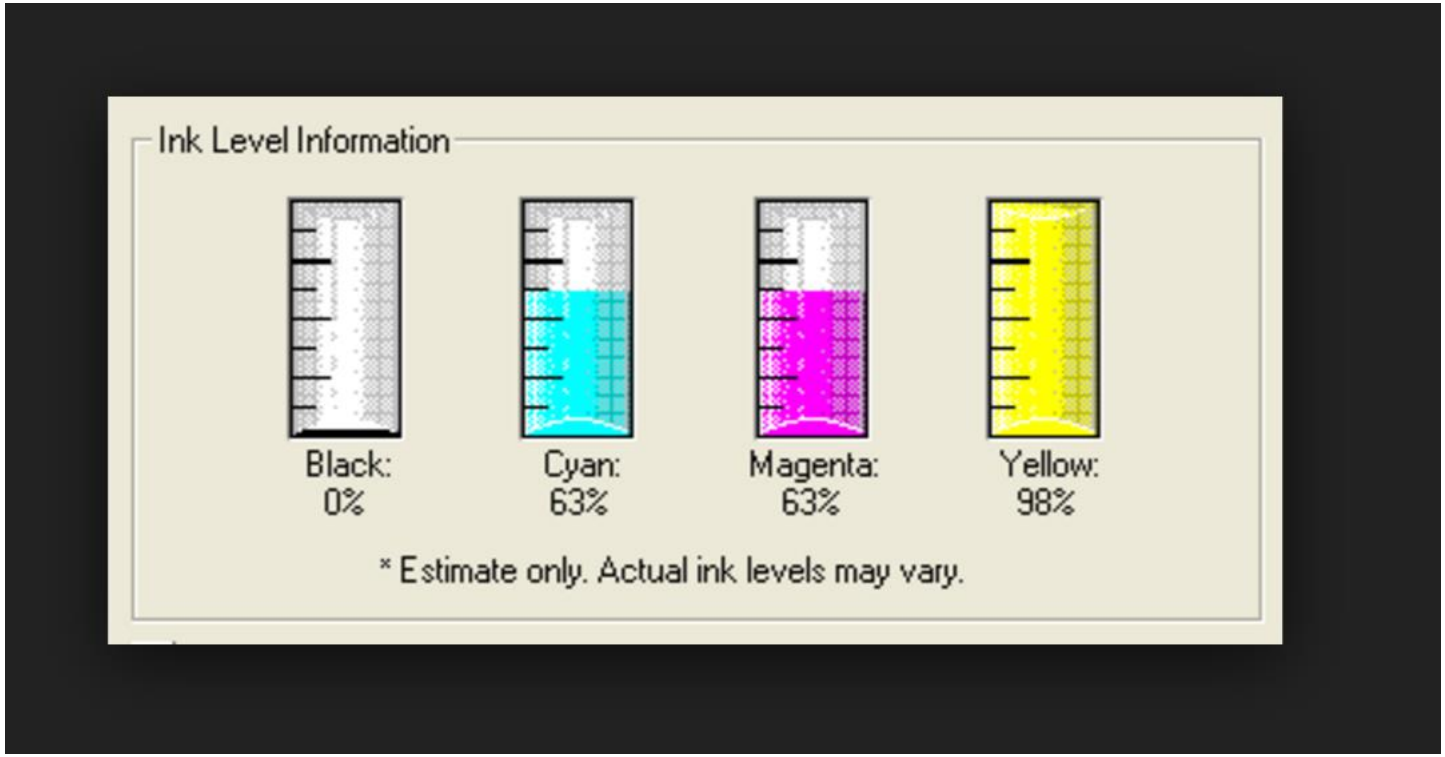


Shift in the Efficiency Frontier




Connected
Customer
Relationship
Recognize
Request
Respond
Repeat

Has this happened to you?



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Art & Drafting
Highlighters
Pencils
Pens
3
Adhesives
Clips & Fasteners
Scissors
Staplers
4
File Folders
Hanging Files
Index Dividers
Sheet Protectors
5
6
7
Office Accessories
Presentation

HP JetPro 6978? **Or** **HP JetPro 8710?**

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SAVE
WITH
XL BLACK
ÉCONOMISEZ
AVEC LA
CARTOUCHE
NOIRE XL
902XL
Black
Noir
902
Cyan
Magenta
Yellow
Jaune
SAVE WITH
HIGH YIELD
BLACK
ÉCONOMISEZ AVEC UN
RENDEMENT ÉLEVÉ
CARTOUCHE
NOIRE

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A different experience

- After you realize that you have run out of toner…
  - you go on-line to your favorite retailer
  - type in your printer model
  - click to order the correct toner
  - pay with the same click since your credit card number and your shipping address is already stored
  - two hours later your doorbell rings and your toner is delivered.

Respond-to-Desire Connected Customer Experience:

Firm tries to respond to explicit customer request very effectively (e.g., rapidly or with broad offering) (e.g., Amazon, Lyft, Airbnb)

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An even better experience

- After you logged into your on-line account…
  - the site would have already suggested the correct toner cartridge (since you had ordered toner before), eliminating your need to figure out the right type of toner for your printer
  - In addition, the site could also have suggested to reorder some paper (good catch, you were about to run out of paper as well!).

Curated Offering Connected Customer Experience:

Firm responds to (and anticipates) customer needs by providing a customized set of products and services (e.g., Netflix suggestions).

What problem haven’t we solved yet?

- The problem that neither Respond-to-Desire nor Curated Offering solved is that you realized your need for toner only after the toner ran out.
- Maybe given your past purchase behavior, your preferred retailer could have already sent you a reminder to reorder last week
- And while doing so they could have reminded you to run the cleaning function on your printer to keep print quality high

Coach Behavior Connected Customer Experience:

Firms try to tweak or nudge the behavior of their customers/clients to help them overcome inertia and decision biases (e.g., you want to take your medication but you are very forgetful; you want to exercise, but you are too lazy; you want to lose weight, but you don't stick to your diet). Firms employ behavioral interventions in the form of personal feedback and social comparisons.

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You may not know… but your printer does

- The doorbell rings and you are surprised to see FedEx delivering a box.
- You don't recall having ordered anything.
- You unpack the box and find a set of toner cartridges for your printer. Odd.
- You walk back to your office and start printing your letters.
- Your computer alerts you that your printer is about to run out of toner!

