



Reinventing the grocer

Introduction to the document

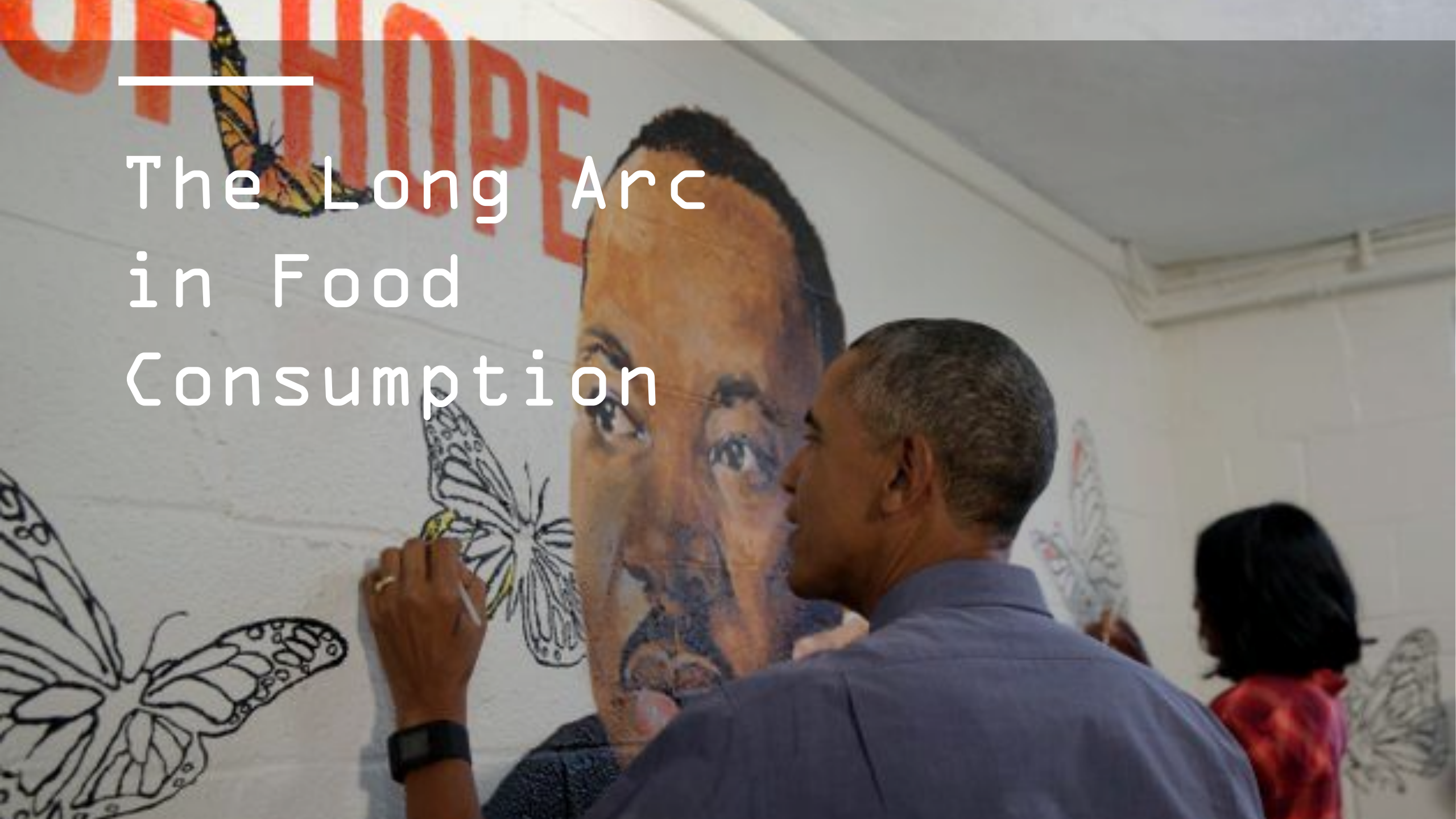
This document presents a long-term view on the future of the grocery industry from the lens of the tech' industry – it reimagines the industry as a set of software businesses, with attendant ways of working and business models

- 'Digital transformation' remains in vogue amongst grocers and organisations who supply them (e.g. food producers, CPGs)
- While progress has been made in adding digital channels to these organisations the pan-industry paradigm has also moved on, perhaps to a greater extent than perceived by leaders in the industry
- This short document takes the pan-industry paradigm and applies it to grocery through a series of thought experiments
- The intent of this exercise is to envisage some post-digital states for grocers, describing them as businesses in a world in which digital computing is fully installed in the economy
- From the thought experiments we derive a set of common capabilities that would give grocers optionality about which future state to ultimately pursue – this is important because the future is inherently uncertain
- I have deliberately stated no time horizon for this paper although an assumed time horizon of 'beyond 2040' would be reasonable given the immature state of the market today; we should therefore expect some of the models to come into play in the next five years
- This paper separates the long-term structural changes that that industry will undergo as it evolves into a Digital Economy mode from the cyclical effects of the 2020 Pandemic and resultant recession. I have included commentary on how aspects of the longer-term transformation may be accelerated or decelerated by the events of 2020 to aid use of the document as a strategic tool
- A final note: the document is deliberately technical in nature and assumes a degree of knowledge of the terminology and sentiment of the Digital Economy's techno-economic paradigm. This choice was made to restrict the document to a reasonable length at the cost of accessibility



Matthew Guest, Principal,
Monitor Deloitte

The Long Arc in Food Consumption



Techno-economic trends

People generally overestimate technological and social development in the short term and underestimate the scale of long term changes – it is therefore important to frame a discussion about the future of this market with some of the long term social changes that will impact it

'Long arc' trends

Life Expectancy Min/ Maxxing

- Advances in medical diagnostics enable earlier, more personalised and radically-more effective treatment
- Personalised prevention throughout life through food, exercise, self-affirmation becomes the norm
- Changing work patterns and general economic wealth reduces physical strain on the body
- Sub-culture develops pursuing extremely extended life expectancy in the same

Craft proliferation

- Changing work patterns and automation leads to greatly increased free time relative to previous generations
- Access to information on 'niche' crafts continues to become radically proliferated through social media
- Access to tools for crafts no longer a barrier, particularly as 3D printing proliferates
- The average amount of time people spend learning in their life increases, as do the number of long-term hobbies and side gigs the average person pursues during their (extended) life

Friendly AI

- Each technological revolution has been greeted with scepticism – AI has had more than its fair share as it has been anticipated for some centuries (e.g. Talos, golems, Frankenstein's Monster, HAL, The Terminator, etc...)
- Eventually AI-based resource allocation will become the norm and people will embrace the need to exchange their data for grossly improved access to products and services
- In combination with automation, AI will become as essential and ubiquitous as electricity or latterly the Internet

Net Zero

- From our vantage point an economy without non-zero emissions seems impossible, but it is plausible and essential
- In the long term heavy carbon emitting activities will become 'guilty pleasures' that are accepted as characterful but not over-indulged by the mainstream
- All human technology will be have carbon emissions designed out at all stages, just as 'essential' materials such as CFC, asbestos and radium have been designed out by previous generations

Where the arc bends

A reasonable sign of our social and economic progress will be the point at which technology has rendered high quality nutrition so cheap that it is effectively free to everyone in society and net beneficial to the Earth's biosphere

Every person has affordable (to them) access to high quality nutrition that is appropriate to their personal tastes and needs

The food system is carbon negative at a systemic level and a net enhancer of biodiversity

Personal nutrition is deliberately used throughout life to extend life expectancy and increase quality of life as a critical part of the health system

The food system provides high quality, dignified and fulfilling employment, creating opportunities for people to live happier lives

Although this state will mark a point of inflection in our relationship with food, innovation and economic activity will not cease at this point, it is merely that food will no longer be a cause of social problems and instead be purely something to enjoy and benefit from...

...the central frame for this paper is the route to this nirvana and the roles that different types of organisation might play along it

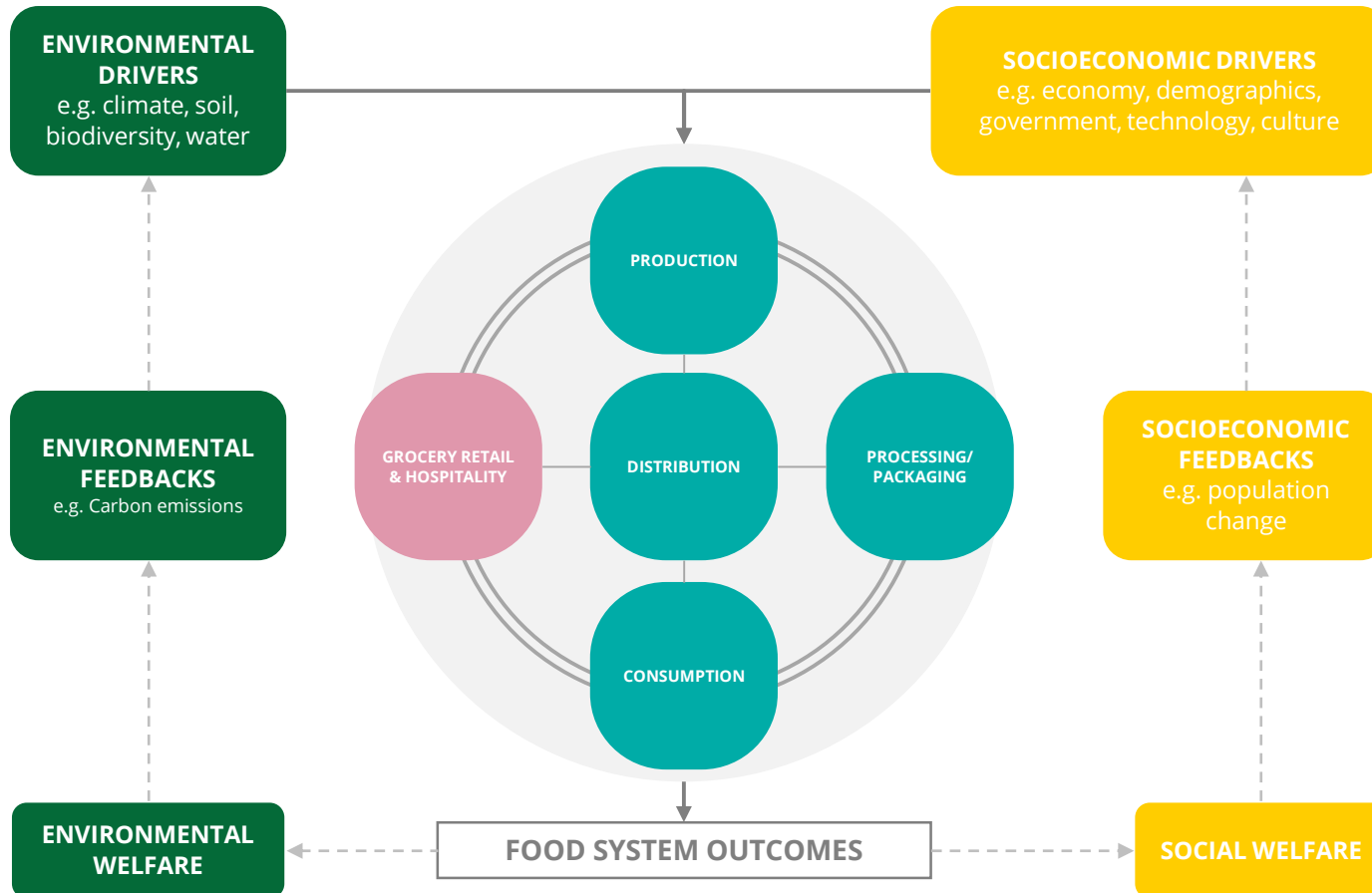
Digital Economy Context



Grocery in the context of the Food System

The grocery industry is just one component of the integrated global food system, a fundamental part of the capitalist economy, but one that is increasingly under strain

