Proximity detection using IoT technology
Opportunities for Telenor
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Telenor Research

Proximity detection…

… and IoT technology (beacons) …

Qualcomm

Estimote

Beaconic

Kontakt.io

Swirl

PayPal Beacon

Gelo
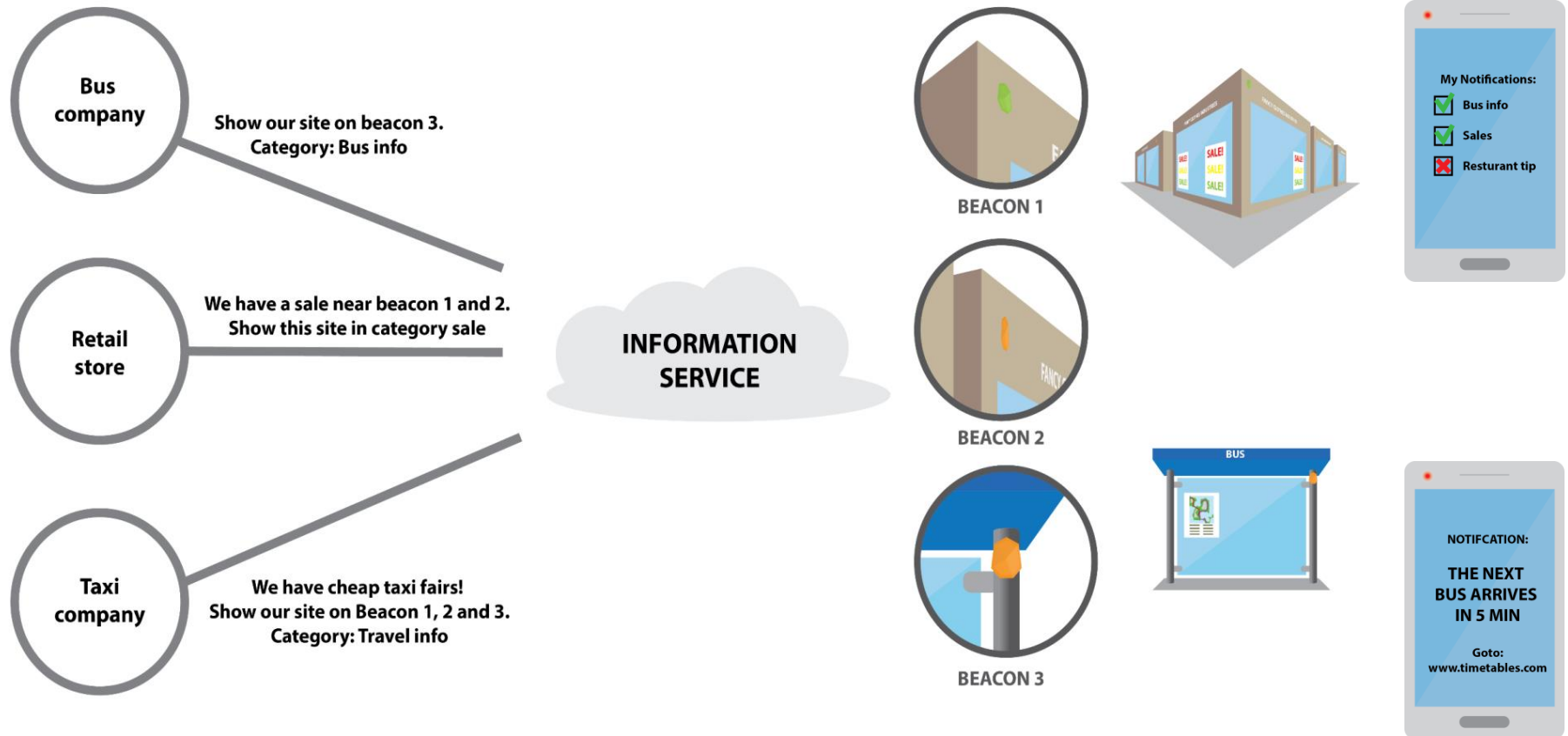
OnyxBeacon

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SmartBlink™

SmartBlink Beacon - Proximity Based Marketing Made Easy!