Automatic Execution Connected Customer Experience:

Firm automatically deduces and anticipates needs and fulfills them (e.g., behavioral medical intervention, fire alarm, re-order milk, re-order water filter, glucose testing supplies, re-balance portfolio).

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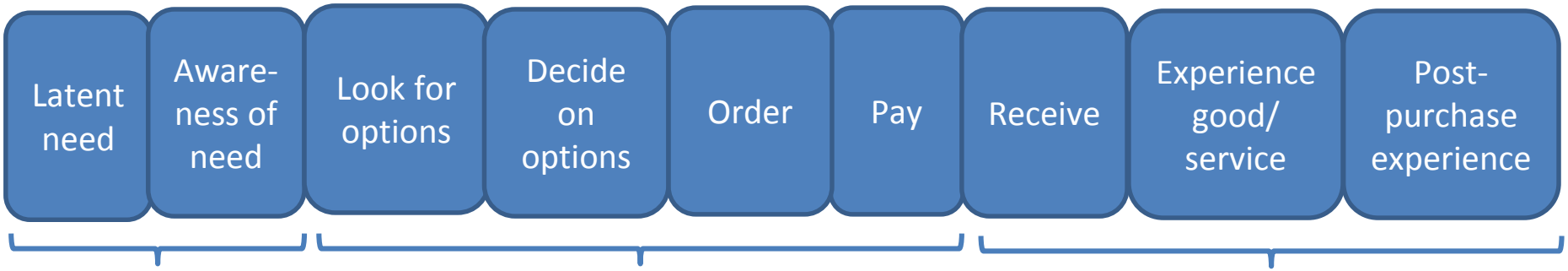
Connected Customer Experiences Have Three Parts

Recognize
the customer need

Request
the desired option

Respond
and provide the desired option



Why does a customer engage in the interaction?

How does the customer go about identifying, ordering and paying for the desired option?

What products or services are provided to the customer?

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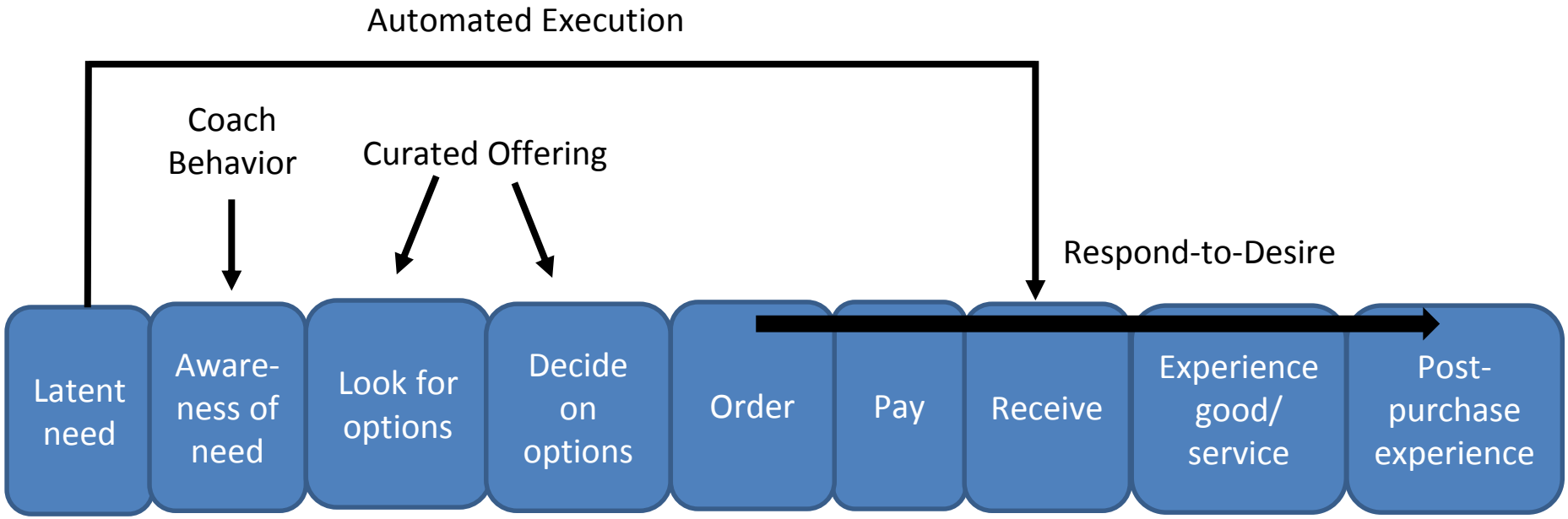
Different Connected Customer Experiences



Connected Strategy and Competitive Advantage

- Many elements of connectivity will become table stakes
- The main question for Uber is not how to beat taxi companies, but how to beat Lyft
- Imitation will be rampant

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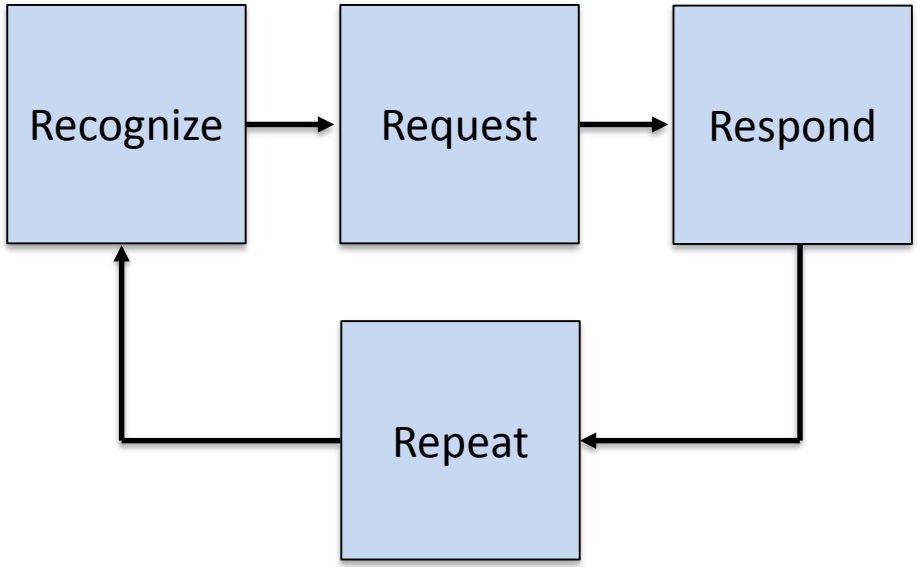
From Connected Experiences to Connected Relationships



