



**SURREY
BUSINESS
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UNIVERSITY OF SURREY

THE EVOLUTION OF RETAIL IN THE AGE OF AI

Professor Sabine Benoit



AI Won't Replace Humans — But Humans With AI Will Replace Humans Without AI



Technology won't replace food stores, but stores with AI will replace stores without AI.

In future, every single technology product will include an intelligence component.

WHAT IS AI? WHAT IS “JUST” TECHNOLOGY?



Three components of smart, AI-enabled products:

- Physical component: e.g., sensing
- Intelligence component: e.g., algorithms
- Connectivity components: e.g., Bluetooth

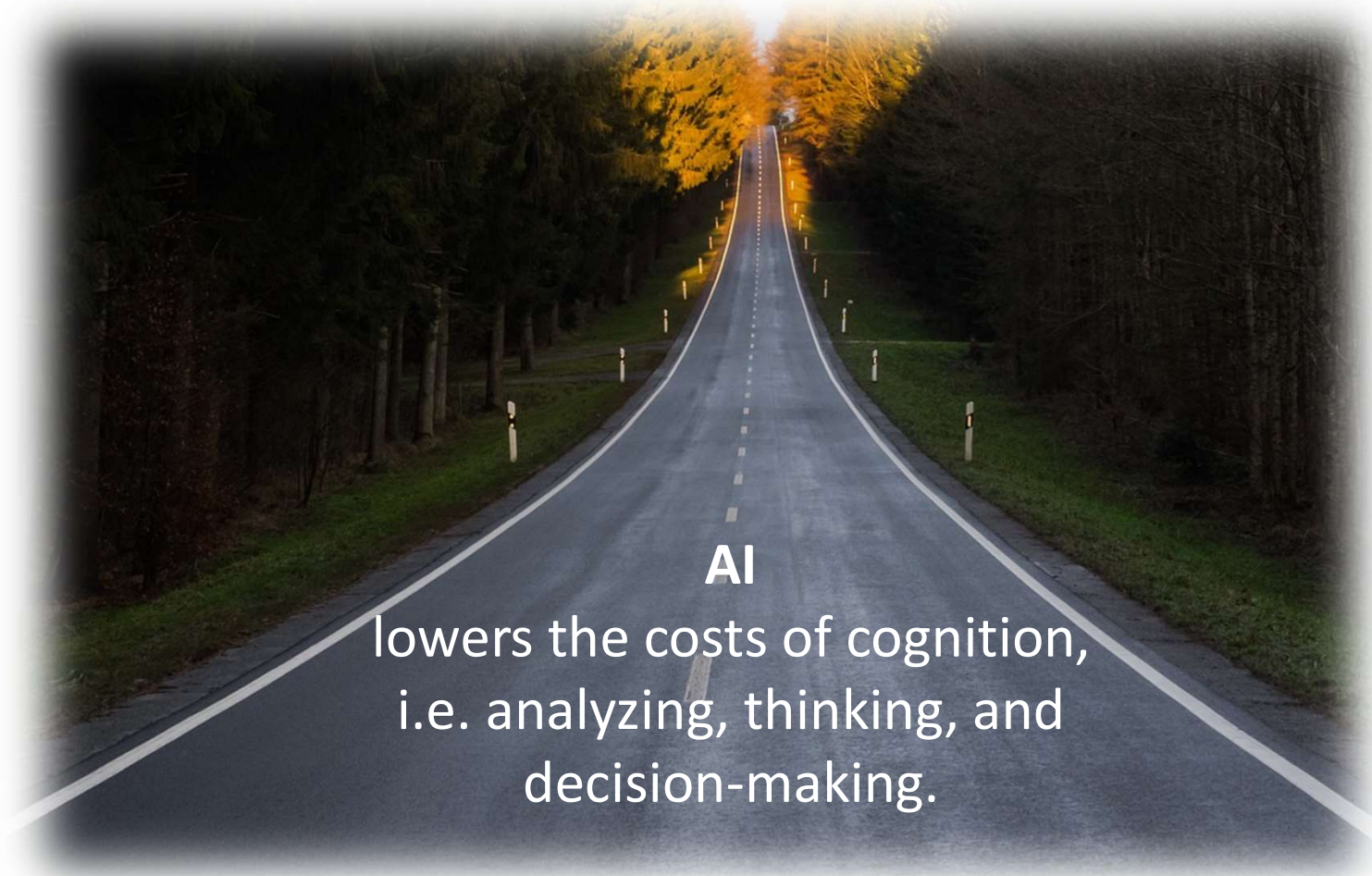
LOOKING BACKWARDS



Internet: Lowering the costs (and thus democratizing) information access and transmission.