*The global food system**

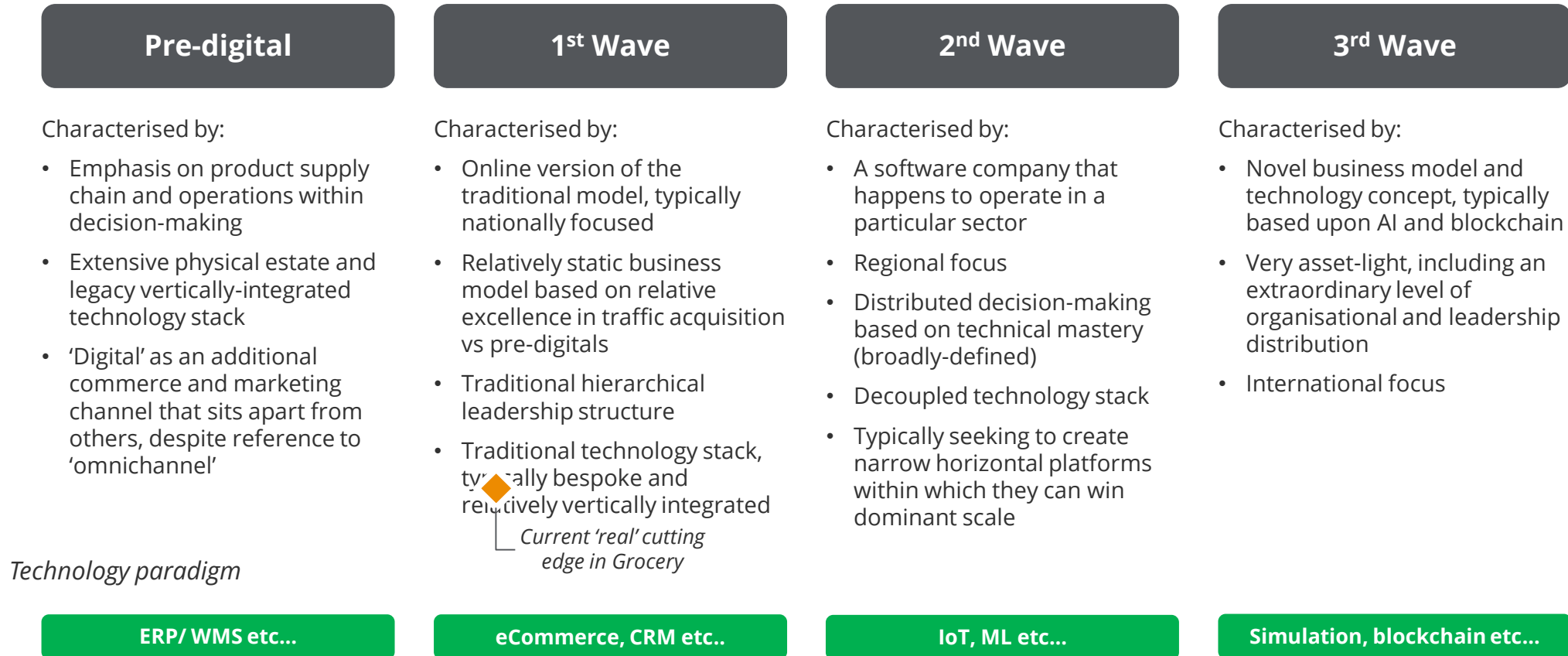


- Poor nutrition (over- and under-consumption) is a first-order problem for health systems
- Agriculture – a fundamental solution to poor nutrition - is a primary polluter, that (if poorly managed) has serious negative effects on the environment – increasing recognition of this is driving punitive regulation in developed markets
- Plastics in the packaging and processing elements of the supply chain drive issues with landfill, petrochemical-related carbon emissions and are thus also the target of punitive legislation
- Carbon emissions in distribution and fulfilment will also likely come under pressure from economies targeting ‘net zero’
- The economic model of retailers has been severely damaged by commoditisation, competition and shifts to digital

Business model evolution

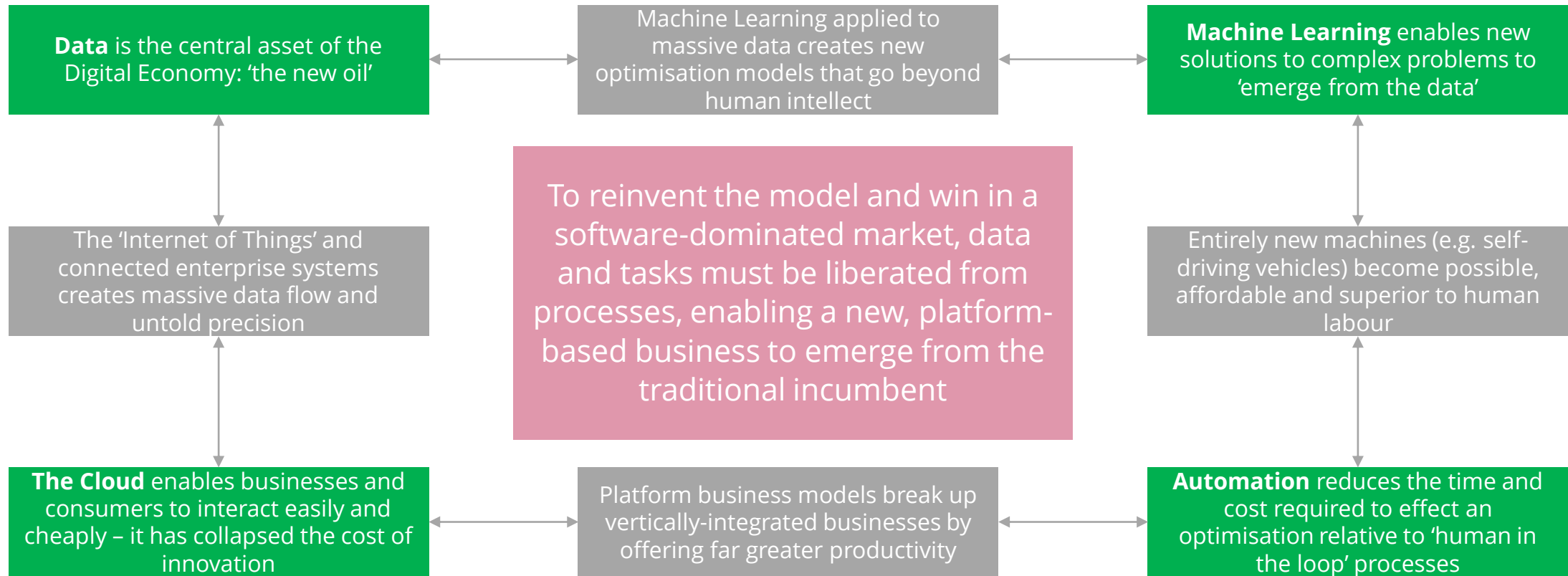
Digital computing has enabled business model reinvention in a series of waves – few traditional organisations have fully installed any of them

We typically classify Digital Economy businesses into four waves:



Consistent themes across industries

The technologies of the Digital Economy significantly alter the dynamics of competition by breaking down the barriers between industries and enabling new models to emerge from the resulting 'sea' of capabilities and capital



Software Is Eating The World

A possible – and powerful – implication of business model evolution is that all of the complex processes and mechanisms that enable traditional enterprises to generate value will eventually just be software applications running on massive platforms

Everything in this advert (from 1991) is now an application on a smartphone

This is a colourful demonstration of a phenomenon that has been playing out across many industries in the last two decades

If we believe that computing will continue to proliferate then we may also believe that:



- The cost of directly or indirectly (via the cloud) adding computing power and connectivity to objects is now effectively zero
- Machine learning is increasing the ability of software to understand the world and decide on action to generate an outcome from its observations
- It is therefore possible to generate the same results of traditional processes and tools with equivalent software, with the implication that **ultimately all the products and services that an incumbent organisation provides and monetises will be reduced to software applications running on a generic platform**



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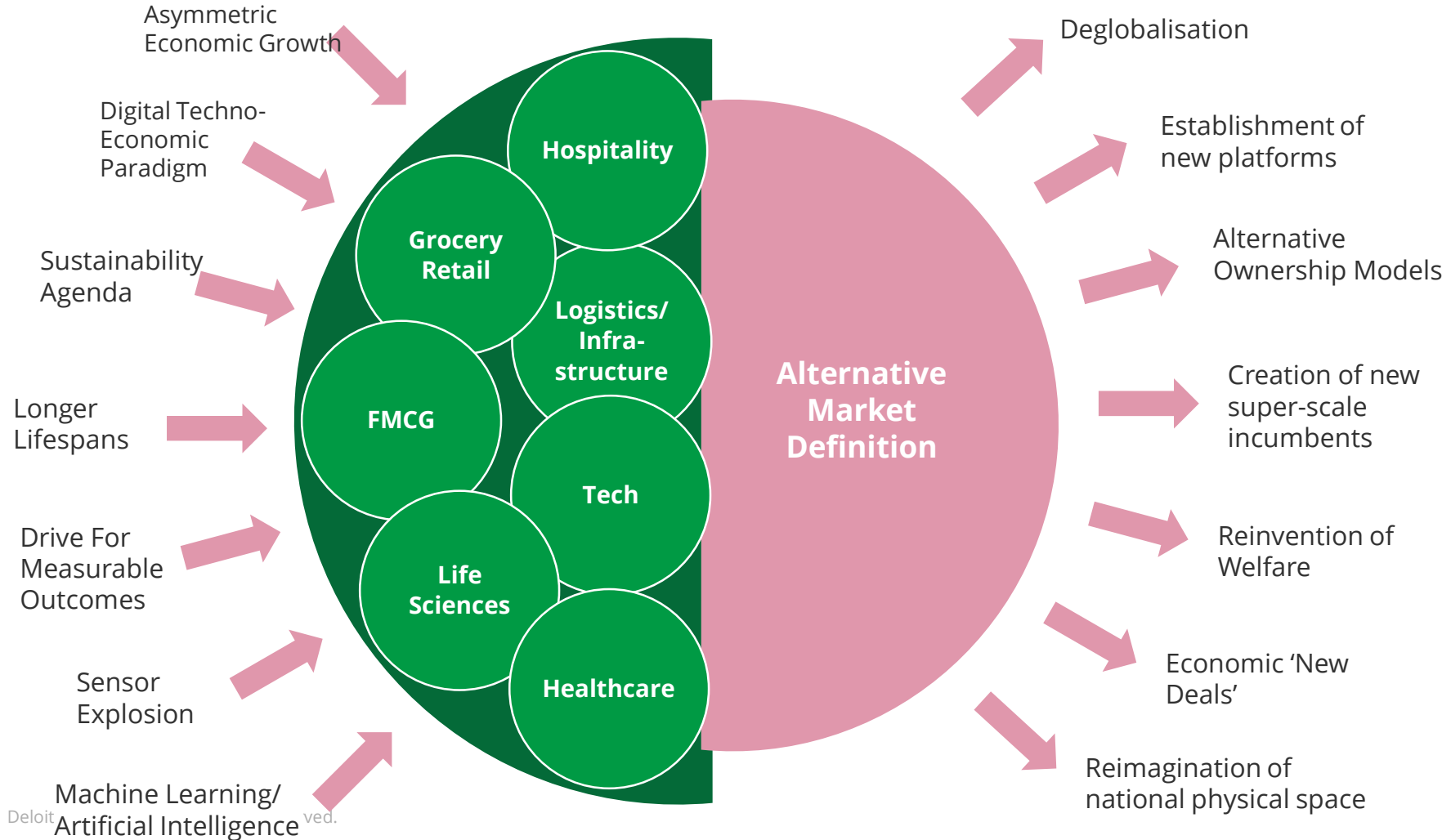
All companies will become software companies

2

The winners in a given market will be the best software company (irrespective of their heritage)

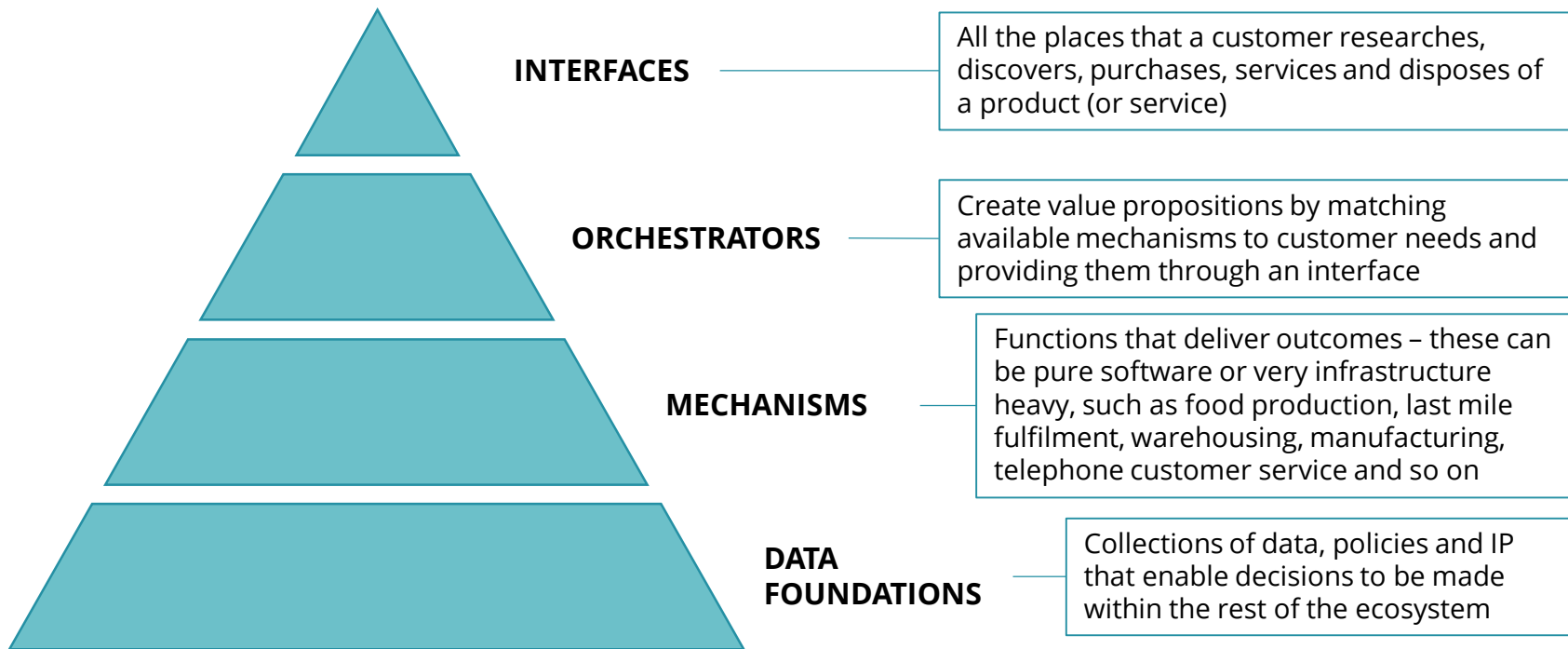
The future market

The long-cycle forces of the Digital Economy will force markets together to generate new business domains—the nature of grocery is thus likely to change very greatly in the next two decades



Roles in the ecosystem

Our contention is that the global food supply ecosystem will be reshaped into layers of platforms, each performing different functions that collectively deliver service to customers and value to economies



- The traditional value chain assumes a high degree of coupling between players in a market
- This was reasonable in the past because of the cost and complexity in building any individual stage of a process, but the Digital Economy has broken down cost and radically increased complexity (or rather, optionality in serving a need)
- Each layer of the platform ecosystem represents a marketplace in which services are well understood in terms of their cost and outcomes
- Our contention is that traditional incumbents now need to actively choose which elements of their historically vertically-integrated business they will choose to dominate and generate value from, and which they will choose to acquire from others
- In doing so, grocers have the potential to achieve networked-economy levels of market share and scale, but in more narrowly-defined parts of the market

Future states



Visitors in Store
0
Total

CERIALI E BIRRA
PER ANZIANI

casse
cash counters

Questa è una combinazione
di pasta e pasta

casse
cash counters

“What sort of businesses would exist if we reimagined the grocery and broader food supply market from first principles with all of the economic, social and technological paradigms of today?”