The four **R's** of Connected Customer Relationships

Repeat strengthens the other three R's

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Becoming a Trusted Partner: Recognizing Deeper Needs

Needs tend to be bigger / deeper than a service episode (addressing more fundamental WTP drivers)

Hierarchy of needs

Keep me healthy

Provide the right healthcare when needed

Deal with my cardiac problems

Let me talk with a cardiologist

A connected strategy allows a firm to move up this hierarchy of needs

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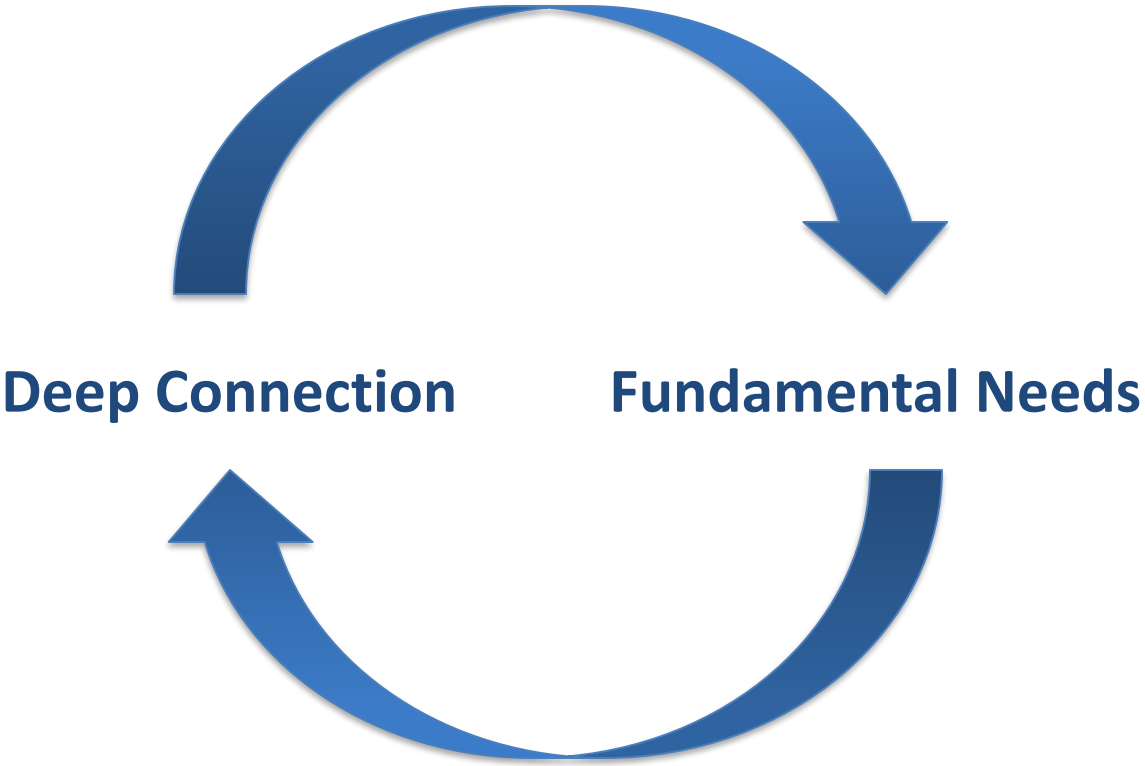
Connected Strategy to move up the hierarchy of needs

Only a deep connection can address more fundamental needs



Only if fundamental needs are addressed, does a customer accept a deep connection