LOOKING FORWARD



TWO PROBLEMS:



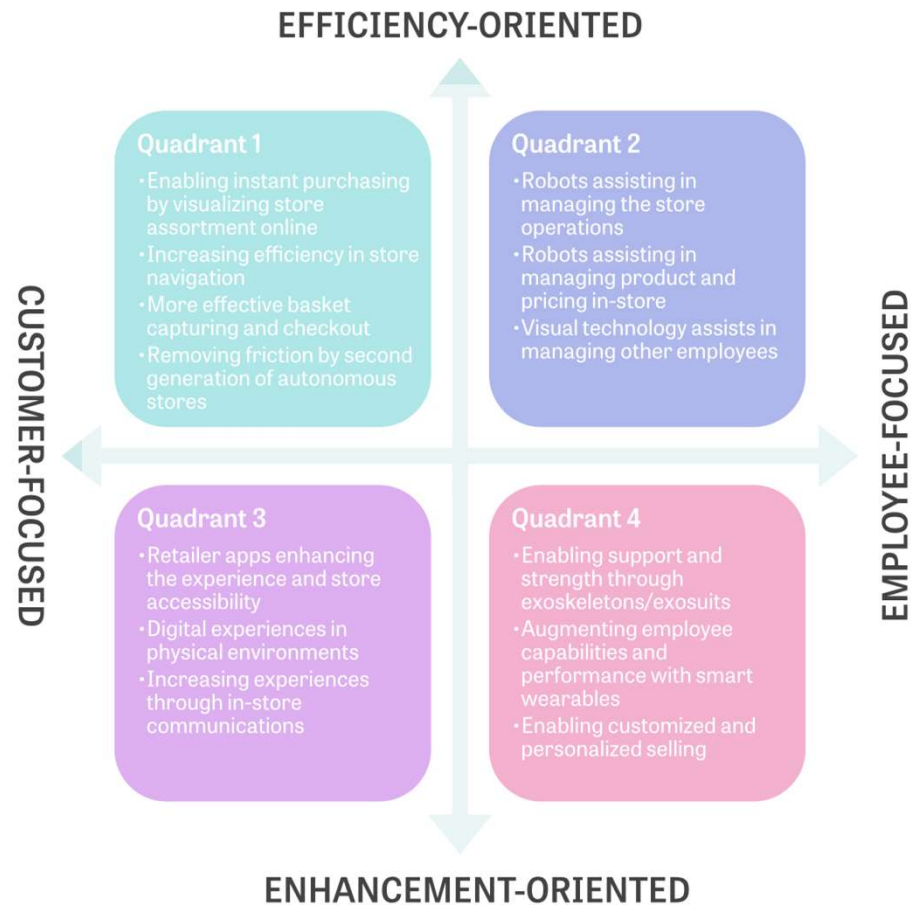
Choice overload



Technology excitement



FRAMEWORK SUPPORTING DECISION MAKING



INCREASING CUSTOMER EFFICIENCY



EFFICIENCY.

CUSTOMER

Quadrant 1

- Enabling instant purchasing by visualizing store assortment online
- Increasing efficiency in store navigation
- More effective basket capturing and checkout
- Removing friction by second generation of autonomous stores

INTERPLAY ONLINE & OFFLINE



Buy Online Pickup In Store



BOPIS

Search Online Pickup in Store



SOPIS

SOPIS ACROSS ECOSYSTEMS



Google

aaa batteries near me

Sign

All Shopping Maps Images Videos More Tools

About 20,200,000 results (0.67 seconds)

Sponsored

Products Comparison Sites

Duracell Simply AAA...	AAA - 100x Genuine...	Duracell Plus AAA Batterie...	Panasonic AAA (1.5v) Zinc...	Duracell AAA Batteries
£4.99	£14.99	£12.95	£2.40	£2.83
Amazon.co.uk	TradeNRG.co.uk	BuyaBattery.co.uk	Amazon.co.uk	Quickbit.co.uk
By Google	By Product...	By Google	By Google	By Product...



