

CHOOSING A MODEL

The Strategic Choices For OEMs Created By On Demand Mobility

- Automotive OEMs currently occupy a well-understood part of the value chain
- They operate a clear ownership model -- selling the vehicle quickly
- OEMs need to choose how they wish to participate in on-demand mobility
 - Their natural inclination will be to have it all, this seems unrealistic
 - » Apple, Vodafone and Carphone Warehouse are separate for a reason
- On-demand mobility changes how the value chain will work and be rewarded
 - Lessons can be learned from other travel as a service models (e.g. air travel)
- Much of the value lies in areas where OEMs have little experience
- Support services for on-demand will create white spaces to be exploited

Today, most OEMs control
Making, share Selling and
stay away from Running,
apart from supplying parts
that they make

TODAY'S VALUE CHAIN

MAKING THE VEHICLE

Designing the vehicle
Manufacturing the key components (non-commodities)
Assembling the vehicle

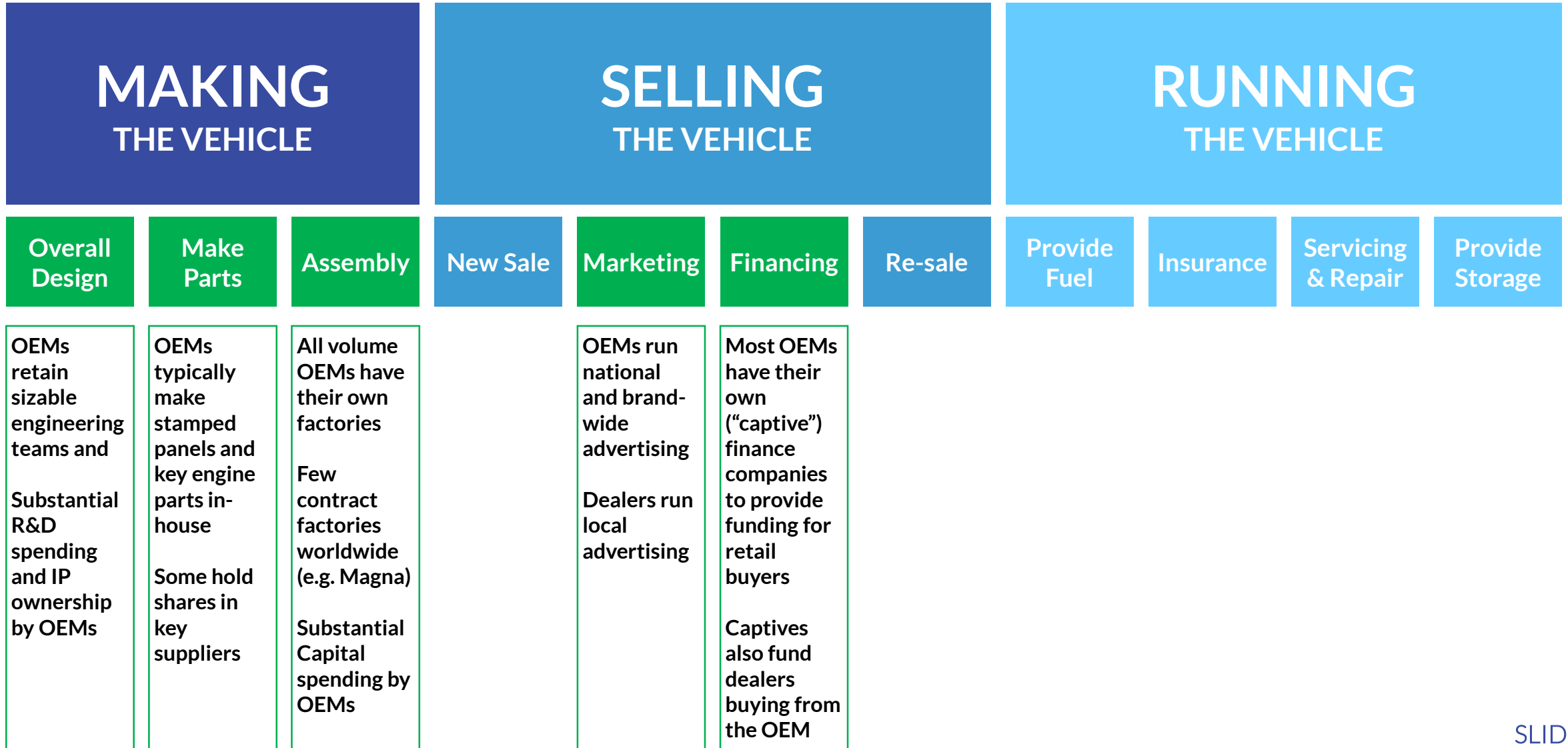
SELLING THE VEHICLE

Sale and delivery of new vehicle to the consumer
Marketing of the brand and vehicle
Financing of the vehicle purchase
Resale of used vehicles