Future states of grocery

Taking inspiration from the potential new roles in the ecosystem, we can imagine a series of potential conceptions for a future grocery business

Conceivable states

Grocer as data platform

- Builds and operates a precise, real time digital twin of the grocer, its products and customers
- Simulates future states in real time to hyper-optimize resource allocation
- Remains asset-heavy

Grocery Vertical Cloud

- Uses itself as an anchor tenant for a platform of loosely-coupled, horizontal capabilities (e.g. fulfilment, sourcing)
- Algorithms and know-how generated from own retail business enable best-in-class capabilities to be offered to others

Grocer as Orchestrator

- Uses epic customer understanding to curate their basket from a wide range of providers
- Operates a true marketplace in physical and digital channels
- Asset-lite

Radical conceptions

Grocer as Nutrition As A Service provider

- Delivery platforms, personal monitoring, automated food preparation and other digital models combine to provide a personalised daily food selection that both delights from a taste point of view but also provides the exact right nutritional balance

Grocer as food technology disruptor

- Combine advanced, direct knowledge of customer behaviours and needs with hard R&D capabilities to develop more sophisticated, targeted products
- Takes advantage of lack of innovation in CPG to access value from their wallet share

The grower in every home

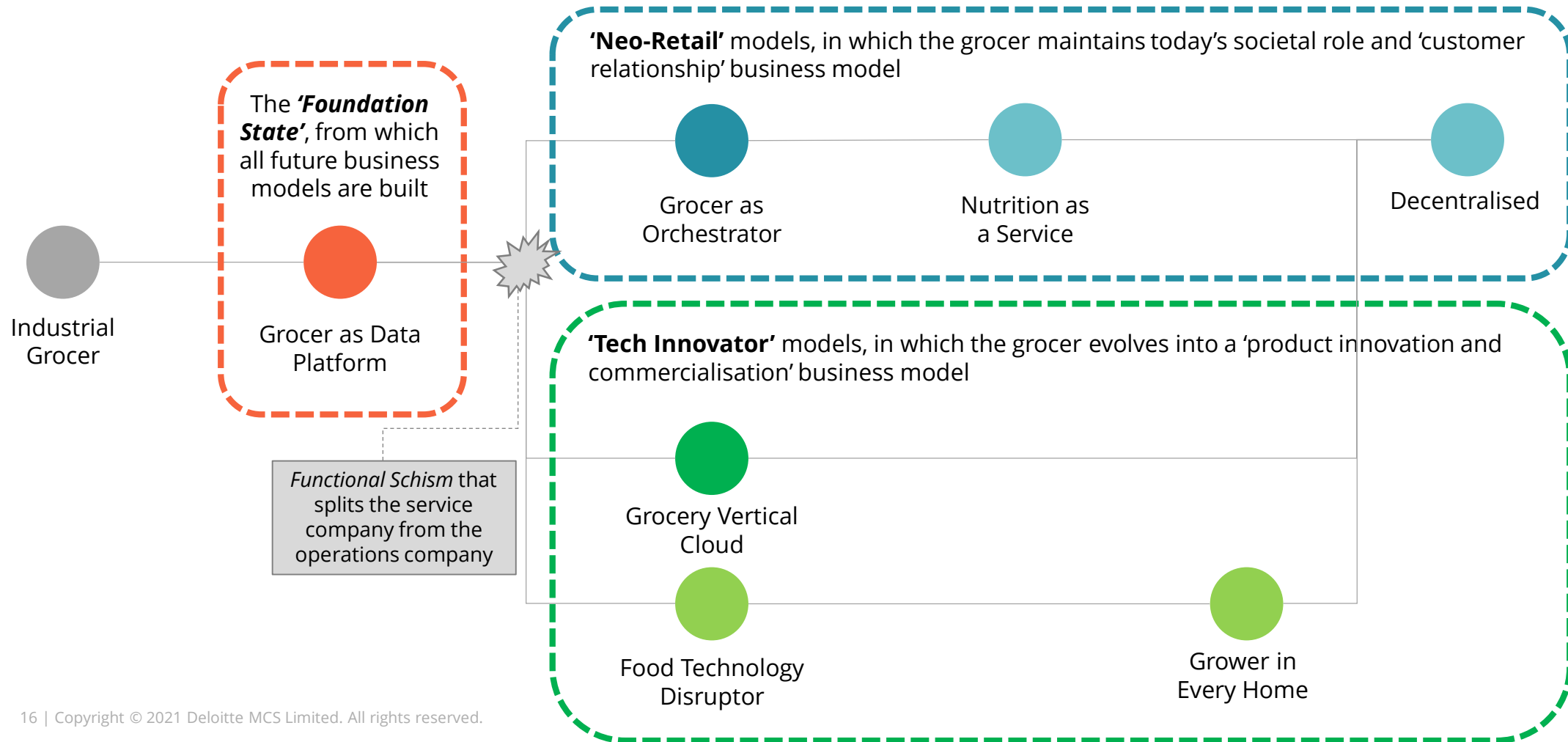
- Rather than provide a logistics infrastructure to bring grocery to consumers, the grocer develops and owns technology that enables self-manufacture in the customer's home
- Requires innovation in food manufacture as well as innovation in food science

The decentralised grocer

- A network of decoupled capabilities delivering outcomes under a brand
- Few or no 'big box' facilities
- Decision factory functions contained within a network of autonomous actors whose equity is associated to their success in growing the network

Strategic pathways

A clear conclusion that emerges on consideration of the long-term state of the industry is that all players must concentrate on liberating data from processes and becoming a data platform in order to unlock access to other models in the longer term



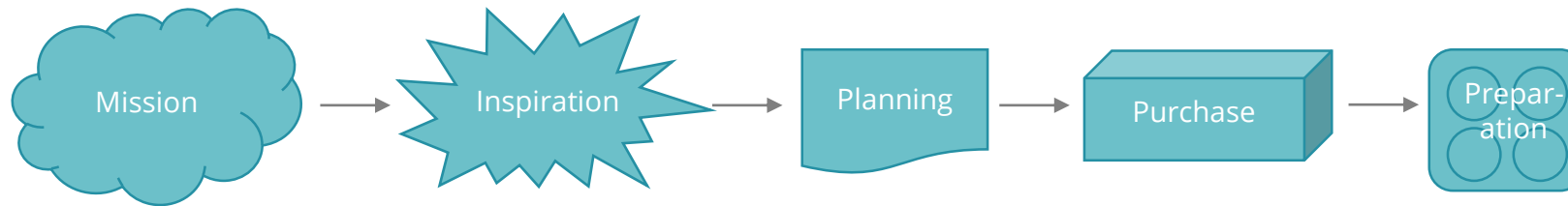
Journeys, propositions and features

An aerial photograph of a traditional stone farmstead in a rolling green landscape. The farmstead consists of several interconnected stone buildings with tiled roofs, a central gravel courtyard, and a swimming pool. In the foreground, there is a grassy area with outdoor seating (tables and chairs) and a fence. The background shows rolling hills under a cloudy sky.

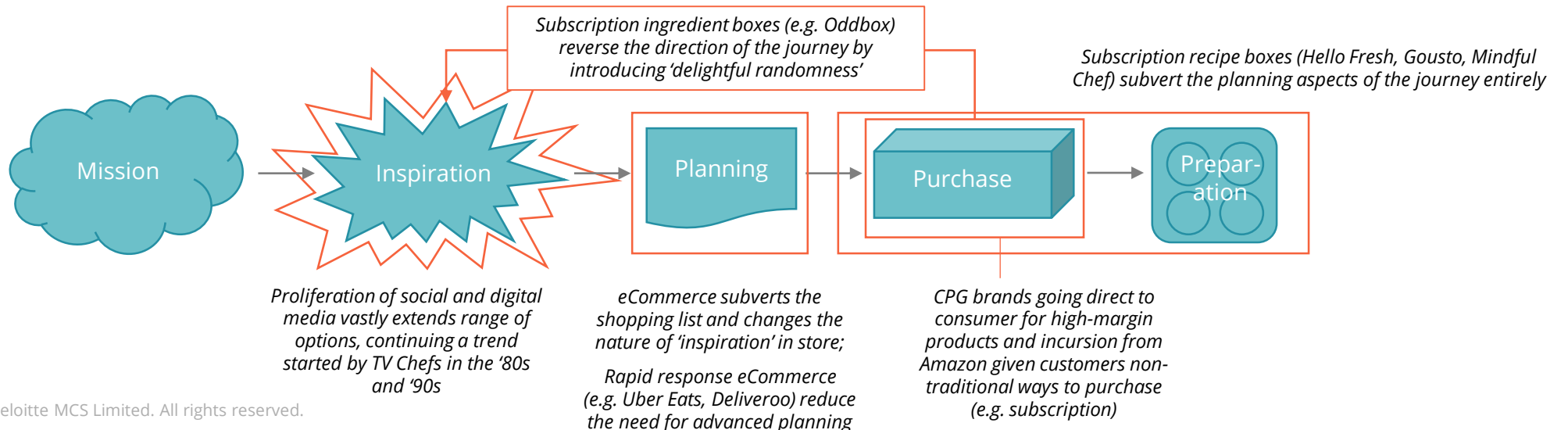
Grocery ‘user journey’

Progress along the long arc has already resulted in several disruptions to the grocery industry, principally by adding a direct-to-consumer channel that has reduced barriers to entry and thus enabled new business models to proliferate at relatively small scale

The traditional ‘user journey’ in home meal preparation was linear...



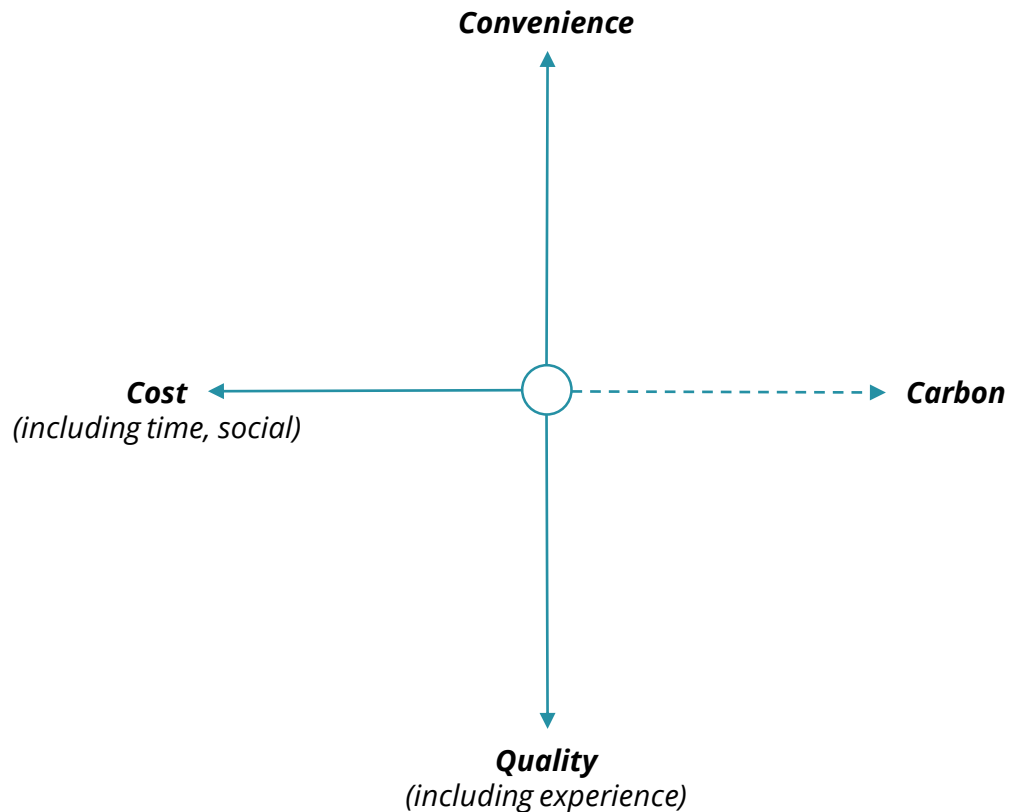
Digital has introduced more options and a degree of non-linearity into the journey, challenging the role of the grocer, for example



Trade-offs in value propositions

Changing the value proposition in grocery means navigating the boundaries within which a consumer is willing to trade-off one aspect of value for another; grocers are challenged in this because they are the mass market and therefore the sink of customers at the edge of their distribution

Whenever a consumer decides to buy a product they are implicitly or explicitly making a calculation that trades off...