In-store availability

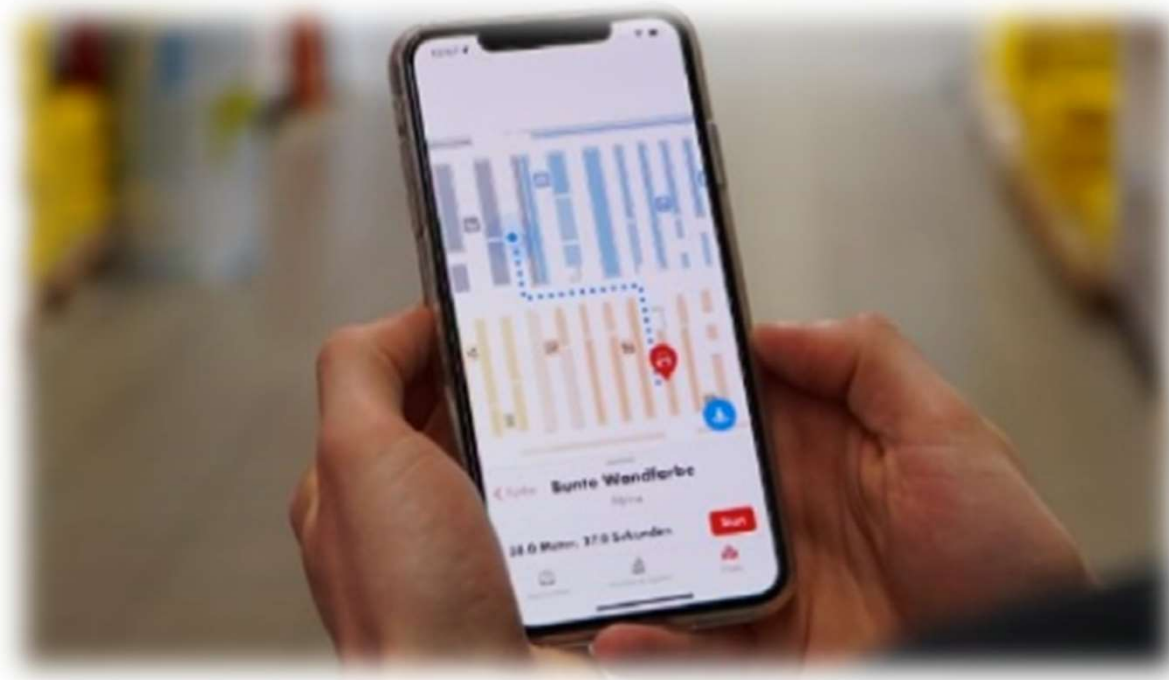
Rating Hours

Argos Cheapside
3.1 ★★★★★ (176) · ££ · Department store
66 Cheapside · In Crown Court Ec2 · 0345 656 4251
Closed · Opens 9 am Mon
In stock: AAA batteries · Updated today

Argos Pimlico (Inside Sainsbury's)
3.7 ★★★★★ (275) · ££ · Department store
99 Wilton Rd · In Sainsbury's · 0345 850 8848
Closed · Opens 8 am Mon
In stock: AAA batteries · Updated today



IN-STORE NAVIGATION



Example tech providers:



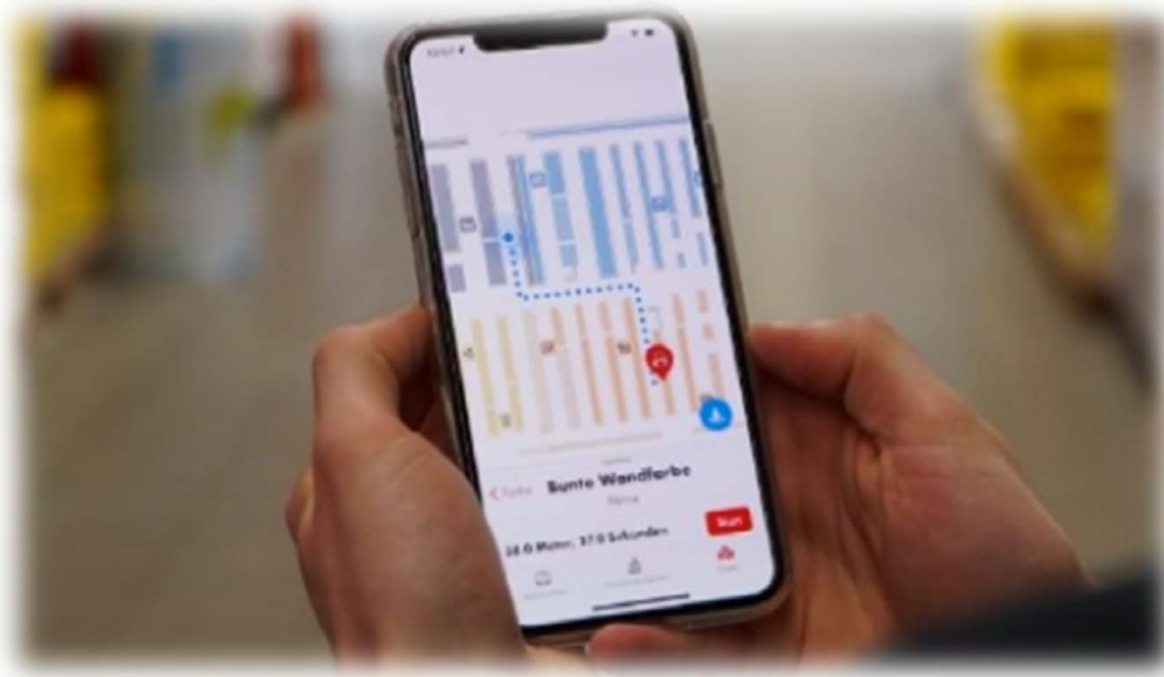
ESL integration



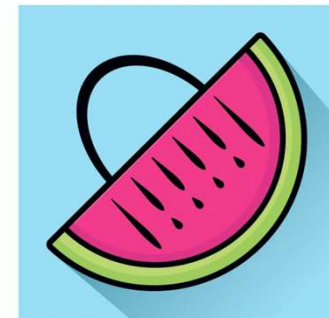
In-store screen integration



IN-STORE NAVIGATION



Integration with shopping list

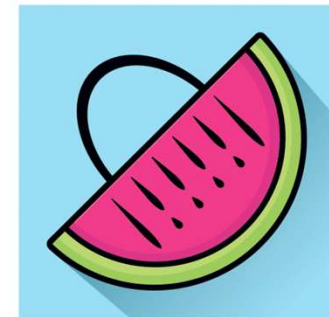


Ubamarket[®]
shop smarter.



Ubamarket scan-as-you-go app adds allergen alerts feature

By Andrew Don | 23 October 2018 | 2 min read



Ubamarket[®]
shop smarter.

SMART SCALES



Automatic image recognition of product



SMARTER BASKET CAPTURING



ZARA

UNI
QLO

SMARTER CHECKOUT WITH FACIAL RECOGNITION



INCREASING EMPLOYEE EFFICIENCY



EFFICIENCY-ORIENTED

Quadrant 2

- Robots assisting in managing the store operations
- Robots assisting in managing product and pricing in-store
- Visual technology assists in managing other employees

EMPLOYEE-FOCUSED

SECURITY ROBOTS TO CURB CRIME



Convenience sector in 2024:

- Theft: ~x5
- Violence ~x2*

*ACS crime report, 2023 – 2024

SHELF TRACKING ROBOTS



Example:

brain
corp

SHELF TRACKING DRONES



SERVICE ROBOT



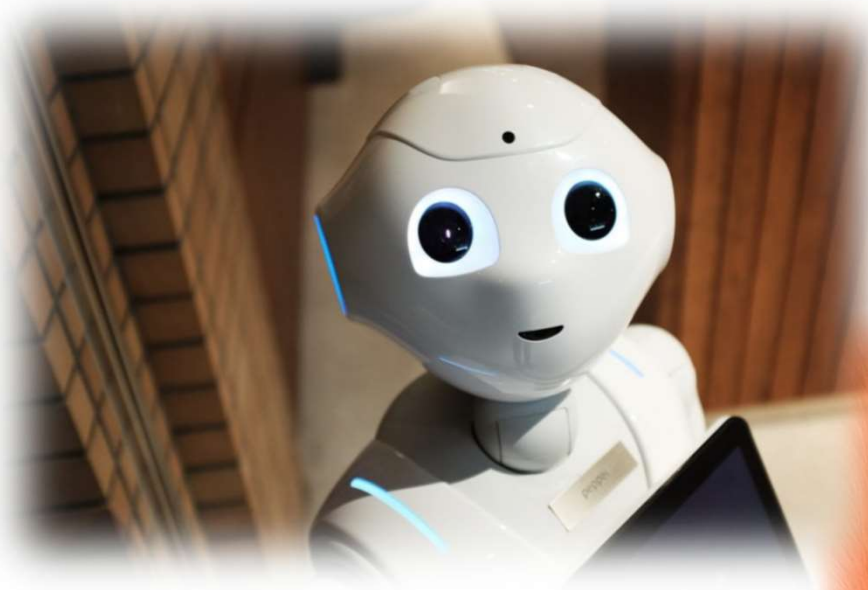
Example



Restaurant**Robots**
By RobotLAB



MULTI-LINGUAL ROBOTS



CLEANING ROBOTS



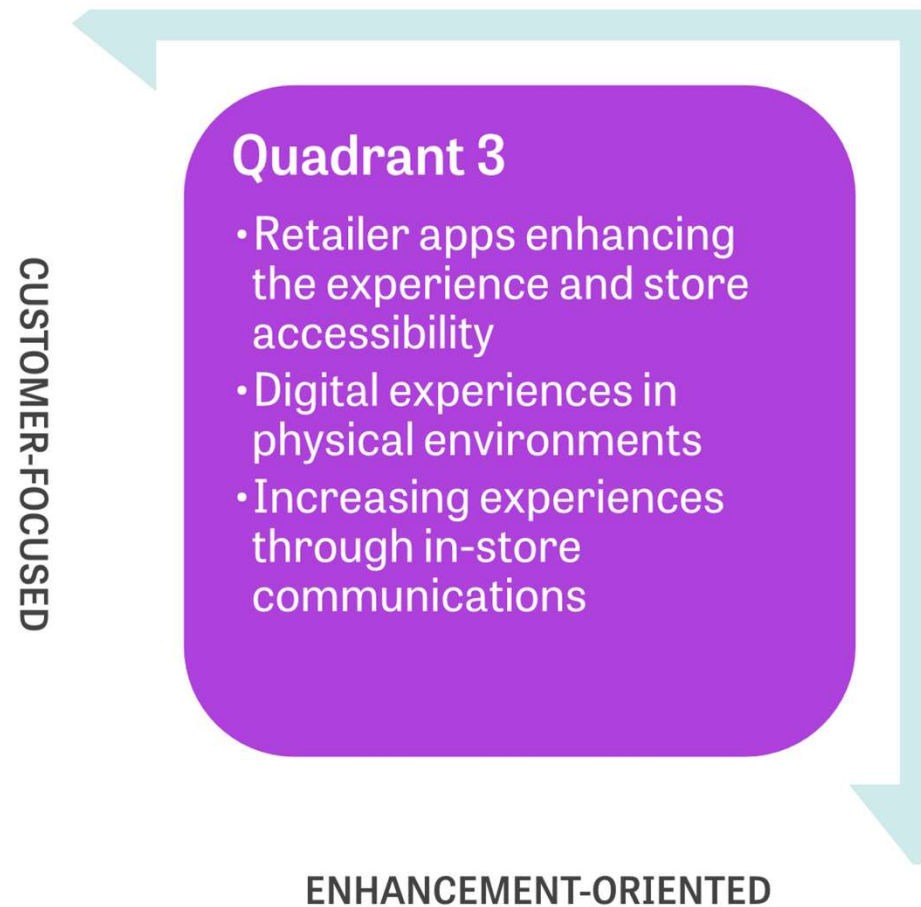
SWEETHEARTING DETECTION



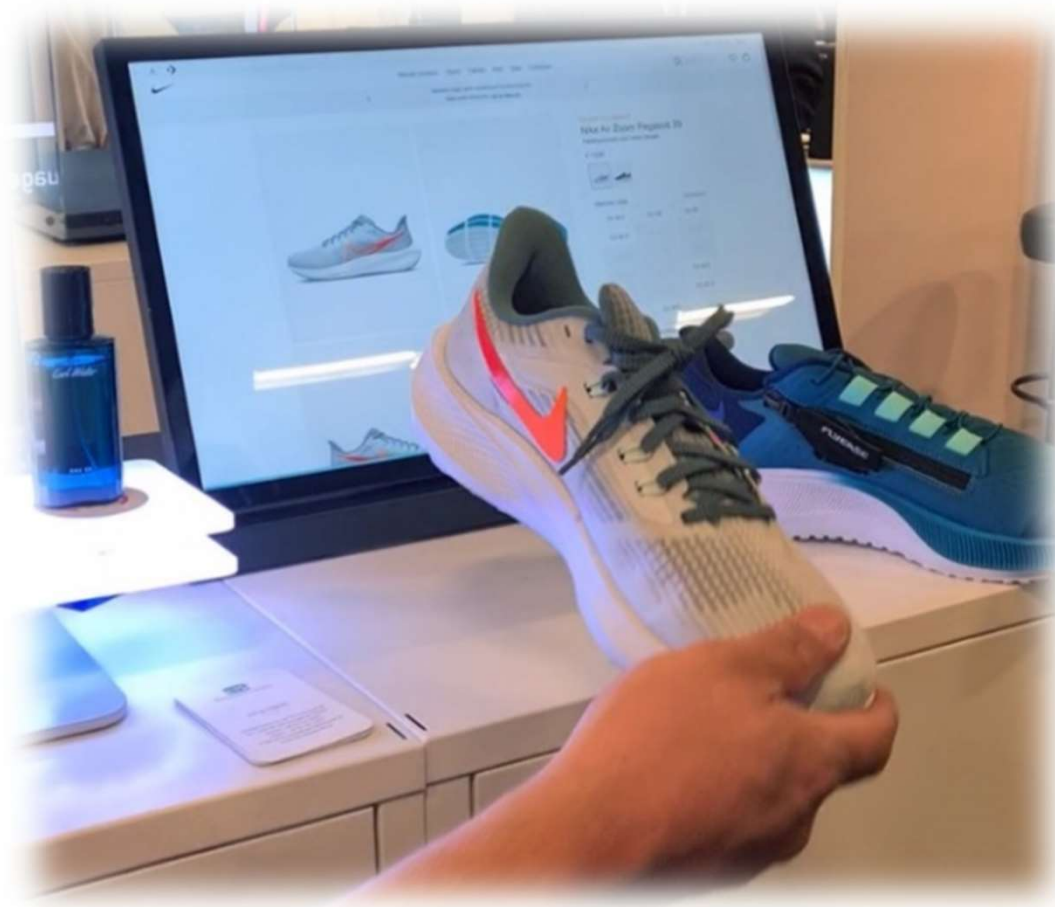
MULTI-FUNCTION ROBOTS



ENHANCING CUSTOMERS



ENHANCING CUSTOMERS



SMART SHELVES FOR INSPIRATION



TESCO Real Food

Recipe, ingredient, keyword...



Recipes How to Meals Seasonal Ingredients Affordable living Healthy recipes Your Real Food

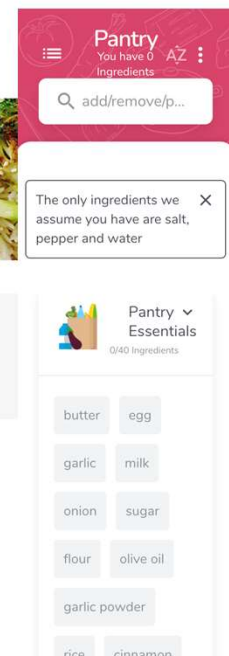
Home > Recipes > Dinner ideas and recipes

Searching for inspiration?