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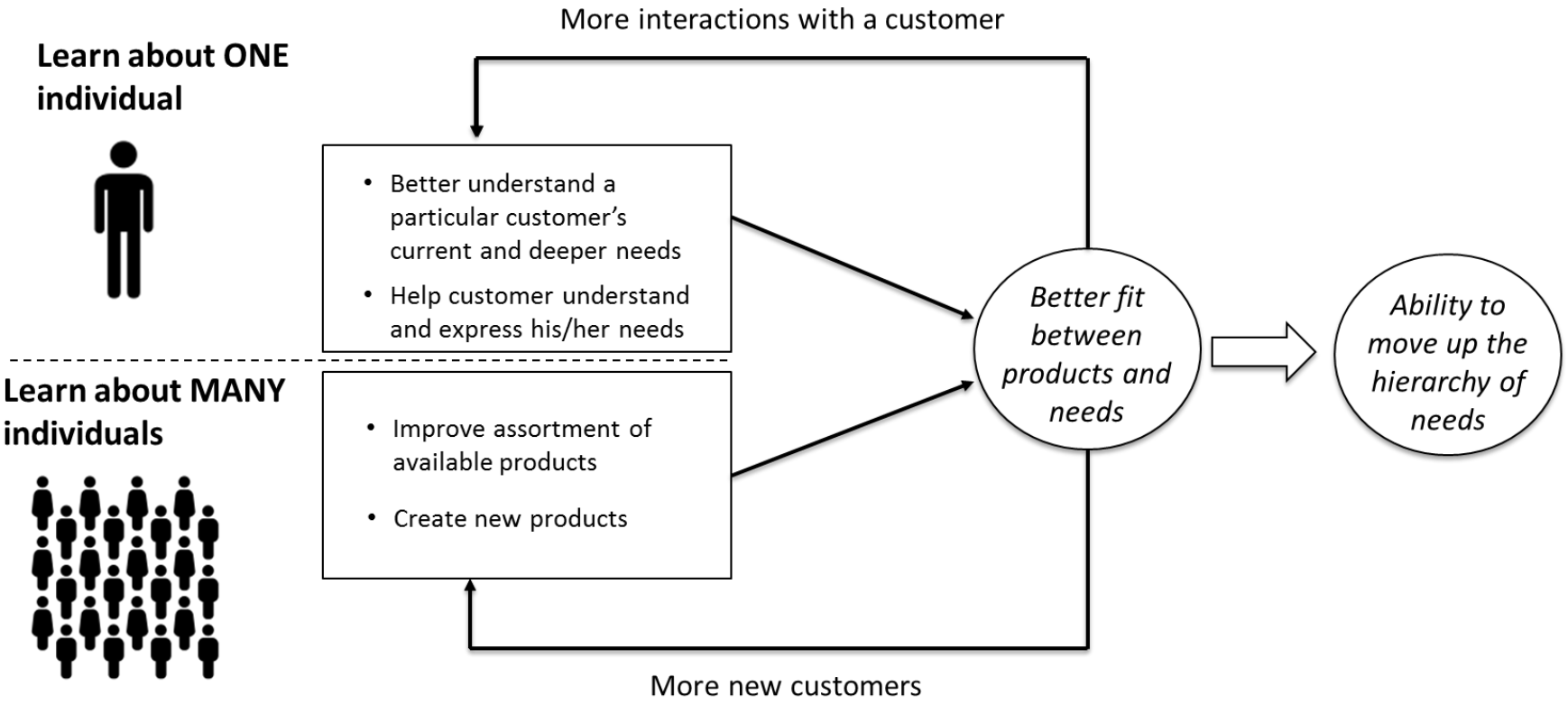
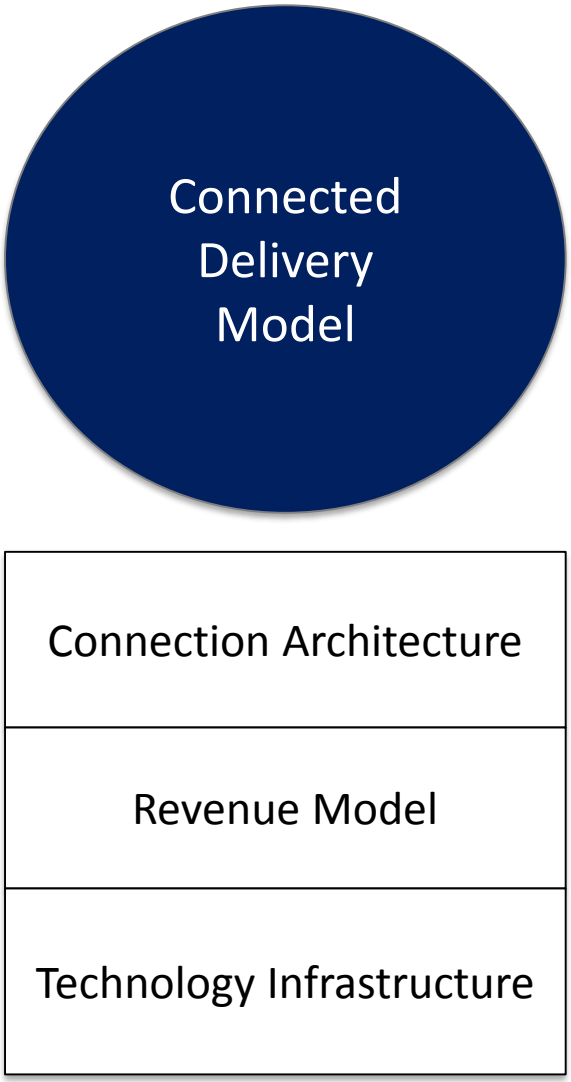
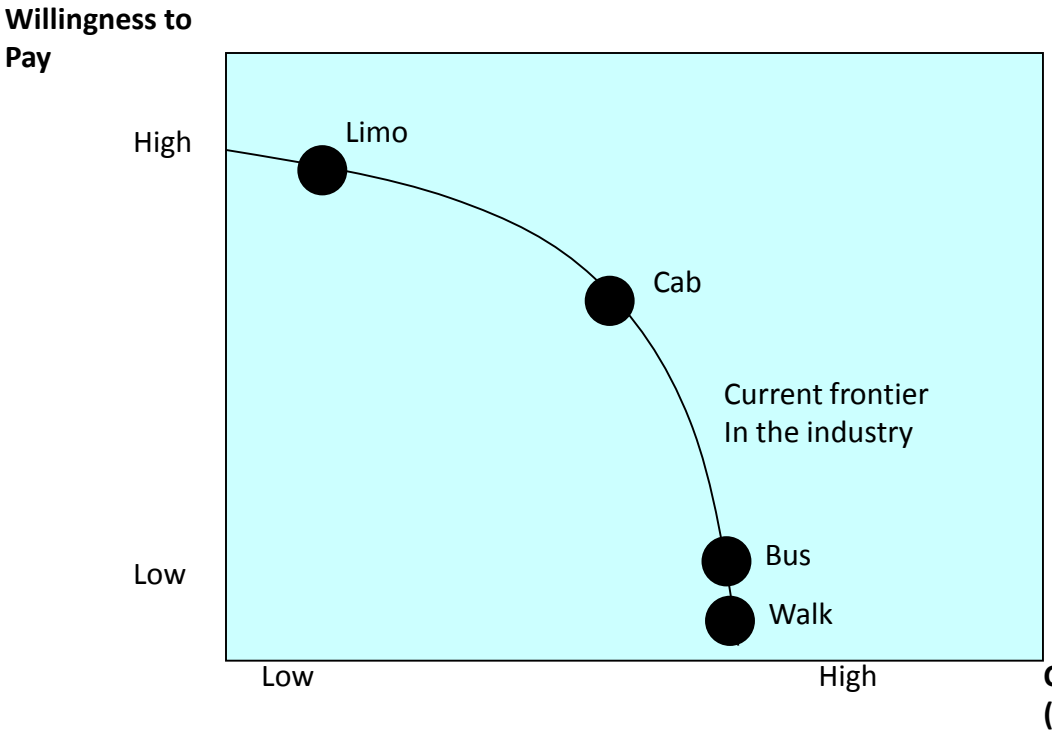
Repeat: Two positive feedback loops




Connected
Delivery
Model
Connection Architecture
Revenue Model
Technology Infrastructure

Connection Architectures

Connected Delivery Models: What Connections Do I have to my Suppliers to Provide the Customer with a Connected User Experience?