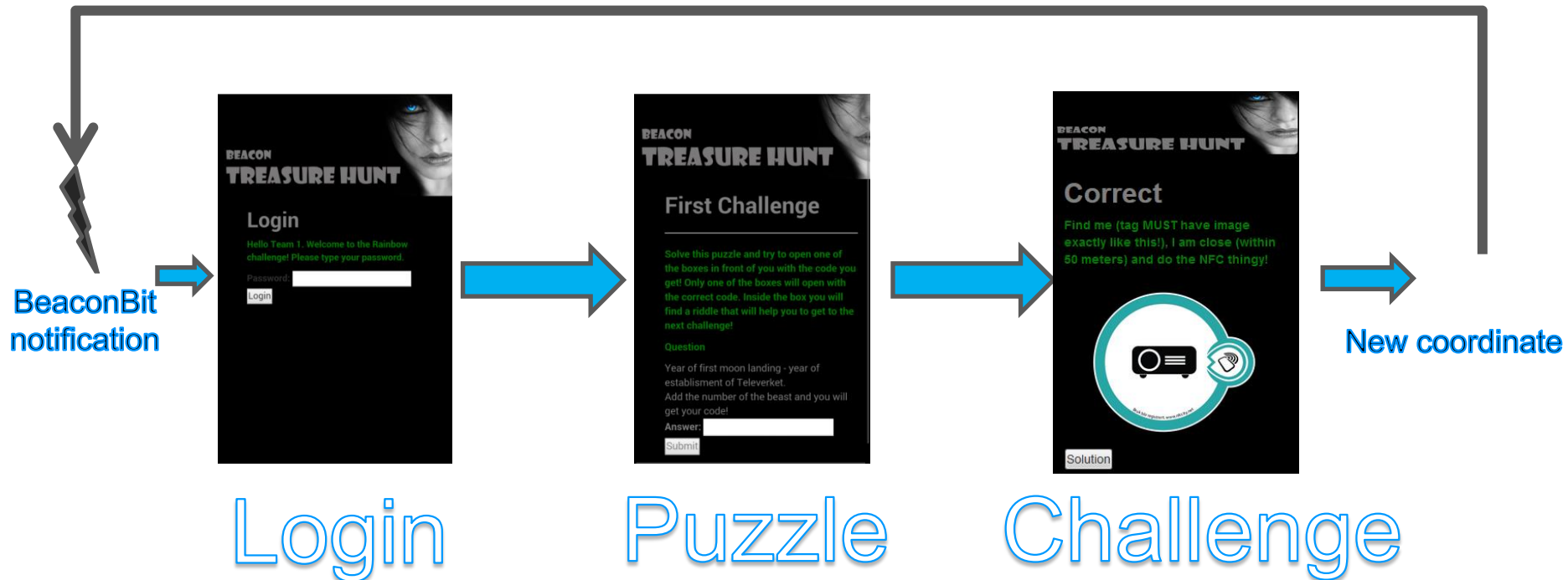# Proximity based marketing includes

- Ads/notification/offers

- Guidance (in store)

- Personalization

- Payment assistance

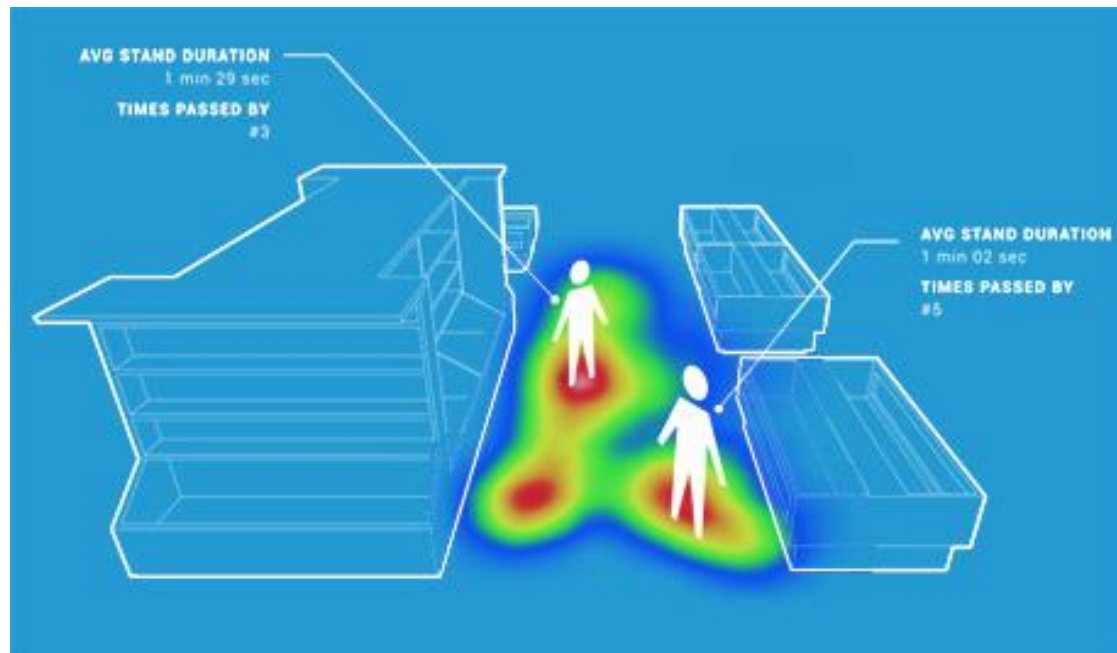# We created BeaconBits, a cloud based backend and mobile app for beacons