For example:

- Shopping at Aldi or Lidl trades off convenience (I have to bring my own bag, I don't see the brands I know or have much variety) for cost, but Aldi and Lidl have done an amazing job at convincing consumers that there is no trade off
- Hello Fresh customers trade cost for convenience, but Hello Fresh have succeeded in providing a quality experience through variety and persuading some customers that the cost is offset by limited wastage
- Customers who shop at artisan food markets are trading cost and convenience for quality of experience (because they get personal service, variety and the perception of higher quality). Notably, such customers are also repaying some economic cost with social capital (it's local, fashionable etc...)
- Oddbox customers are trading convenience, a degree of perceived quality and cost for carbon efficiency – an increasingly acceptable trade off in the mainstream

These models are all economically rational up to a point; the question is where the limits are on each axis – how much compromise will someone accept to get further on another axis? For a grocer there is also the matter of serving the mass market when everyone's trade offs are likely to be different

Next wave eCommerce features (good bets)

Our general perspective is that all the growth in grocery will come from eCommerce, with store innovation happening in service of direct-to-consumer fulfilment; we therefore think it's important to highlight the type of features that will find their way into eCommerce in the next 3-5 years

Features and experiences we expect to become mainstream in the next 3-5 years:

Carbon Accounting	Marketplace Functionality	Subscription	Personal Curation	Media Monetisation
<ul style="list-style-type: none"> Increasing segment of customers that will make a carbon-positive choice if presented with the information, even if that costs more Carbon impact of the basket likely to be a standard feature, linked to loyalty schemes and used as a point of differentiation in advertising Authenticity will be essential as trust is easily broken in this domain and the media will be merciless 	<ul style="list-style-type: none"> Marketplace models are very fashionable with investors and thus with enterprises Local produce is an important source of variety and social supply in the most-profitable consumer segments It is logical that higher-end players will seek to provide curated local producer products through marketplaces integrated with their eCommerce 	<ul style="list-style-type: none"> CPGs are obsessed with subscription models and exclusive products that are not sold through channel as a way of improving margin and establishing a direct customer relationship – they are seeking more control Amazon have also pushed subscription for basics to improve the economics of Prime Digital native specialists have attracted investors on the basis of subscription stickiness and superior supply chain economics It is therefore highly likely we will see major grocers pushing subscription, at least for delivery slots but also for exclusives 	<ul style="list-style-type: none"> Current grocery eCommerce experiences are impersonal and functional This is despite the customer account giving the grocer real insight into individual preferences if they were able to look Acceleration of models such as TikTok have demonstrated potential in use of ML-generated interest graphs for curation Applying the same idea to grocery would lead to a more personalised, predictive user experience for the consumer that in turn unlocks more monetisation opportunities 	<ul style="list-style-type: none"> Grocery eCommerce is likely to become one of the most high-focus, high-dwell time properties on the Internet as the channel grows in share Amazon has demonstrated workable tactics for monetisation on its marketplace; grocers have been using promotional 'investment' and instore magazines in similar ways for many years Media monetisation may be an avenue to resolve the poor economics of grocery eCommerce in the short-to-medium term as the fulfilment network evolves

Next wave features (longer shots)

We are already seeing more radical business models on the edge of the mainstream – these ideas may move to be more standard if we see successful rollouts in a given market, but we consider them to be less likely in the timeframe we’re considering

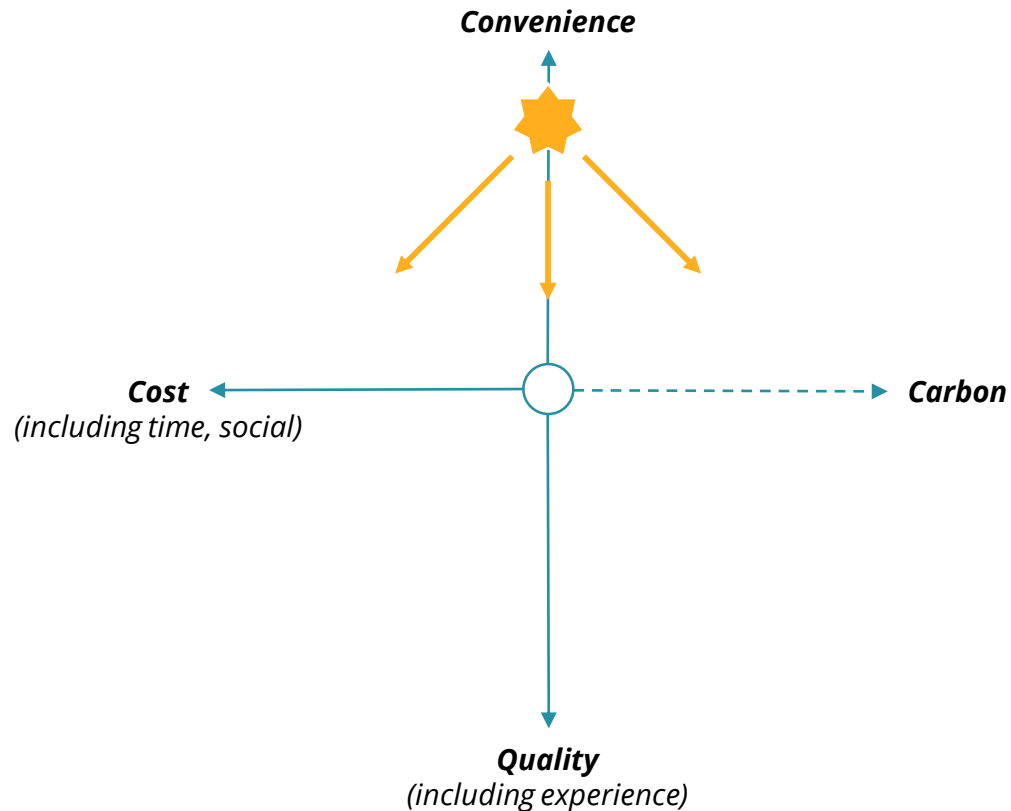
Features and experiences that are plausible in the next 3-5 years, but less likely:

Packaging free	Nutrition as a Service	Service Convergence	Food as Pharma
<ul style="list-style-type: none"> • Packaging is a significant social problem in terms of carbon emissions, land fill etc... • Packaging is also a significant enhancer of economics by reducing wastage and simplifying pick/pack/ship • Packaging-reduction or elimination will likely require a complete rethink of the grocery model with the container becoming an essential (likely reusable or exchangeable) part of the customer’s life • Direct to consumer ordering or fulfilment will be needed to make this practical at scale, entailing the building of a return path 	<ul style="list-style-type: none"> • There are a number of nutrition as a service providers in the market (Soylent, Huel), alongside pantry as a service (Hello Fresh) and meal as a service (Deliveroo) • Grocers are yet to play in this market but it seems likely that there will be experiments with it, particularly if food service outlets recover slowly from the pandemic • Tie-ins with celebrity chefs offer an attractive route to creating a proposition at scale for major grocers • Dark kitchens may also be a viable use for redundant space in stores that now have reduced range and lower footfall 	<ul style="list-style-type: none"> • The grocery delivery is a big ‘stay at home’ event in the weekly calendar • The pandemic has made eCommerce the standard for many other categories, but that only works if people are at home • Large grocers (Sainsburys, Carrefour) have made it clear that they consider themselves ‘department stores of the future’ and are likely to use the grocery delivery as a ‘visit from Santa’ that consolidates many deliveries into one truck role, thus improving economics 	<ul style="list-style-type: none"> • Poor nutrition is well understood to be a primary of many serious conditions and a key reason why some people recover after treatment and others don’t • Some health insurers are pushing customers to use connected self technology to improve their lifestyle from a fitness standpoint to achieve the same (e.g. Vitality) • With healthcare services under pressure in the wake of the pandemic and costs of treatments increasing, it is feasible that tailored nutrition becomes something payers are willing to fund • This would require more exposure of data on product nutrition and connection of the basket to other 3rd party applications, which would become the user interface

User experience trade-offs

Integrating any of these features into a grocery eCommerce experience means making trade-offs in other aspects of the experience in the short term – it is essential to be thoughtful about which to choose to avoid a dumpster fire of clashing features

Our observation is that the majority of grocery eCommerce experiences are optimised for convenience and offer cursory nods to quality of experience and carbon efficiency



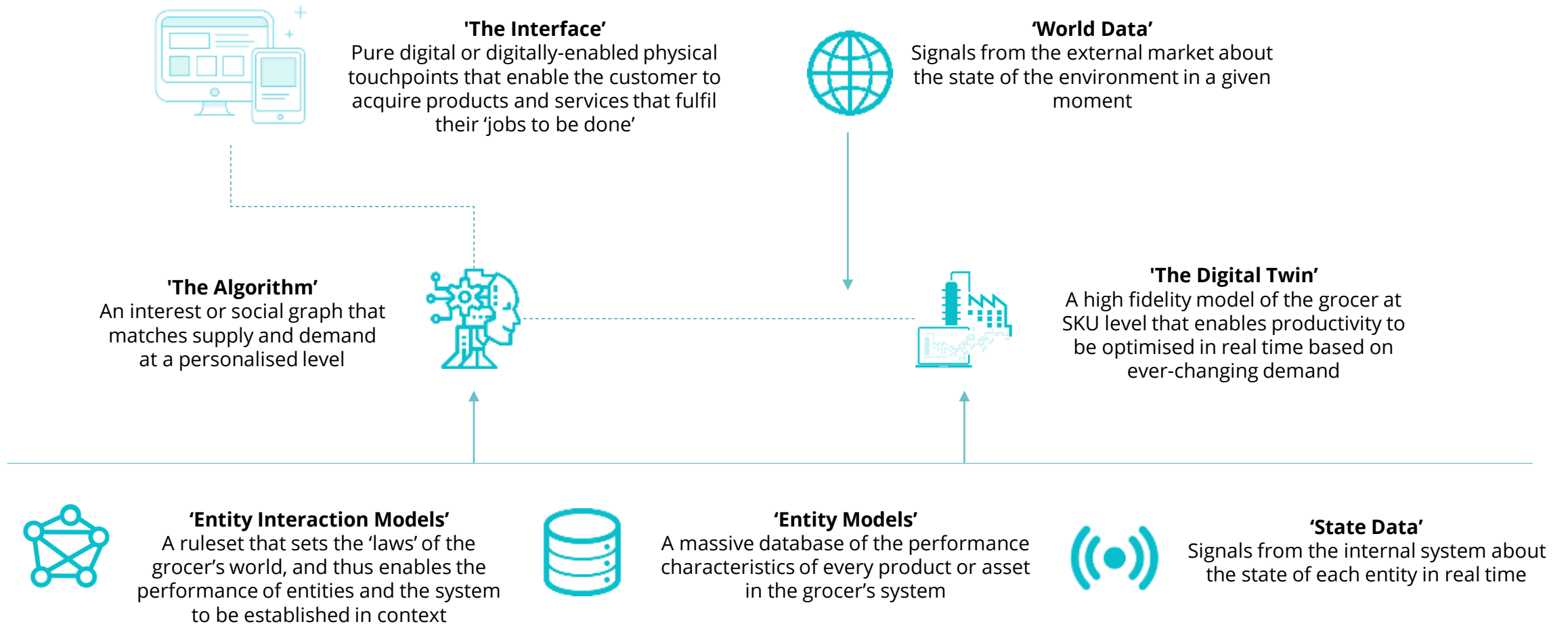
Example 'How to Win' value proposition choices:

- Continue to fight on convenience, offering more speed, less friction, more flexibility of delivery etc...
- Trade convenience for data flow that enables more representative and effective interest graphs to be build ('planned grit'), leading to better quality
- Trade cost and convenience for carbon, eventually learning how to create an experience that is not cluttered by presents the choice in an easy-to-use manner
- Trade cost for increased flexibility in terms of pack size, timing of deliveries and so on, offering higher 'quality' by offering inspiration (i.e. recipes, diet plans) built into the commerce experience
- Trade convenience for media monetisation by deliberately increasing friction
- Trade convenience in terms of ease of navigation, simplicity of decisions, fulfilment for enhanced range via a marketplace

In all cases the ultimate objective is to use 'digital magic' (data, ML, AI) to recapture the axis that has been initially traded away

eCommerce in the Digital Grocer

eCommerce is a critical part of the ecosystem of a digital grocer; in order to create strategic value in the long term, it must be the source and curator of an algorithm that optimises the short and long term value that the business extracts from customers – it should therefore design for AI, not just the user

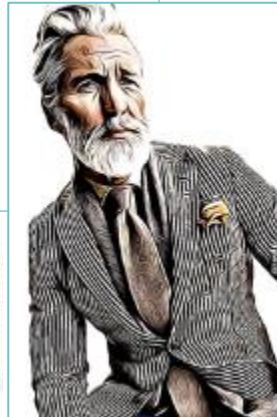


The perfect data set (for an algorithm)

A grocery (eCommerce) experience should be based on a 'user account' that puts together the order history with other clues and user-entered data to enable a picture to be built up that then iteratively enhances the interest graph and ultimately delivers better performance

Examples of the data you'd want to train the perfect algorithm:

- What foods do they like and dislike?
 - Their dietary and nutritional needs?
 - What other interests and hobbies do they have?
 - What are their favourite chefs/ restaurants?
 - How much can they/ do they spend on food
-
- What's in their pantry already?
 - Where are stocks running low?
 - What is approaching its sell-by date?