The Goal of Connected Strategy is to shift this curve

Where would you put Uber?

How is this possible?

Connected Delivery Models: Beyond Platforms and Sharing Economy
What is Different About these Mobility Companies?

UBER

Limo.com

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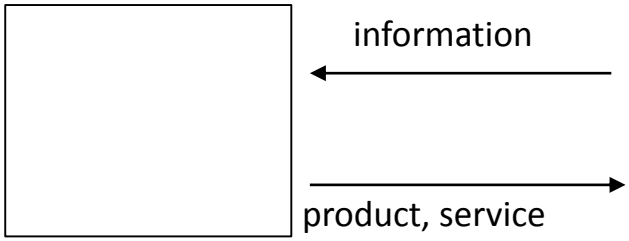
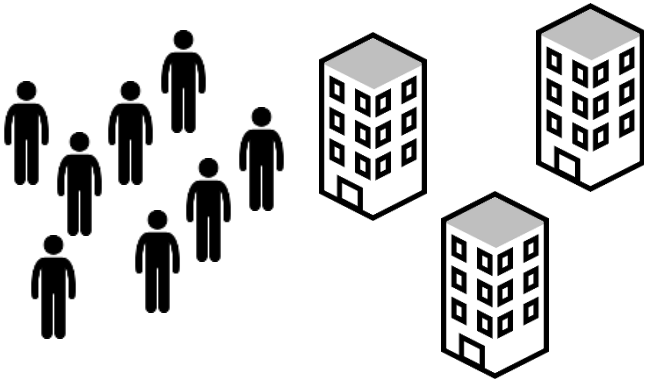
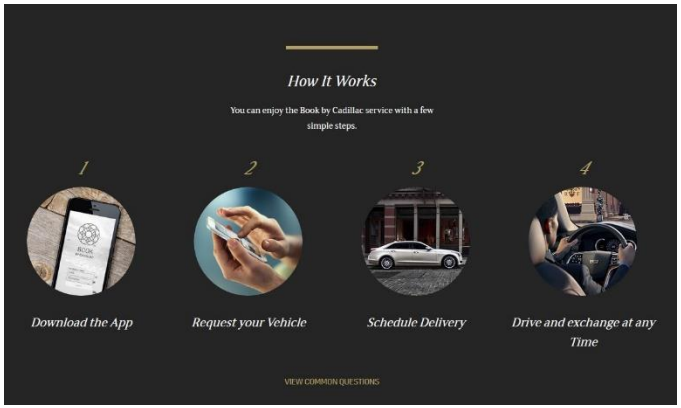
We Distinguish Between Five Connected Delivery Models: Connected Producers (often times: “product as a service”)

Connected Producer



Customers





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Examples: Connected Producers

Push up WTP:

- **Penn Health System**
- **UnderArmour (MyFitness Pal; MapMyFitness), Nike (Nike+ Training Club)**
- **EA, Valve (Video games; freemium)**
- **Disney Park (Magic Band: RFID + radio)**
- **Carnival (smart medallion)**

Lower cost:

- **Progressive (snapshot device)**

Lower Cost through sharing of a common resource:

- **Car2go (Daimler: 14,000 vehicles in 30 cities in eight countries)**

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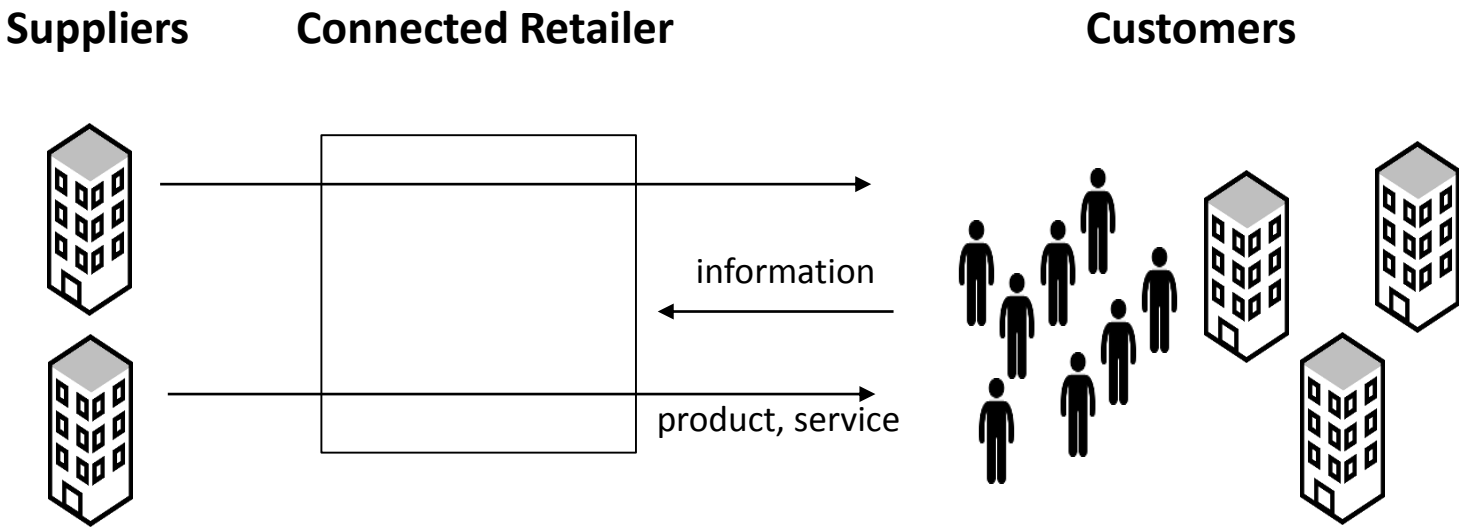
Connected Retailers