Bus company — Show our site on beacon 3. Category: Bus info

Retail store — We have a sale near beacon 1 and 2. Show this site in category sale

Taxi company — We have cheap taxi fairs! Show our site on Beacon 1, 2 and 3. Category: Travel info

INFORMATION SERVICE

BEACON 1

BEACON 2

BEACON 3

My Notifications:
- ☑ Bus info
- ☑ Sales
- ☒ Resturant tip

NOTIFCATION:

THE NEXT BUS ARRIVES IN 5 MIN

Goto: www.timetables.com

BeaconBits

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We used BeaconBits to create a Treasure Hunt

BeaconBit notification

Login

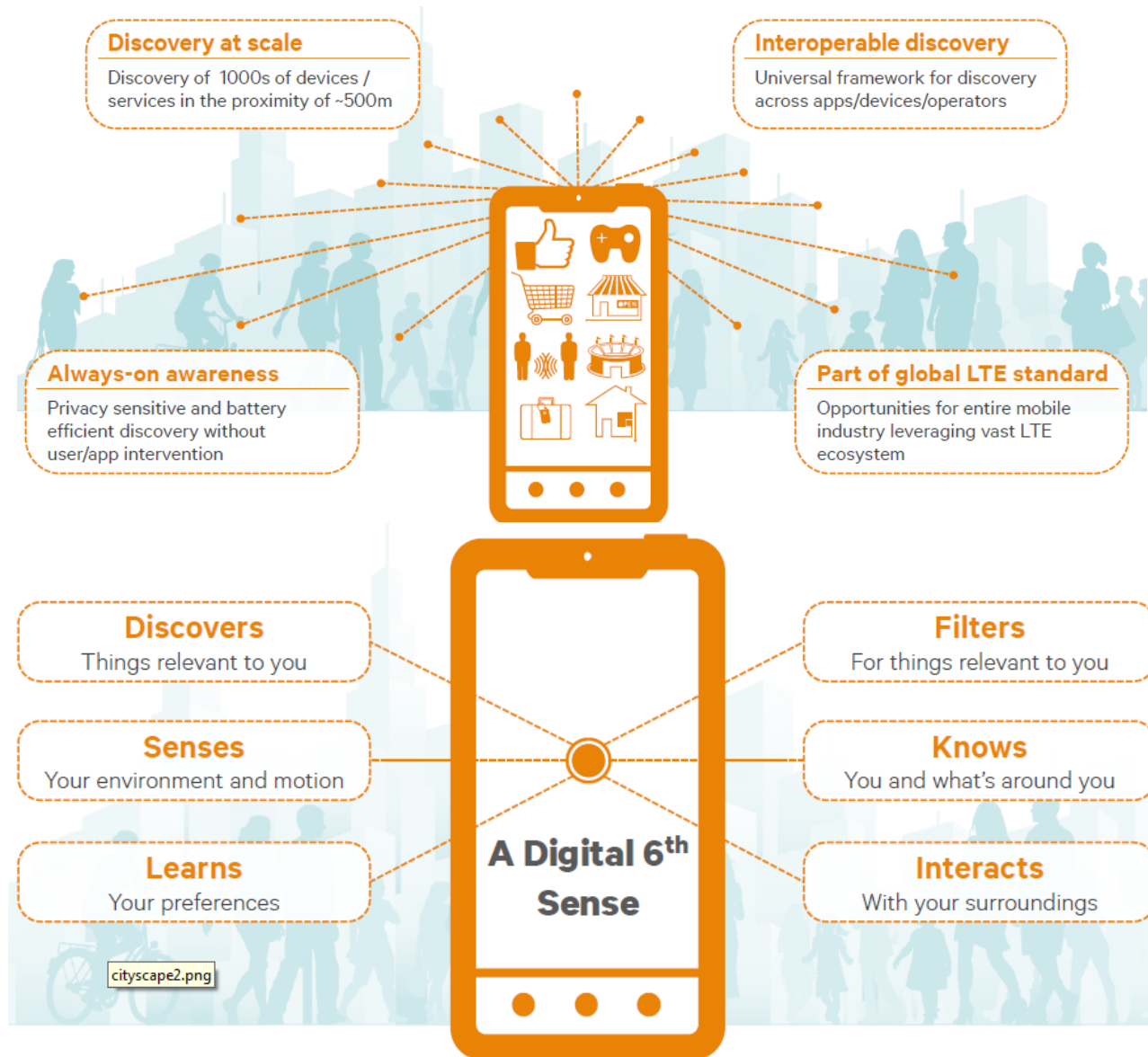**Puzzle**

Challenge

New coordinate

As for many IoT services the value is in the data captured

- Resell it

- Use it for customer insight

  - adaption/improvement of services based on observed behaviour
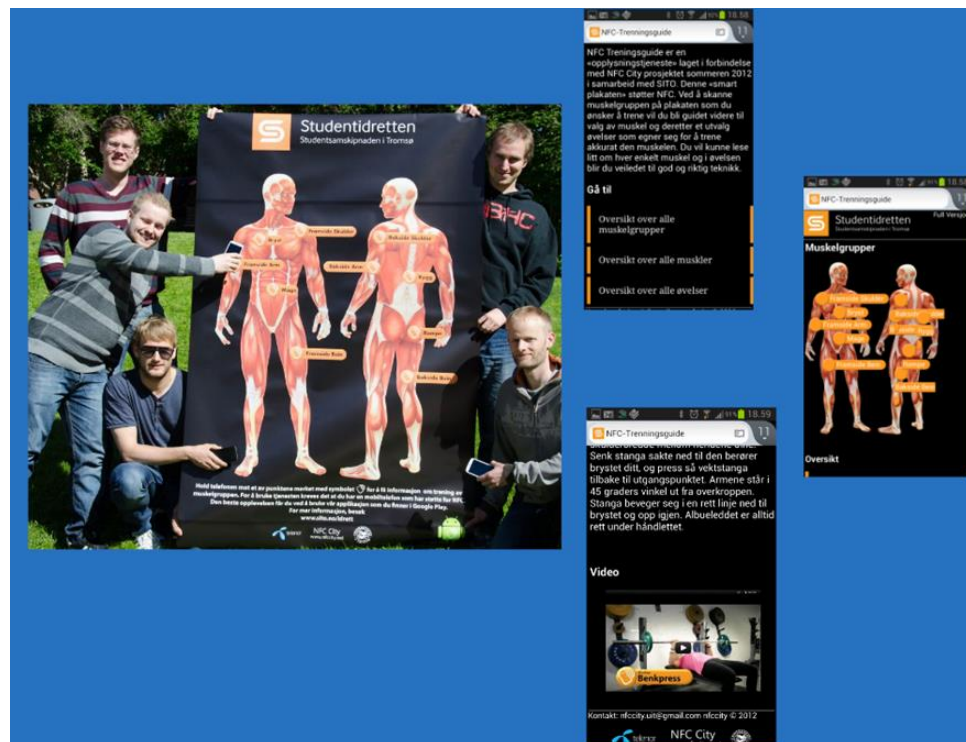
- Create new services (with 3. parties)

Other technologies can be used for proximity detection

Discovery at scale
Discovery of 1000s of devices / services in the proximity of ~500m

Interoperable discovery
Universal framework for discovery across apps/devices/operators

Always-on awareness
Privacy sensitive and battery efficient discovery without user/app intervention

Part of global LTE standard
Opportunities for entire mobile industry leveraging vast LTE ecosystem

Discovers
Things relevant to you

Filters
For things relevant to you

Senses
Your environment and motion

Knows
You and what's around you

Learns
Your preferences

Interacts
With your surroundings

A Digital 6th Sense

cityscape2.png

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NFC smart posters are proximity detection technology (if backend logs actions)