- How good are they at cooking different types of food?
- Where are they on their learning curve?
- How willing are they to advance?



- Who are they cooking for?
- What are the needs and preferences of others they are cooking or buying food for?

The Foundation State - Grocer As Data Platform

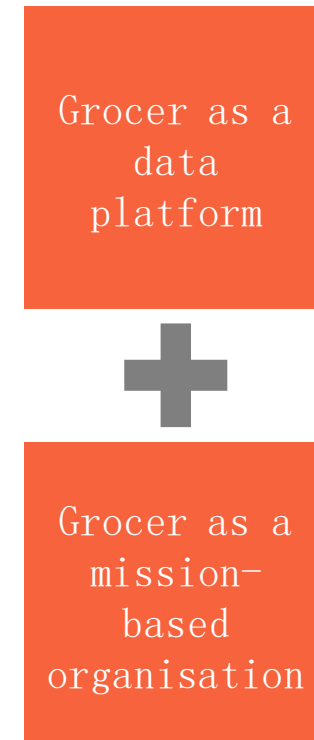
A vibrant, futuristic city street scene. In the foreground, a woman is seated in a sleek, white, futuristic car. To her right, a man is riding a bicycle. In the center, a woman stands next to a transparent data kiosk displaying various icons and the text 'EFFICIENT CITY'. Behind the kiosk, a red car is parked at a charging station. The background features multi-story buildings with balconies, a Swiss flag, and a drone flying in the sky. The overall atmosphere is one of a smart, sustainable urban environment.

Design Principles

The intention of the 'Foundation States' is to create a new industrial base for grocers that enables an organisation to pursue any potential business model in the long-term market by creating a highly flexible supply side – doing this infers some **design principles** that form a north star for a transformation

Irrespective of the business model that an organisation intends to pursue, if that organisation intends to be competitive, the evolution of technology and operating models must ultimately deliver:

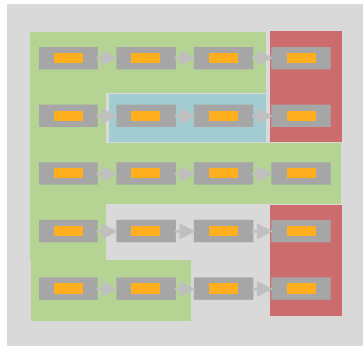
- Complete information about the characteristics, state, location and ownership of every asset the organisation fully owns, intends to own and has supplied available in real time to any person in the organisation
- An entirely accurate and precise model of how all the assets in the organisation combine within processes and as a system to create value, updated in real time
- Transparent access to all (non-confidential) information within the organisation to anyone working within that organisation
- A very simple way of adding new assets and data flows to the organisation that can be effected by anyone within that organisation
- Real time assurance of asset characteristics, state, performance and the nature of use of data flows from those assets
- True agency to employees in using the data and assets of the organisation to accomplish its outcomes



Building the Foundation State

Even the Foundation State represents a shift as radical for businesses as the move to electrification in the 1940s – the change will take many years and see an organisation moving through three major phases, building new capabilities and structures piece-by-piece

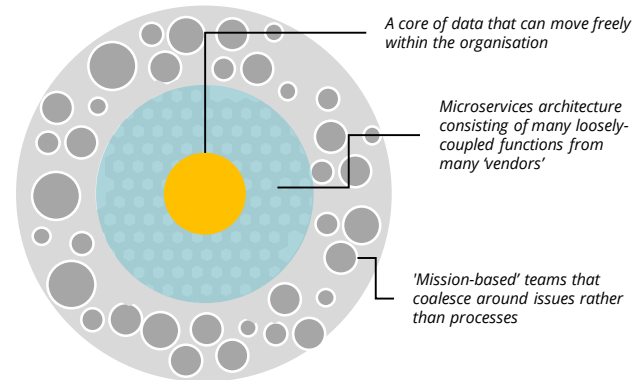
Establishing data flow by freeing data from traditional processes



- Migration of data and applications to the Cloud
- Opening up of closed data sets (locked into vendor environments e.g. SAP, MS Exchange)
- Mandatory installation of sensors to monitor assets and processes at every point of change (e.g. redesign)



Innovative solutions based on fusion of diverse data sets



- Shift from static 'KPIs' to dynamic 'OKRs'
- Breaking down of traditional functional structures to enable outcome owners to access 'levers'
- Driver-based understanding about how every action drives value and how to cascade performance metrics



System Orchestration with Digital Twins



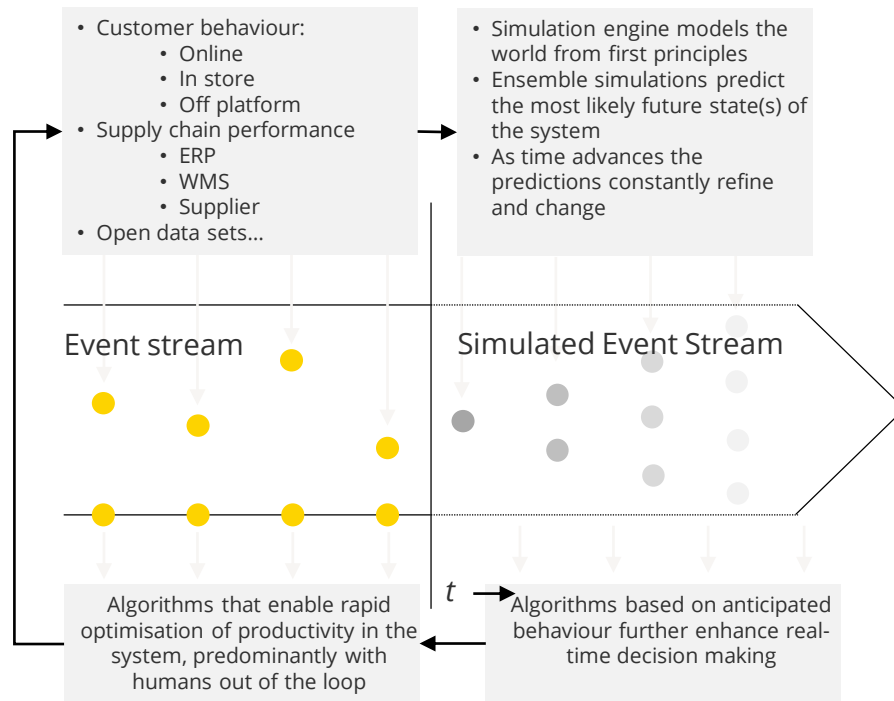
- Eventually most common processes and all assets will be 'born digital', with perfect performance data capture and established flows into a data platform
- With the right driver model, it is then possible to create a sufficiently-high fidelity Digital Twin to enable most actions in the grocer to be automated, even complex ones

Data Platform operating models

Evolving into a data platform business entails a fundamental change in the way that a business generates outcomes from its assets: data, not processes are at the centre of the business; outcomes, not inputs are tracked

Schematic view of the data platform grocer

Input/ real world



Decision/ resource allocation

- The data platform business model is prevalent in the second wave Digital Economy organisations
- Data platforms work by radically improving the efficiency of resource allocation in a system by precisely understanding the present and historic state of every part of the system, feeding that very large data set into machine learning systems to create algorithms that enable the economic performance of the system to be optimised through its operational performance
- This in effect unifies the separate process and technology domains of shop floor and headquarters
- If we were to reimagine a grocer as a data platform then we would thus engineer it to gather as much data about the world as possible
- This data would be added to an event stream that captures literally every action and observation the organisation experiences
- In addition to real-time decision-making algorithms, A simulation engine would make forecasts about the likely future state of the system and suggest mitigating actions, hence maintaining a favourable future resource allocation model
- Because all data in the organisation is available for anyone to use, the capacity of people in the organisation to use it for innovation is significantly greater

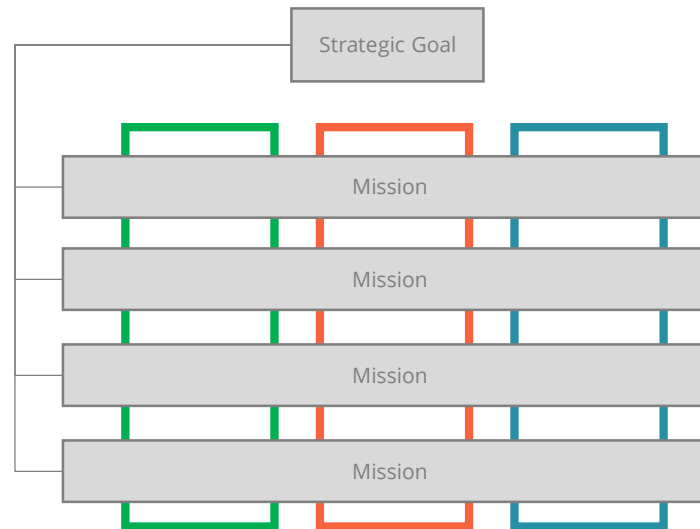
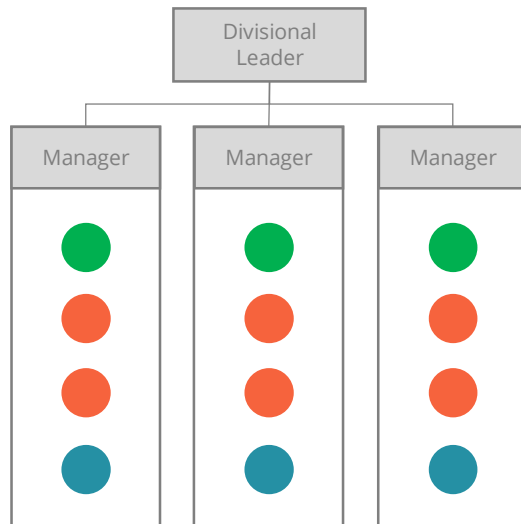
Mission Based Organisations

Taking advantage of the benefits of a data platform operating model necessitates a change in the way that work is done within the organisation: a pivot from process to outcome-centric resource management known as 'mission-basing'

Mission-Based Organisations change the way in which work is oriented from fixed teams in fixed hierarchies, governed by formalised processes...



...to an **outcome-based** model in which professions are no-longer baked into processes, increasing flexibility and innovativeness



Principles of the Mission-Based-Organisation:



All business actions linked to commercial outcomes



Outcomes are quantifiable and time-bound



Leaders decide how to achieve outcomes



Resources move fluidly across teams



Data is a shared asset for all people

After the Foundation State

The Foundation State will not be easy to implement, but it is a necessity that will leave grocers very different places to work within and able to kick on with other strategic moves

Big changes once the Foundation State is fully installed:

- Extreme level of automation of both operational decision-making and physical actuation of actions – most processes will involve no human intervention at all
- Most interactions with partner organisations will be digital and there will be far more regular exchange of data (i.e. real time) as algorithms within various supply chains interact
- Operations and supply chain professionals will be low in number and primarily supervise automated systems
- Software development will be a grocer's primary competence, developing and maintaining bespoke functionality in the customer experience and operational orchestration that together create competitive advantage
- Wastage will be very low, enabled by very finely-gearred forecasting mechanisms
- Lean headquarters operations, focused on product development, innovation and corporate development (i.e. very limited 'operations' and other human interventions to hold together broken processes and provide 'business analysis' that fills in data gaps)
- Leadership will make only strategic decisions as there will be no need to lean into operations to understand the cause of issues
- The people mix in the organisation is likely to be very different to today with more emphasis on empathy and creativity versus authority and efficiency



*“Any sufficiently
advanced technology is
indistinguishable from magic”*



The Functional Schism of service from operations

An aerial photograph of a city, likely Los Angeles, featuring a large, winding lake in the foreground with a prominent fountain. The city skyline with various skyscrapers is visible in the background under a clear blue sky. The text is overlaid on the left side of the image.