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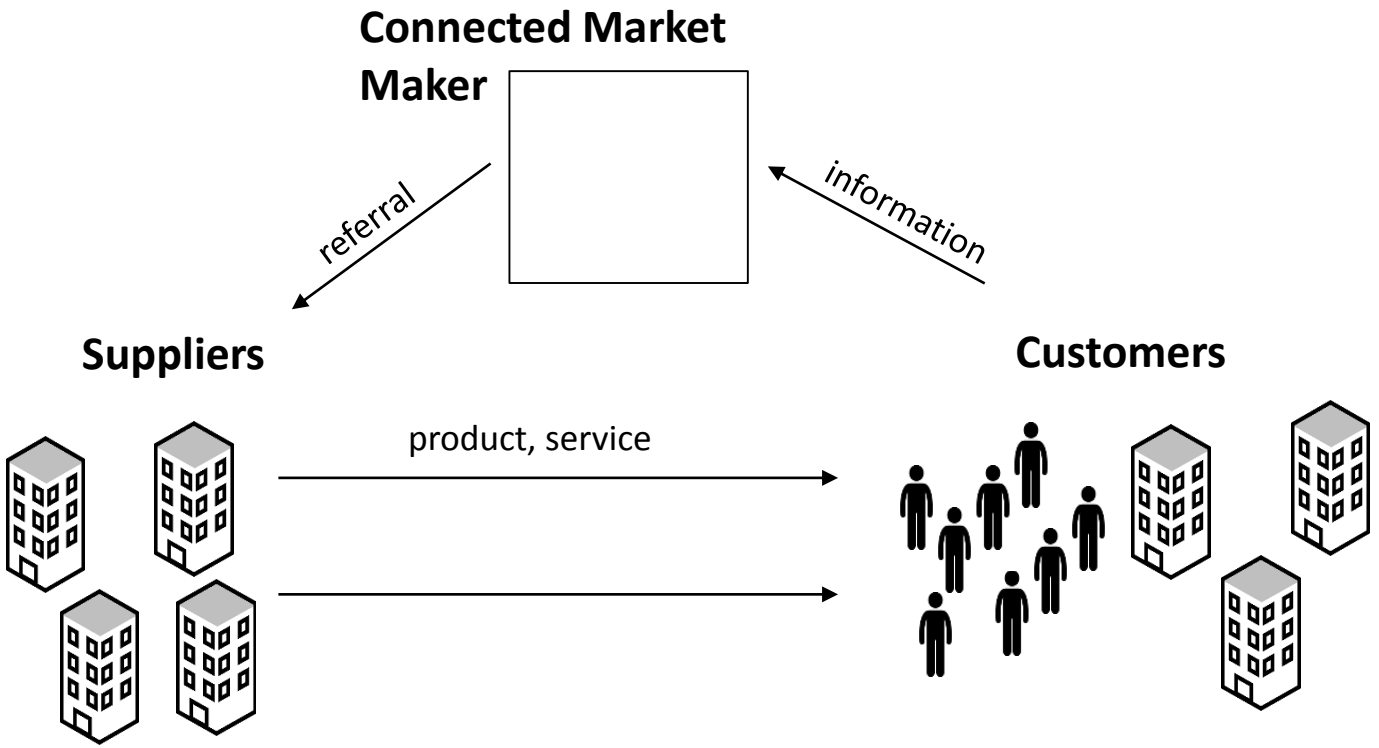
Examples: Connected Retailers

- Amazon (with own warehouse)
- zipCar
- Overstock.com
- Plated, Blue Apron (meal kit delivery business)
- Netflix, Hulu, Amazon Video (movies, TV shows)
- Spotify, Pandora, iTunes (music)
- Birchbox (beauty related items each month)
- Trunk Club, StitchFix (monthly curated boxes of apparel)
- Coursera, EdX (on-line learning, content produced by universities)
- Ideel (flash-sales of designer apparel)
- Rent the Runway (rent designer dresses)

Connected Market Makers



TRUECar®

Changing How Cars are Sold℠

Limo.com

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Examples: Connected Market Makers

- Expedia, Orbitz
- Cars.com, Autotrader.com (link to car dealers and individuals)
- Amazon Marketplace (access to many retailers)
- Wayfair (connect to 7000 home furnishing suppliers who ship directly)
- Open Table (restaurant reservations)
- GrubHub (on-line ordering of restaurant food)
- Class Pass (link to boutique fitness studios)
- Spot Hero (find open spots in car garages)
- Angie's List (user reviews and allows members to connect to local businesses)

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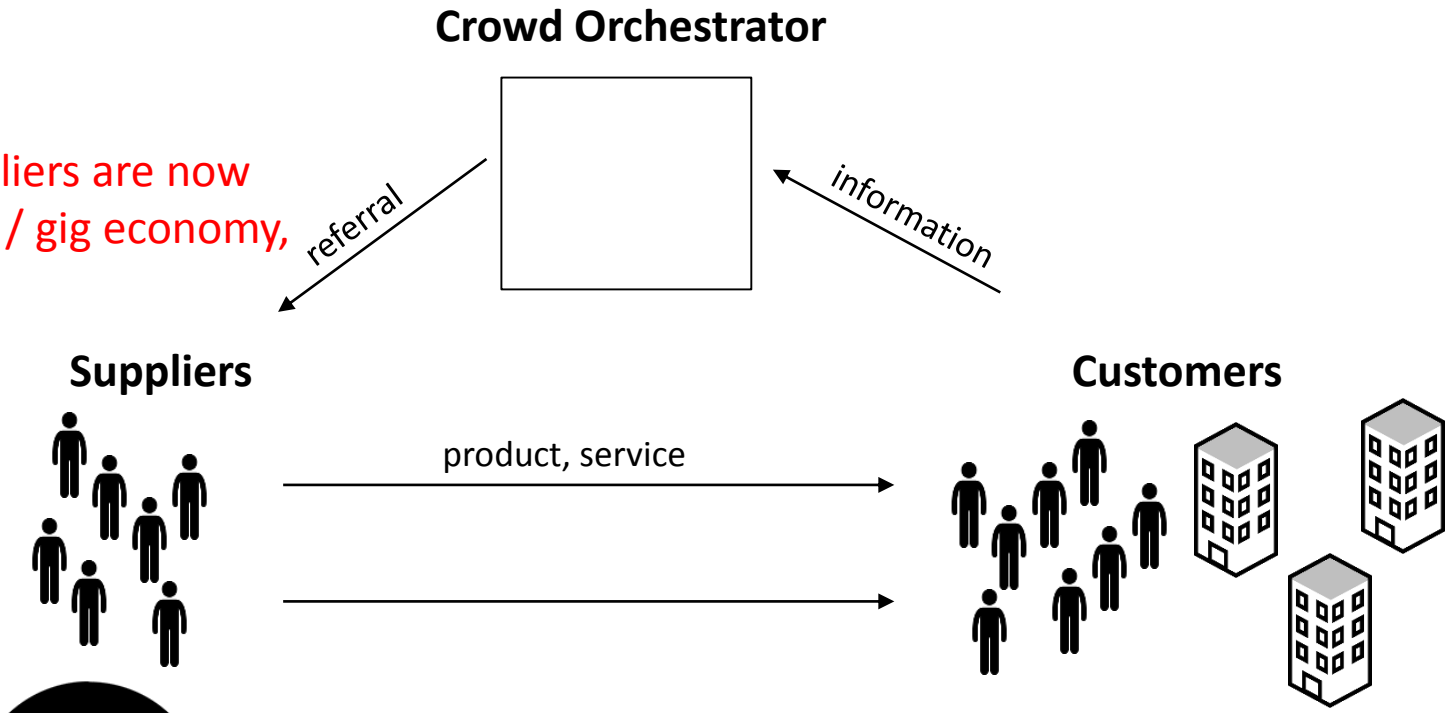
Crowd Orchestrators