- NFC - "Near Field Communications"
- Tested in NFC City project (2010-2014)

Existing proximity detection technology have different characteristics

Technology	Reach	Price	Power	Mode
QR-code	1 meter	< 10 kr	No	Passive (one-to-one)
NFC-tag	0,1 meter	10 kr	No	Passive (one-to-one)
Bluetooth Smart Beacon	100 meter	100 kr	Yes	Active (one-to-many)
LTE Direct	500 meter		Yes	Active (one-to-many)

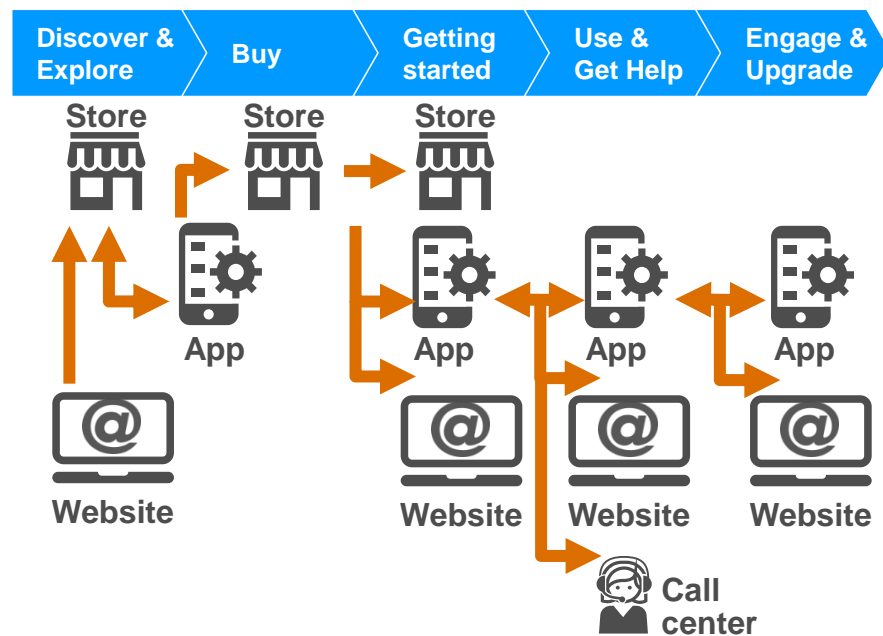# In general we want to use it in connection with our customer journey