Archetypal business models

Our economic logic for the pathways is based on the idea that successful businesses are clearly focused on one of three types of business model and that excessive mixing of the types makes an organisation difficult to manage. The idea of the Functional Schism is based on this logic

Three broad categories of business:

Infrastructure Management Business

This business type involves **high volume, routine processing kinds of activities** – everything from stock buying, assembly line manufacturing and logistics networks to data centre operations and routine call centre operations. A (possibly controversial) view is that **successful grocers today are all IMBs** – they operate in largely commoditised markets at large scale and using well understood processes. **The Foundation State assumes that this model is retained in a super-optimised form.**

Customer Relationship Business

This business type focuses on **developing a deeper and deeper understanding of individual customers and using this knowledge to become more and more helpful to the customers in connecting them with the products and services that would create the most value for them.** It is a “trusted advisor” that is totally focused on helping customers, regardless of their needs. For grocers emerging from the Foundation State, this means pursuing a **neo-retail model.**

Product Innovation & Commercialisation Business

This business type is all about **coming up with creative new products and services, bringing them to market quickly and accelerating their adoption.** The culture of this business type is completely focused on celebrating the creativity of product and service designers – they rule the roost. For the grocers emerging from the Foundation State, this will mean **doubling down on their new-found adeptness on technology and data and pursuing a Tech Innovator model.**

Source: Hagel, Centre For The Edge c. 2005

Post-grocery business models

Once traditional grocery businesses break up down functional lines, three classes of business model will emerge, creating new horizontal markets and unlocking a new wave of value from today's low margin vertically-integrated model

Neo-Retailers



- Recognisable as retailers, delivering hyper-personalised 'lot size of one' offers to consumers
- Differentiated by:
 - Interface into products and services
 - Access to exclusive products, services and experiences across a range of categories
 - Quality and convenience of 'last mile' distribution
 - Brand permission

Tech Innovators



- Businesses more akin to West Coast technology firms that build platforms of software and hardware products that automate and enhance the delivery of nutrition, entertainment and lifestyle services to consumers
- Own intellectual property that enables them to monetise their innovations
- Have brands synonymous with digital technology rather than retail - may in fact be unknown to consumers in the mode that creates the most value

Infrastructure Operators



- Businesses that own assets in the supply chain and operate those assets in support of others, which own customer relationships and technologies that enable both those relationships and sell the underlying products
- Businesses with very large revenues but very small margins
- Akin to a cross between today's logistics and distribution firms, real estate owners and cloud infrastructure vendors

The 'Neo-Retail' pathway

/Autonomous
/Sensing
/Communication
/Battery
/Navigation
/Mirrorless
/Ecology

Self-Driving

48
mph



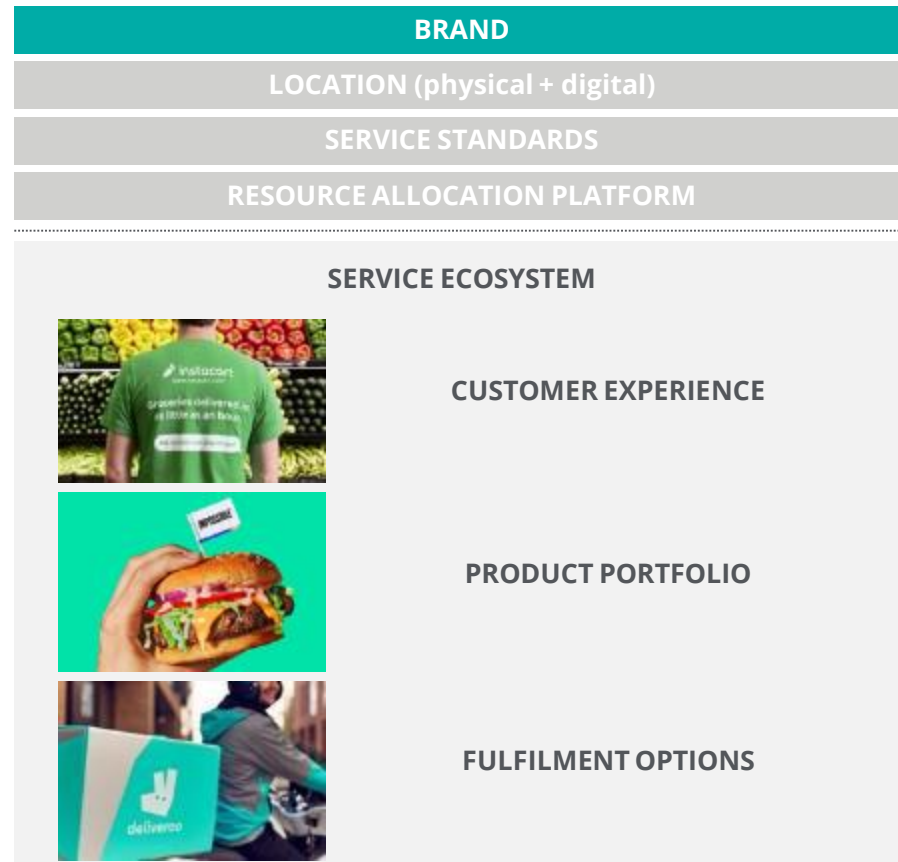
Introduction to the pathway

From the outside, the neo-retail pathway appears to be an extension of today's retail model; in fact this is a radical shift in which vertically integrated grocers cease to exist, replaced by a variety of software interfaces into food and ways of achieving nutritional outcomes

- The basis of this pathway is that consumers want to be sustained and delighted by food and empowered in their lifestyle, but are unconcerned about how those experiences are supplied
- By decoupling experience design from operations and focusing on creating a marketplace for relevant products and services, the grocery brand can use a much wider range of interventions to delight the customer
- As an **orchestrator** the grocer becomes such a platform, focusing on creating 'liquidity' in the lifestyle market by providing a common set of data describing supply and demand and increasing convenience in fulfilment, all under a trusted brand
- This type of grocer can also provide amazing marketing and promotional services to suppliers by placing their products and services in the right physical or digital context to attract and retain customers – **realising the 'showroom' proposition**
- The orchestrator model remains relatively traditional in that it serves customers with inputs – products and services – rather than outcomes in the lifestyle or life outcomes sense
- The **'Nutrition As A Service' Provider** model resolves this deficiency by tying together the orchestrator model with data sets and payers from other markets in health, media and R&D to create an entirely new market that supplements or replaces the traditional grocery market

Grocer as Orchestrator

As an orchestrator, the grocer uses its brand and fulfilment co-ordination capabilities to become a hyper-personalised universal interface for customers into the food, grocery and broader retail market

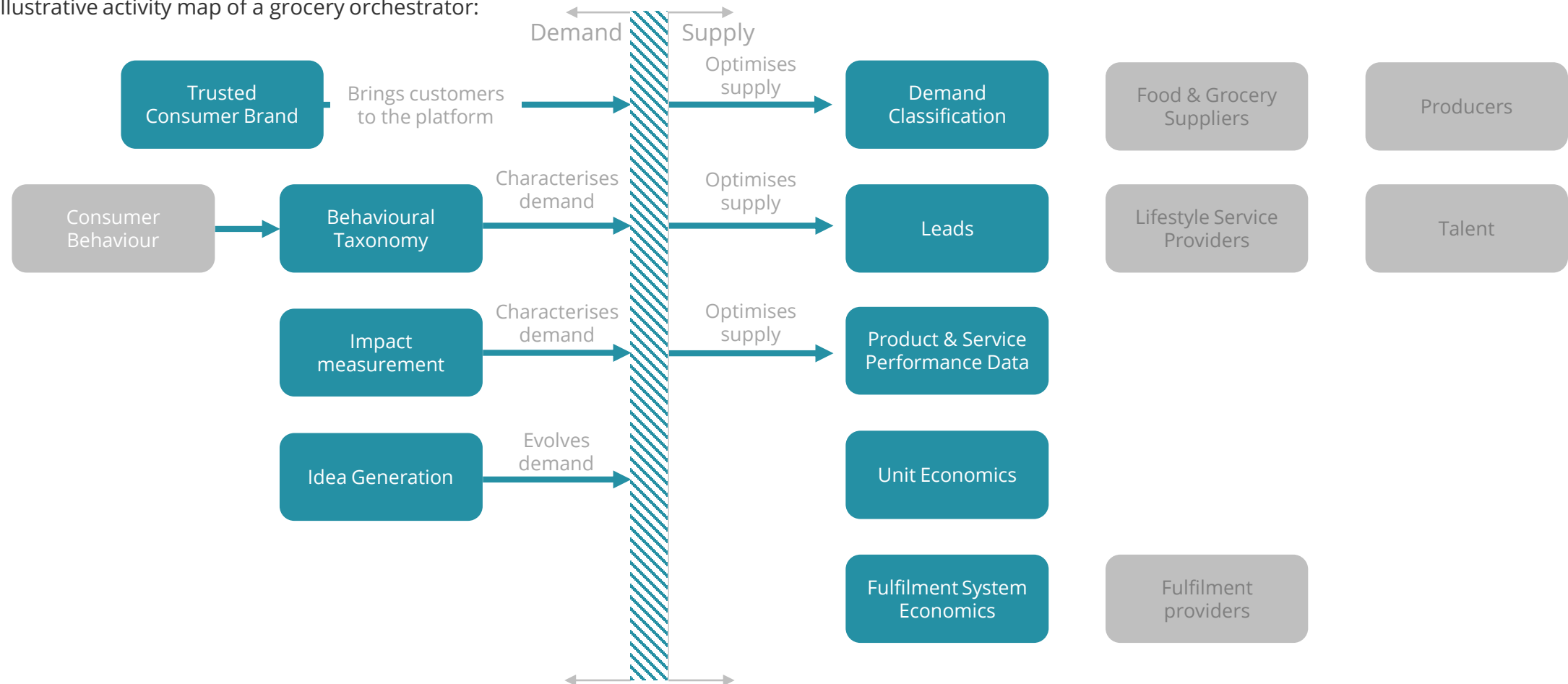


- The **orchestrator** business model is rife in retail and consumer services, executed by (for example) FarFetch, Uber Eats and Alibaba
- This is a pure '*Customer Relationship Business*' model that relies on the grocer to create a trusted front end for customers to find products and services and service providers to offer them the same, all under a single narrative that personalises service to the customer
- The grocer also sets standards for ecosystem participants who wish to access that demand, so that the overall experience brand is protected
- By gathering data and developing algorithms based on supply and demand, the grocer-orchestrator gains an ever finer understanding of how to maximise productivity (an analogue of this would be Uber Eats setting up 'dark kitchens' to service demand that only they know about)
- This version of the model would also include the physical environment as it remains an important part of the shopping mix for consumers, albeit radically better data may lead to that environment looking very different from the formats available today
- In totality, orchestrator uses their insight into demand and supply to optimise a system in which it owns only a few, vital parts, thus enjoying asset-lightness alongside mass-market scale

Creating markets

An orchestration platform deliberately breaks down the functions that match supply and demand into outcomes, taxonomies, standards and data sets that increases the liquidity of both supply and demand and thus aids efficient matching

Illustrative activity map of a grocery orchestrator:

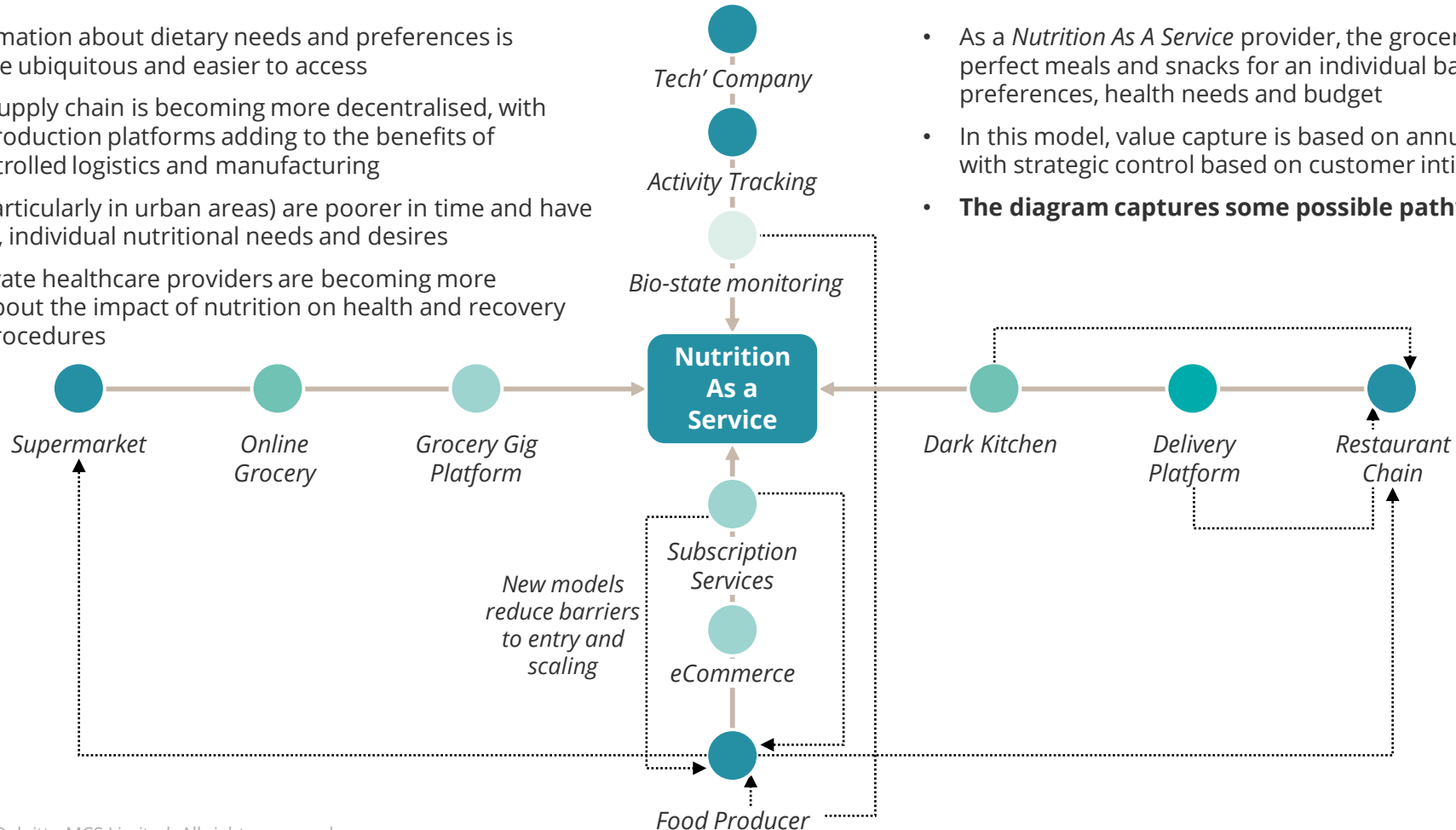


Nutrition as a Service Provider

A possible conclusion from the rise in popularity of direct to consumer models, delivery platforms, crowdsourcing and personal technology is that over a large proportion of food supply will become personalised 'nutrition as a service'