Note: suppliers are now individuals / gig economy, not firms



UBER

Examples: Crowd Orchestrators

- UberX, Lyft, BlaBla Car, Relayrides (longer term car rental)
- Airbnb (room rental)
- Instacart (grocery shopping service)
- ProsperFunding (match borrowers with lenders)
- Kickstarter (match investors with creators)
- StubHub (organize resale of tickets; owned by eBay)
- Amazon Mechanical Turk (on-line tasks)
- TaskRabbit (find a nanny, gardener, furniture assembly, etc.)
- Donorschoose (link donors with causes)
- Teladoc (telehealth provider)
- Innocentive (link innovation problems to inventors)

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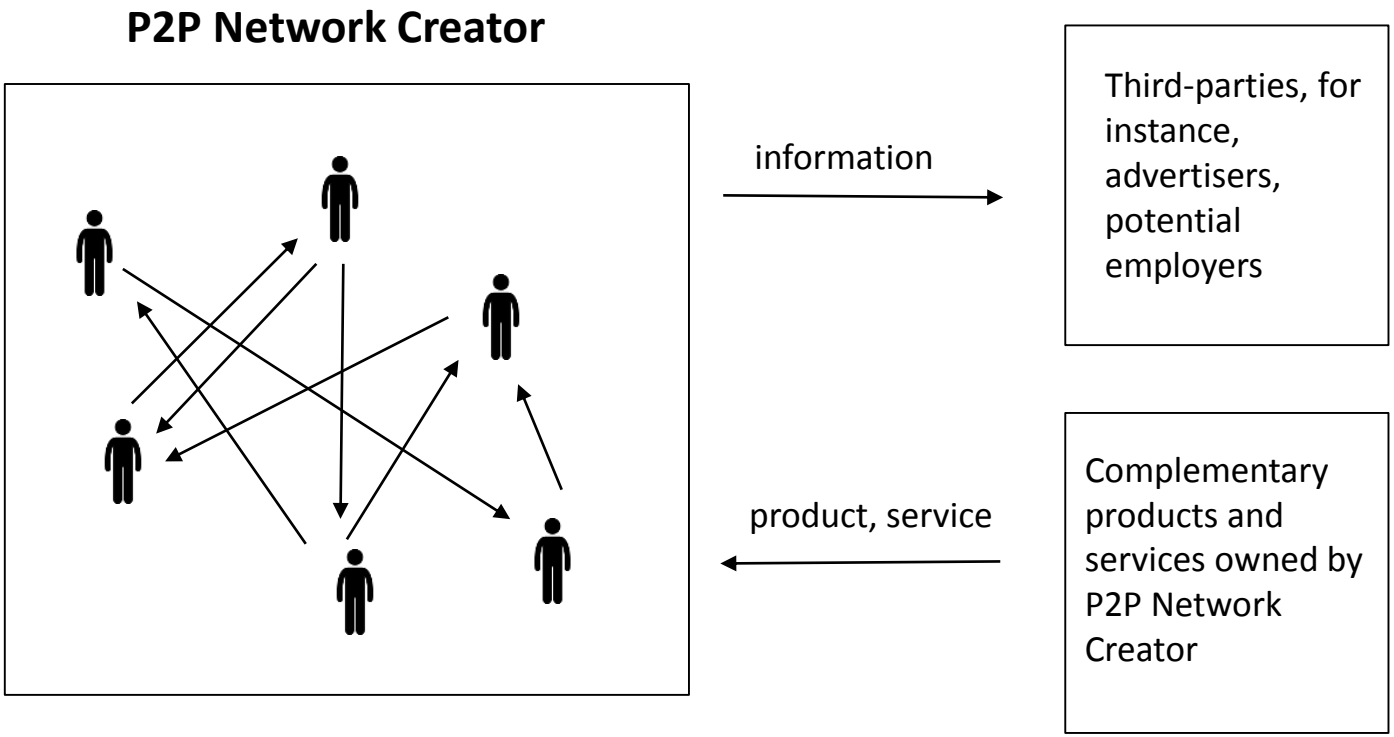
P2P Network Creator



Transaction P2P Network Creators

- We can distinguish between three types of P2P Network Creators, depending on they monetize the network

- Transaction P2P Network Creators charge for using the network, either as a transaction fee or as a membership fee.

- Examples:
  - Peloton (truck platooning) and Blabla cars (ride sharing)
  - Betfair (allow people to bid on sporting events against each other, not against a bookmaker)
  - Transferwise (P2P currency exchange)
  - Match.com, eHarmony.com

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Access P2P Network Creators

- **Access P2P Network Creators do not charge to join the network, but they sell access to the network participants and to the data that these participants create. Most frequent buyer are advertisers.**

- **Examples:**
  - **LinkedIn**
  - **Facebook**
  - **YouTube**
  - **Pinterest**
  - **Tripadvisor**
  - **Yelp**

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Complementor P2P Network Creators

- Complementor P2P Network Creators establish networks, usually with free membership, as a complementor to other products or services they sell.