discover | **explore** | **buy** | **use** | **get help** | **engage**

OMNICHANNEL…

- stores
- online
- social
- call center

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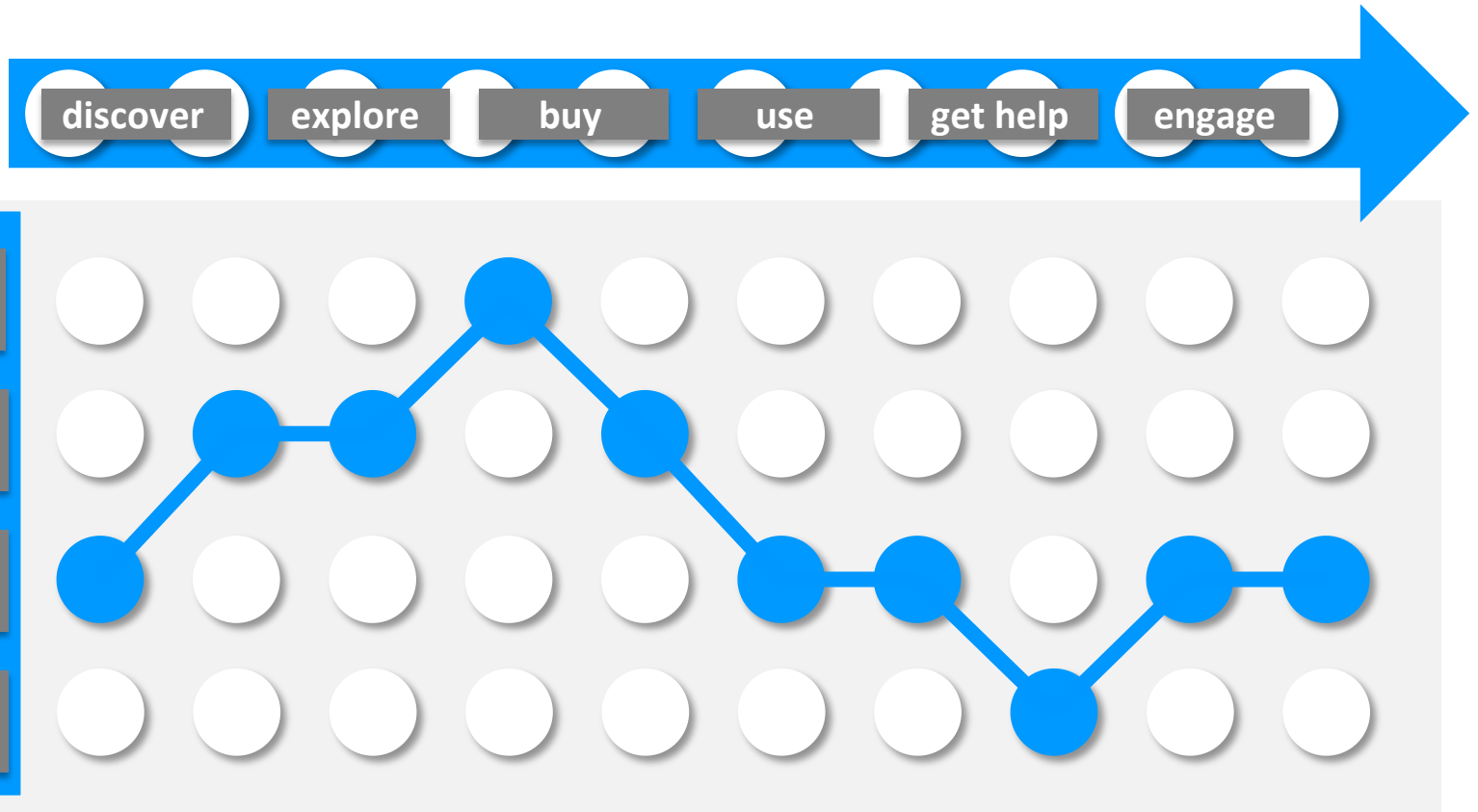
Omnichannel enhancements

Simple, "classical" customer lifecycle journey

Discover & Explore	Buy	Getting started	Use & Get Help	Engage & Upgrade

Store → Store → Store → Store → Store

Call center
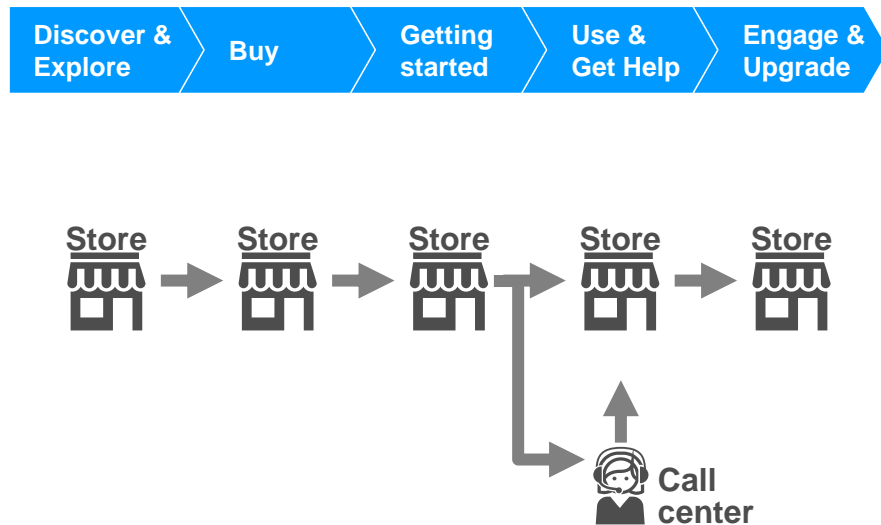
Complex customer journey in the digital world

Discover & Explore	Buy	Getting started	Use & Get Help	Engage & Upgrade

Store   Store   Store

App   App   App   App

Website   Website   Website   Website

Call center

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Specific use cases we are looking into include…

- Telenor shops
  - Sales tips available on salespersons smartphone

- MyTelenor app
  - Proximity based offers/ads

- Omnichannel usage
  - personalization

- Reuse/resell solution
  - Shopping malls
  - Cruise ships

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Questions?

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