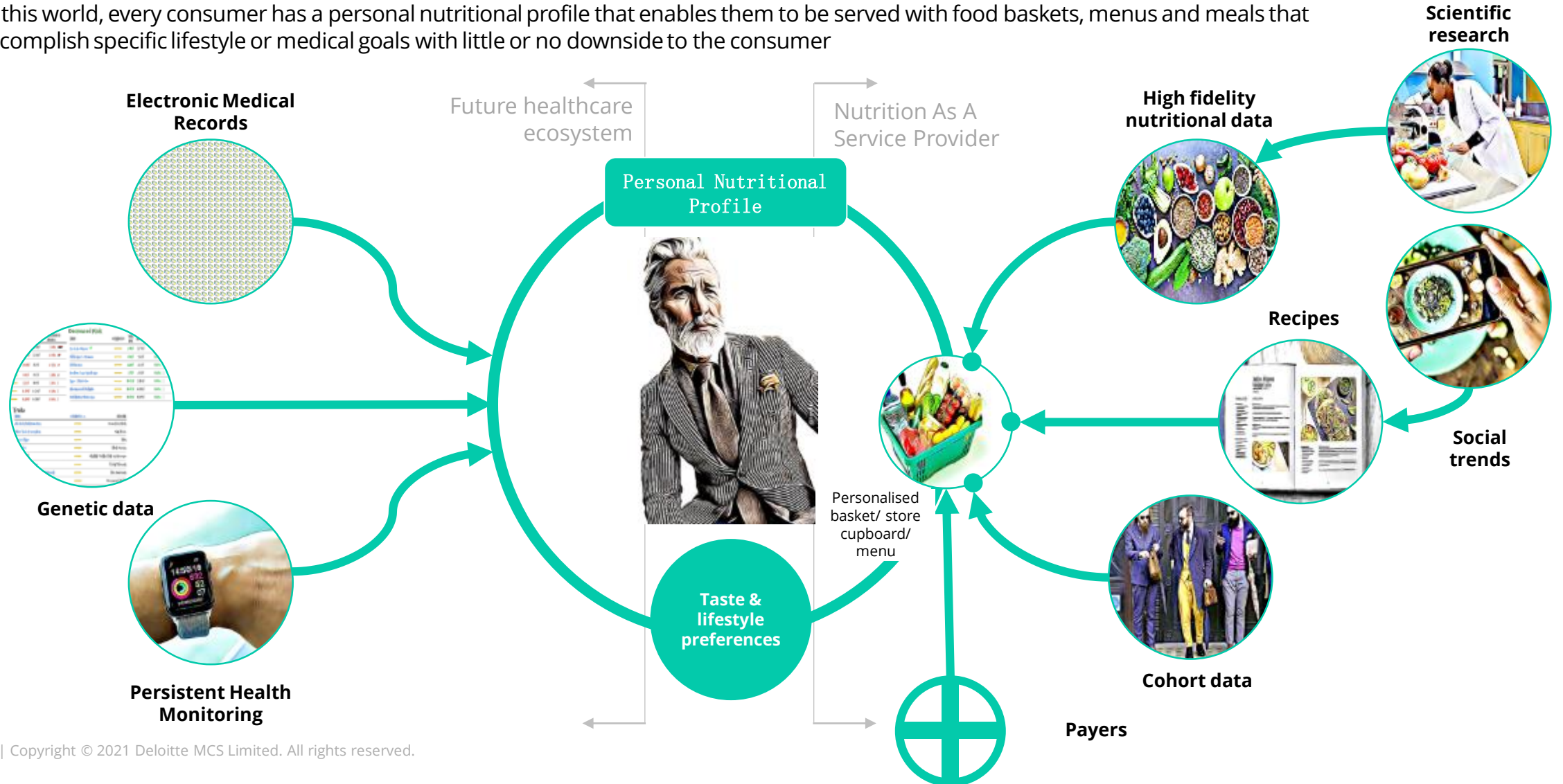
- Personal information about dietary needs and preferences is becoming more ubiquitous and easier to access
- Similarly, the supply chain is becoming more decentralised, with delivery and production platforms adding to the benefits of computer-controlled logistics and manufacturing
- Consumers (particularly in urban areas) are poorer in time and have more complex, individual nutritional needs and desires
- Public and private healthcare providers are becoming more appreciative about the impact of nutrition on health and recovery from clinical procedures

- As a *Nutrition As A Service* provider, the grocer provides the perfect meals and snacks for an individual based on their preferences, health needs and budget
- In this model, value capture is based on annuity revenues, with strategic control based on customer intimacy and data
- **The diagram captures some possible pathways to NAAS**



Consumer example

In this world, every consumer has a personal nutritional profile that enables them to be served with food baskets, menus and meals that accomplish specific lifestyle or medical goals with little or no downside to the consumer



Nutrition As A Service use cases

Although it seems far-fetched, provision of personalised nutrition as a service to large populations is an edge case today and, with better data on nutritional needs and lifestyles could become a realistic mass market use case



Specific **lifestyle choices** that emphasise other activities over food preparation and variety (e.g. being a start up founder) or focus on particular nutritional balances or beliefs (e.g. veganism)



Specific **medical needs** that mean that following a specific diet will decrease the need for clinical or pharmaceutical intervention or increase the effectiveness of clinical outcomes, all at lower cost than the clinical alternative

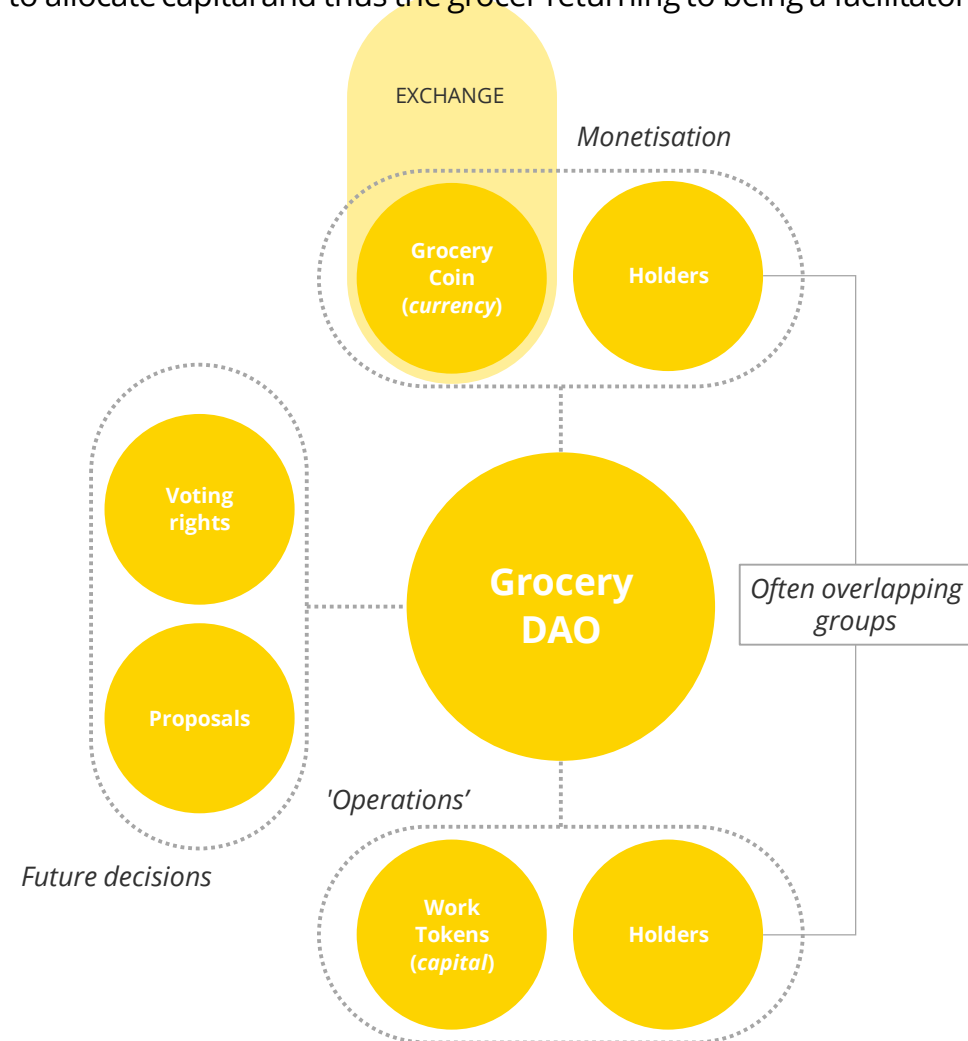


Specific **political interventions** that make access to appropriate nutrition a right, as part of moves to Universal Basic Income. This may be universal and forever or a specific intervention needed during times of national emergency

Decentralisation

As the grocer moves further-and-further away from the ownership, creation and supply of products and services into ownership and use of data it is possible to imagine the concept of the Firm ceasing to be the most efficient way to allocate capital and thus the grocer returning to being a facilitator of a network owned by its participants

- In a traditional Firm, an integrated business uses trust capital to attract capital and reallocate it to labour in order to perform productive work
- The blockchain computing platform enables this construct to be broken as it provides effectively-immutable recognition of the right to work and the quality of work to determined inside and by the network
- It is therefore feasible to organise work direct with the workers (e.g. from the growers, through the distributors to the pickers, packers and assistants on the shop floor), with each benefiting from rising equity of the network directly, without traditional corporate middlemen taking the lion's share by virtue of their scale and access to capital
- Customers could also participate in – and benefit from – this decentralisation by performing functions such as range selection through expert networks, effected via decision/ voting rights
- In effect, this creates a giant international co-operative in which the members benefit from the growth of the network
- The Decentralised Grocer can grow by issuing more currency tokens that in turn pay for additional right-to-work tokens, hence enabling more workers to invest in and benefit from the larger network (this complex an organisation would require multiple types of right-to-work tokens to enable different functions)



Characteristics of the neo-retailer

Neo-retailers are driven to understand as much about a customer's context as they possibly can, thus enabling them to constructively monetise many different needs of that customer and grow to very large global scale through excellence in pattern recognition

Culture

- 'Customer comes first'
- Uses data to establish and infer their needs and match them to the most-right supply
- Accommodate the customer's real needs, no matter how trivial or niche they might be – seeking the 'lot size of one'
- Focus on customer success – willing to challenge the customer when they are asking for something that's not in their best interests

Key Capabilities

- Ability to read customer contexts in great detail and thus anticipate and address their needs
- Build and sustain deep trust with the customer so that they are willing to share more and deeper information about themselves
- Emotional intelligence and empathy so that they can understand and constructively challenge

Key Success Factors

- Needs to create economies of scope
- Be able to see the complete context of the customer versus any competitor
- Read across patterns from one customer to the other
- Drive to very large, global scale to extend the database of patterns as broad as possible

Business Model

- Get paid for the impact they create
- Leverage data to provide prescriptive value to customers
- Serve anyone, anywhere with anything – broad focus, not specialised in terms of service