- Examples:
  - Nike sponsored on-line running “clubs”
  - On-line patient communities created by health care providers or pharmaceutical companies

- As before, firms may engage more than one operating model:
  - Venmo: Charge for transactions using credit cards; free transactions for internal transfers.

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Summary of Delivery Models: Beyond Platforms and Sharing Economy

	Connected Producer	Connected Retailer	Market Maker	Crowd Orchestrator	P2P Network Creator
Firms					

What capabilities does it take to run a car company?
What is BMW's attitude towards an emerging crowd orchestrator or P2P network?

Connectivity and Disruption: New Delivery Models are "A Change in Columns" (impacts the Core Competences)

	Connected Producer	Connected Retailer	Market Maker	Crowd Orchestrator	P2P Network Creator
Firms	BMW HYATT Britannica CD97 Walt Disney			UBER airbnb	Wikipedia Pokémon GO

Connected Strategy Matrix

Think about firms (established and new start-ups) in your industry/project and map them in the matrix shown below.

Identify (a) new opportunity for you (b) disruptive threat.

	Connected Producer	Connected Retailer	Connected Market Maker	Crowd Orchestrator	P2P Network Creator
Respond-to-Desire					
Curated Offering					
Coach Behavior					
Automatic Execution					

Revenue Models

Smart Connect XL3000

- The average American spends $340 per year on dental care, almost half of which is paid out of pocket and the other half paid by insurance. Put differently, in the next 30 years of their life, the average American, will spend some $10k on dental care.
- You develop the Smart Connect XL 3000 toothbrush which detects plaques or cavities before patients or even dentists are aware of the problem, it guides the patient in the brushing process, and it automatically makes an appointment with a dentist when needed.
- It has a cost of $300 per unit in production and the toothbrush would last for 5 years, except for the toothbrush head that should be renewed every six weeks.
- At what price would you sell the Smart Connect XL3000? Or better: What revenue model would you pick?

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Revenue model options

- Extract value through purchase price (e.g., $600)
- Extract value through renewables: e.g. $300 but high price on replacement heads
- Subscription on replacement heads: $10/month
- Subscription: get toothbrush for free but pay $40/month including replacement heads (like cell phones)
- $0.1/minute of brushing?
- Optional app that helps the customer in her brushing behavior for a one time fee of $10 or a monthly subscription
- Give the toothbrush to the insurance companies for free and then ask to be paid 50% of the savings relative to past patient expenses.
- Collect data about brushing behavior, including what time our customer gets up in the morning and when (or what!) they eat. Sell this data to Starbucks the customer's life insurance.
- Become a trusted partner in oral hygiene and have the Smart Connect XL3000 be the platform on which all oral care transactions are organized, making money on toothpaste or dental floss.

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Revenue models for Connected Strategies

- Change WHAT is paid for
  - Product vs service
  - Pay-for-Performance
    - overcome risk aversion in presence of unknown potential
- Change WHEN the payment is made
  - Pay-as-you-go/use/as value is created (e.g., freemium)
    - overcome myopia of consumer
    - requires change of HOW payment is organized
- Change WHO is paying
  - think eco-system, not supply chain
- Change WHY do customers pay?
  - move up the Why-How ladder
- Change the currency
  - Data vs Money

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Technology Infrastructure

Nicolaj Siggelkow & Christian Terwiesch

Sensing technologies

In this category, fit all technologies that directly measure aspects of the world that hold clues about the needs or desires of customers or that help users express their needs.

- **Sensors (embedded in devices, in roads, wearable or ingestible)**
- **Gesture and voice interfaces**
- **Conversational platforms that make it easier for customers to express their needs (and ask for clarification if the need is not completely understood)**
- **Augmented and virtual reality**

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Transmitting technologies

- High-speed internet at homes and offices
- Smartphones
- Network slicing with 5G
- Bluetooth Low Energy
- LiFi (wireless communication using light)
- LoRa (wireless data communication over ranges up to 10km with low power consumption)
- Blockchain (improving trust of transactions that are being carried out over networks)

Analyzing technologies

- Rapid decrease in costs of computing
- Rapid decrease in costs of data storage
- World-wide cloud computing is feasible (also allows data to stay in particular geographic areas)
- Machine learning and deep learning algorithms
- Quantum computing

Reacting technologies

- Improvements in AI are allowing automated responses at vast scale that are becoming more and more personalized (e.g., Google Duplex)
- 3D printing
- Advanced robotics
- Autonomous vehicles
- Drones

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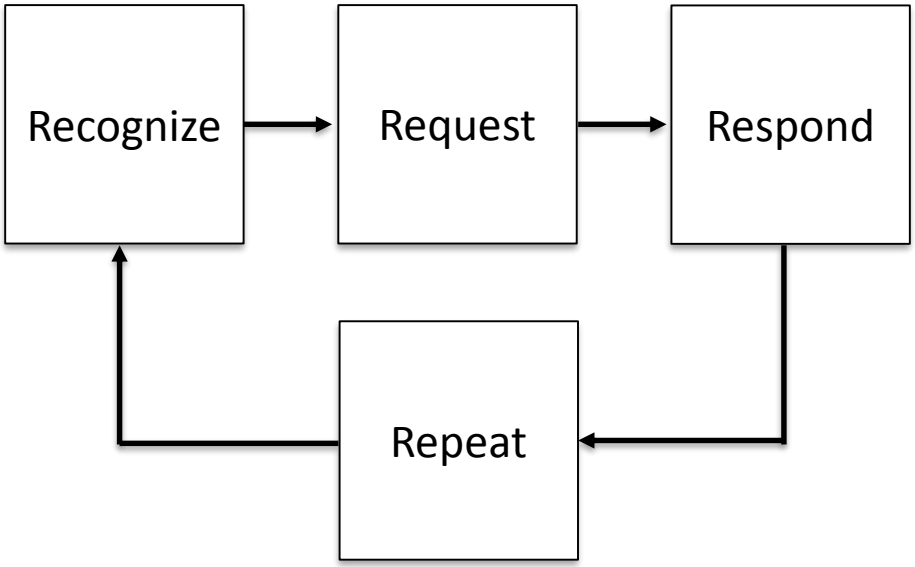
Connected strategies

Connected Customer Relationship

Connected Delivery Model



Connection Architecture

Revenue Model

Technology Infrastructure

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