Sign in and save plant based recipes straight to your online binder



Dinner ideas and recipes



<https://www.supercook.com>

SMART MIRRORS & SCREENS



ENHANCING EMPLOYEES



Quadrant 4

- Enabling support and strength through exoskeletons/exosuits
- Augmenting employee capabilities and performance with smart wearables
- Enabling customized and personalized selling

EMPLOYEE-FOCUSED

ENHANCEMENT-ORIENTED



HEADSETS



Example tech provider



BODYCAM S



SMART GLASSES



SAP Innovation Lab's 'Total Customer Recall' Solution to Give Employees Access To Key Customer Metrics on Smart Glasses

CUSTOMER MOOD SENSING



Recent visitors (20)


Frequent Visitor


Gender: Male
Age: 31
Mood: Neutral


Previous visits: 6

11th April 17:01 (1 mins): Neutral
11th April 18:55 (1 mins): Neutral
11th April 18:54 (1 mins): Neutral

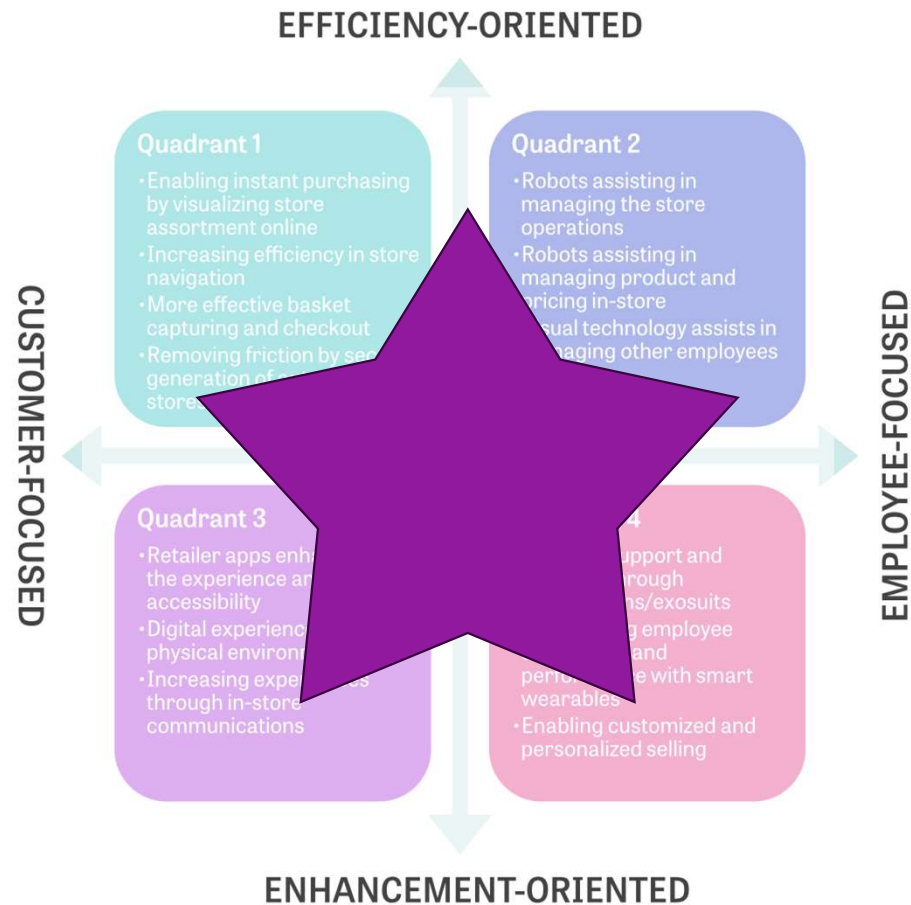
Wine Recommendations:

 **Château Larmarch, Grand Cru Classé, St-Émilion 2014**
Red: St-Émilion, France
Medicinal fruit with spice and vanilla.
\$20.24 (\$22.00)

 **Château de St. Cosme, Gigondas 2015**
Red: Rhône Valley, France
Dark, tobacco, rosemary, fig, muscular energetic.
\$39.56 (\$43.00)

 **Château Canon La Gaffelière, St-Émilion 2014**
Red: Bordeaux, France
Fig, blackberry, tobacco, warm ganache, structured.

INCREASING EFFICIENCY AND ENHANCING



AUTONOMOUS STORES





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