The 'Technology Innovator' pathway



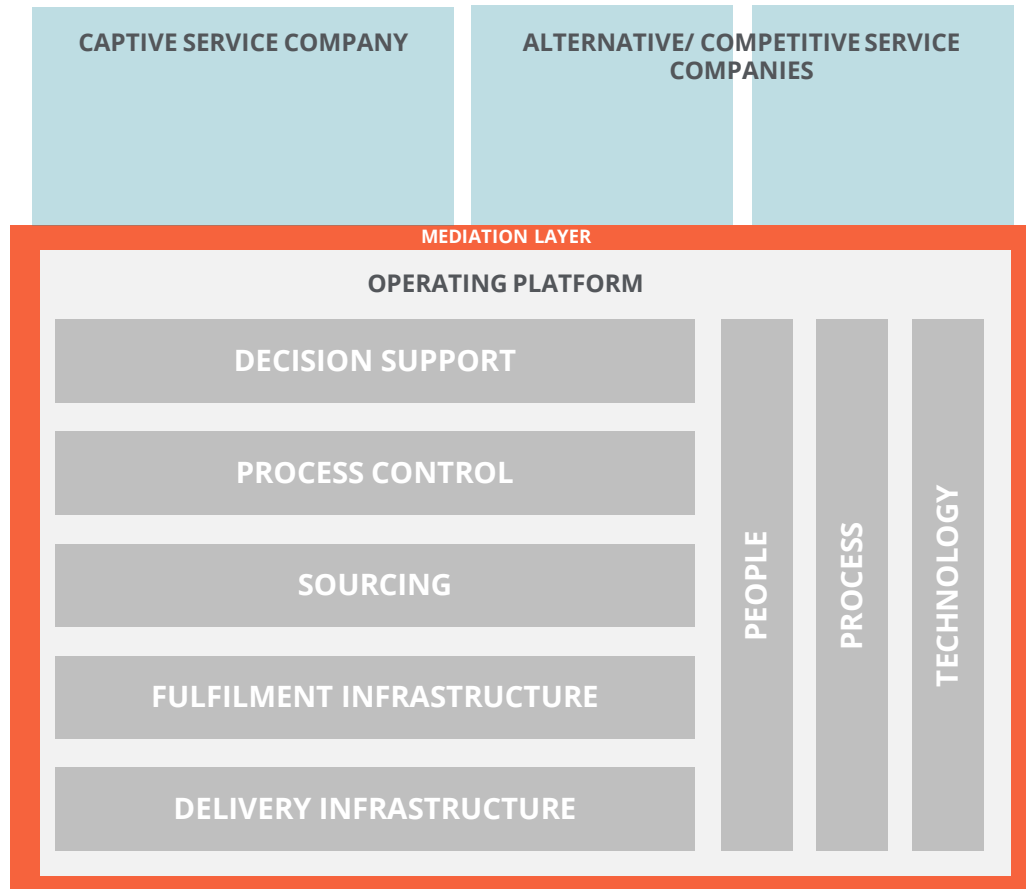
Introduction to the pathway

The technology innovator pathway sees the grocer moving away from retail as its primary business model and instead becoming a developer and monetiser of new technologies that support the grocery, food and nutrition industries

- This is a more overt pivot from:
 - B2C to B2B
 - A grocer using software to a software company serving other grocers
 - A service company to a product company
- In committing to this move, the grocer is assuming that over time its consumer brand will become less valuable and it will therefore be more expensive to maintain market position
- A further assumption is that the grocer's orchestration and fulfilment expertise and scale in certain categories of product is sufficient to make them an efficient provider of such services to all players in the industry
- The stepping off point into this pathway is by becoming a vertical cloud and service layer akin to Amazon, Alibaba or (to a lesser degree) Ocado – **using software and data to reimagine food and grocery retail**
- A potential alternative course would be to leverage the demand expertise of the grocer to become a developer of disruptive new food products and technologies, competing with organisations such as the FMCG majors and ingredient suppliers such as Kerry Foods – **using software and data to reimagine food and grocery products**
- This pathway offers the further opportunity to return to a B2C model by developing and monetising technologies that enable the consumer to become a more efficient food producer in their own home or neighbourhood and thus radically disrupt today's grocery industry in a similar manner to the micro-grid trend in energy supply

Grocery Vertical Cloud

In this model the grocer decouples operations from service, offering the former as a set of digitally-orchestrated services that enable anyone to run a scale grocery retail and supply chain business on top of their platform

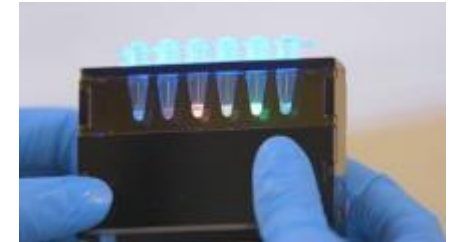


- Vertical integration is an impediment to focus on creating the future market therefore it is essential that a grocer's **operating platform** (e.g. sourcing, technology, logistics, fulfilment etc...) is decoupled from the **service company** that renders those capabilities into a customer value proposition
- Capabilities in the operating platform are themselves decoupled from each other such that they can be applied individually or in custom sequences
- A mediation layer surrounds the operating platform, enabling any of these services to be sold and delivered to the service company or any other company that wishes to benefit from the resource allocation efficiency of an operating company with greater reach and scale of data
- The 'captive' service company exists as an anchor tenant for the operating platform. If the captive remains part of the same corporate group than it may be incumbent on the captive service company to seek to offer cutting edge services and thus take more risks than a traditional retailer would
- As a business, the grocer that chooses this path would become a software company that happens to be a grocer also – it is like Ocado in the grocery market and Amazon in the broader retail market
- Pure services businesses (e.g. capital markets, cloud software) have already moved in this direction as economies of scale and falling barriers-to-entry impact all players
- It is also feasible (and possibly advantageous) to spin the service company out entirely so that others can make the most of its brand and market position as a neo-retailer

Food technology disruptor

New chemical and bio-engineering techniques have enabled radical innovation in the nature and source of food stuffs; in turn this could enable grocers to disrupt their suppliers by changing the competitive dynamics in food supply

- As major players in the market, grocers have tended to influence long-term agriculture strategy in a soft manner
- This reflects the nature of the Industrial Economy value chain, in which scale and historical regulation created barriers to entry
- Three trends suggest that this paradigm could be disrupted:
 1. New technologies, in particularly synthetic biology enable radically different food stuffs to be developed (e.g. artificial meat, personalised supplements)
 2. Longevity-based lifestyle trends that accompany new generations (such as *Thousand-Year Millennials*)
 3. A step-change increase in the 'price' of food miles driven by fuel costs and punitive taxation on polluters promotes manufacture close to consumption
- Grocers could use these trends to disrupt since:
 - Grocers already take ten-year-plus bets on agricultural strategy...
 - ...are increasingly focused on creating a distinctive offer through own-brand product development...
 - ...and see the downside of being dependent on the promotional spending of CPGs
 - They have real customer understanding, since millions of consumers walk through the doors every week and the ability to conduct sophisticated product trials on real consumers
- The consequence would be a strong pivot to bring R&D into the core of the business, accompanied by promotion of product to the strategic centre
- Traditional retail functions would be subservient to development and the business would own a portfolio of patents that protect IP and also enable it to be licensed to others in the value chain (akin to the model in software and mobile telephony)



The grower in every home

Trends towards micro-manufacture in other industries could have similar effects on grocery, leading to a change in the role of the grocer from supplying finished products to providing information and personalisation

- Similar trends to those enabling a move into food supply innovation could ultimately enable a further move to decentralisation, in which the majority of production moves into the customer's home or into collective manufacturing facilities at hyper-local scale
- Emerging food technologies potentially erode the economics of scale production:
 - Hydroponics for salad vegetable growing
 - Connected sensors and cloud-based algorithms to simplify and enhance the yield of other vegetable production
 - 3-D printing and reconstitution of food
- If these technologies took hold then the role of the grocer changes from shipping and selling finished products to shipping raw materials direct to home and providing rights to combine those products into finished articles and information about how to do so (in an automated fashion)
- A sharing-economy wrapper could enable excess production to be traded to others in the local area
- In this world the most important asset the grocer has is its ability to maintain a molecular-level database of how food is made and a set of assets that enable the technology to make that food to be supplied to consumers
- This type of grocer is extremely asset-lite in that it owns only a software platform that securely matches 'recipes' (often supplied by third parties e.g. CPGs) with the machines that consumers will use to manufacture the finished product



Characteristics of the Technology Innovator

Technology innovation businesses must strike a delicate balance between the environmental and cultural needs of their core of genius creatives and the requirement for more traditional sales, marketing and service structures as the business scales

Culture

- Focused on the genius of a small number of innovators and visionaries
- Organisational culture defined by the innovation and design motions, practices and culture
- Other functions support the creative core

Key Capabilities

- Creative product design
- Insights into unmet customer needs, often far in advance of the customer knowing they have these needs
- Extreme mastery of technical disciplines that develop and realise new technologies, products and techniques
- Category marketing capabilities that successfully propose new types of products to customers

Key Success Factors

- Must be able to stay ahead of commoditisation – all great ideas will ultimately become mass market
- Constant renewal with new ideas - 'always a new team/ thing' to avoid group think
- Balance cultural needs and foibles of maverick innovators with a business of sufficient scale and scope to be sustainable

Business Model

- Product sales, particular in the earlier phases of the market where product performance and novelty gives an excessive advantage to early adopters
- Technology licensing
- Service models in which the business runs functional platforms on an 'x as a service' basis

Addressing Archetypal Strategies



Common strategies

Grocers and their advisors typically talk about a number of popular themes that underpin their strategies

Archetypal 'strategies' of grocers

The Agile Grocer

- Adopts the 'Spotify Model' of scaled Agile to operate the entire business as if it were a second wave Digital Business
- Every task throughout the business is in support of a mission
- Every person in the HQ works in a multidisciplinary fashion
- Every leader is the master of a 'doing' profession
- All field workers are 'actuators'/ machine parts

The Sustainable Grocer

- Seeks to be sustainable and ethical in every decision it makes
- Locates suppliers who are e.g. water-consumption neutral, pay fair wage etc...
- Carbon neutral throughout
- Engages customers with a narrative about the need to balance price with social and environmental impact

The Lifestyle Grocer

- Uses the weekly engagement with customers and resultant understanding to offer a range of other services that help customers live a happier life
- Creates own-brand services and partners with aspirational 3rd parties to (theoretically) cater for all customer needs

The Healthy Grocer


- Extends the idea that food is central to health by offering a total wellbeing service through one brand:
 - Gyms
 - Healthcare
 - Wellness services
 - Advice
- Uses deep understanding of individual customer behaviours through direct and indirect interactions to create a picture of their health needs and incentivise behaviours through 'nudges'

Future states and archetypes

This document presents a much wider-ranging worldview than is present in the majority of grocer strategies, which tend to leave loose ends in respect to the consequences of pursuing one of the archetypal strategies

	The Agile Grocer	The Sustainable Grocer	The Lifestyle Grocer	The Healthy Grocer
Grocer as Data Platform		Would be able to act in a very sophisticated way to reduce waste (to reduce cost)	-	-
Grocery Cloud	The core value of these models is in software, therefore agile would be the dominant resource allocation mechanism, albeit not the exclusive one given value of traditional management in operating process execution	-	-	-
Grocer as Orchestrator		Could choose to be visibly and authentically sustainable as a competitive position	Could choose to be a lifestyle orchestrator as a competitive position	Could choose to focus on health outcomes as a competitive position
Grocer as Nutrition As A Service Provider		Could theoretically reduce wastage to near zero by matching demand and supply at a personal level	Lifestyle enablement is at the core of the model	Health and wellbeing is at the core of the model
Grocer as Food Technology Disruptor	A 'hardware' R&D organisation with some agile structures	Could design sustainability from the ground up, rather than retrofit	-	Could design customised health outcomes into foodstuffs from molecules-up
The Grower in Every Home	Likely exclusively agile	Radically reduced emissions, wastage and globalisation impact therefore inherently sustainable	-	-
The Decentralised Grocer	-	Arguably the most sustainable model as it removes traditional 'shareholder return' and distributes value more equitably	-	-

Summary - the impact of the pandemic



Implications of the pandemic

As with previous shocks, the 2020 pandemic is highly likely to accelerate progress towards these models being realised at scale in practice

Model	Impact of Pandemic	Commentary
Grocer as a Data Platform	Accelerates	<ul style="list-style-type: none"> • Critical focus on flexibility, ability to surge demand and supply with less inertia • Requirement for more streamlined interoperation with other grocers, suppliers, public sector
Vertical Cloud	Accelerates	<ul style="list-style-type: none"> • Greater push to automation in grocery-specific functions that defy 'generic' software and service solutions • Better data flows, faster cloud migration • Service innovation by supply chain players as they evolve and grocery grows • Accelerated push into D2C by FMCGs
Orchestrator	Accelerates	<ul style="list-style-type: none"> • Emphasis on flexibility of demand/ supply matching • New technology players pivoting from food service to grocery
Nutrition As A Service Provider	Accelerates	<ul style="list-style-type: none"> • Furloughing, food supply for the vulnerable is effectively/ unprecedented Universal Basic Income for mass population • Need to reduce strain on health systems may highlight importance of health and nutrition to national resilience
Food Technology Disruptor	Accelerates	<ul style="list-style-type: none"> • Likely shortening of supply chains and emphasis on production • Social changes e.g. attitudes to emissions • Historic inability of food producers to innovate will accelerate role of new/ alternative players
Grower in Every Home	Accelerates	<ul style="list-style-type: none"> • Increased interest in hyper-local manufacture and supply • Consumer desire for increased self-sufficiency
Decentralised Grocer	Neutral	<ul style="list-style-type: none"> • Societal focus on responsibility of business re: employment consistency and fairness (no zero hours, gig etc...); versus • Likely increased focus on system flexibility, local commerce etc...

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