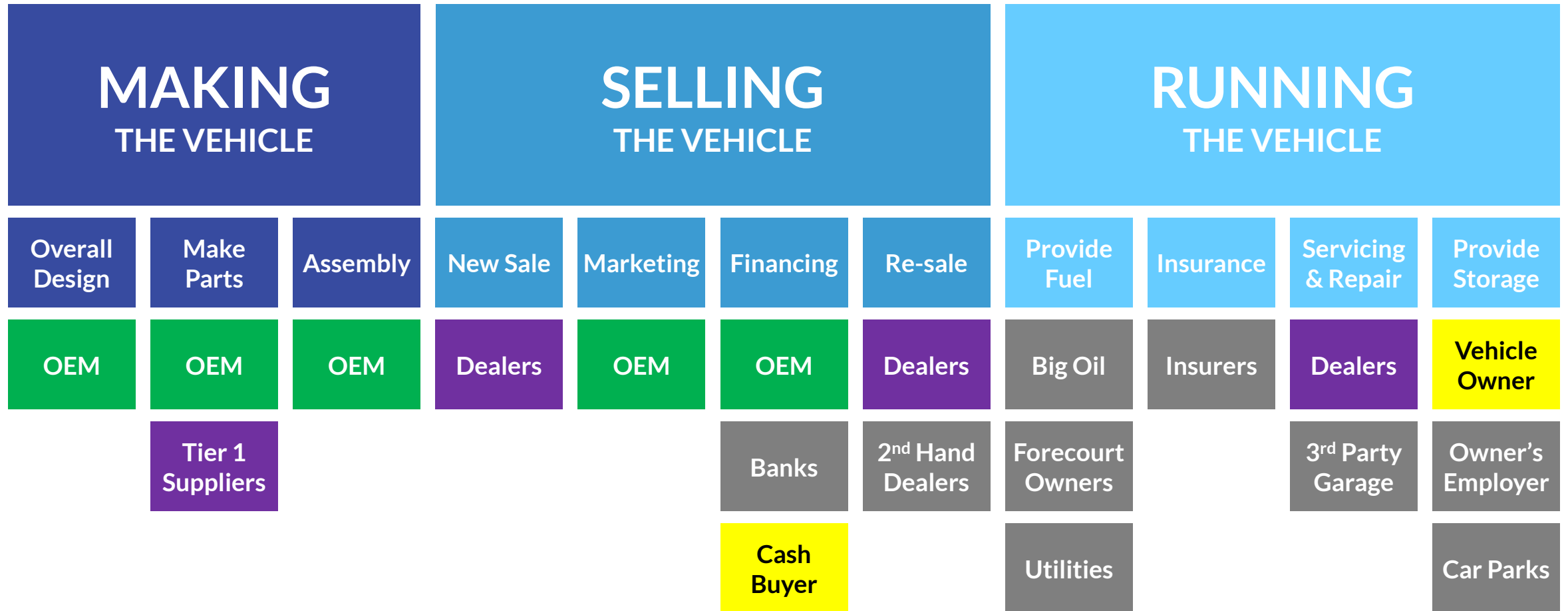
RUNNING THE VEHICLE

Providing fuel
Insurance to cover vehicle and driver liability
Servicing and repair of the vehicle
Providing a storage location when vehicle is not in use

WHAT DOES THE OEM DO TODAY?



WHO DOES WHAT IN THE VALUE CHAIN?



Key: OEM OEM Partner 3rd Party Asset User

**How does that compare to
other industries?**

**Generally, manufacturers
have little involvement in
selling and running**

- Soft drinks company (e.g. Coca-Cola)
 - Controls design (recipe) and marketing but does not always run the manufacturing (bottling)
 - Sold through a wide variety of shops, does not control the point of sale
 - Less complex value chain than automotive -- drink is immediately consumed
- Sports wear (e.g. Nike)
 - Controls design and branding but uses contract manufacturer
 - Some direct sales (mainly online), sold through a wide variety of shops
 - Less complex value chain than automotive -- garment is disposed of rather than undergoing significant maintenance (unless a valuable collectors item)

- Smart Phones (e.g. Apple)
 - Controls design and branding but uses a contract manufacturer
 - Normally sold by network operator -- phone price is frequently bundled with running costs (network connection charges) and sometimes insurance
- Washing machines (e.g. Whirlpool)
 - Controls design but may use a contract manufacturer
 - Sold by 3rd party retailers, who do most of the advertising and offer finance
 - Commodities to run the machine supplied by shops and utilities
- Luxury handbags (e.g. Louis Vuitton)
 - May control almost the entire value chain from design through to sale (sometimes in a concession), no financing (don't touch what you can't afford)
 - Complete control over brand experience -- reinforces price premium

**Outside of luxury goods,
few businesses try to do
everything**

COMPARISON TO OTHER INDUSTRIES...

	MAKING		SELLING				RUNNING	
	Design	Manufacture	New Sale	Marketing	Financing	Re-sale	Disposable Commodities	Support
Traditional Autos	OEM	OEM	Dealer	OEM				
Tesla					Partner Bank			
Soft Drinks			Any Shop		N/A	N/A	N/A	N/A
Sportswear		Contract Manufacturer	Any Shop		N/A	N/A	N/A	N/A
Smart Phones		Contract Manufacturer	Phone Shop	Network Operator	Network Operator	Small Shop	Network Operator	
Washing Machine			Electrical Shop	Shop	Shop	Owner (e.g. via EBay)	Water & Detergent	
Luxury Handbags						Grey Market	N/A	

Key: Brand Owner Key Partner 3rd Party Asset User

On-demand mobility brings unfamiliar challenges...

- On-demand is the sale of a service rather than a physical product
 - Per mile travel (maybe via subscription) without custody of the asset
- The customer pays for the entire service in a single transaction
 - Per mile cost covers depreciation, fuel, infrastructure and staffing
 - Similar in concept to mobile phones
- The mobile phone industry has different specialisations
 - Phone manufacturer (Apple), network operator (Vodafone), network infrastructure manufacturer (Cisco) and retailer (Carphone Warehouse)
 - In on-demand mobility, OEMs are positioning themselves to be both manufacturer and operator (unclear on infrastructure provider)

**Here is how OEMs are
setting out to work in on-
demand mobility...**

OEM APPROACH TO ON DEMAND MOBILITY

MAKING THE VEHICLE			SELLING THE SERVICE				RUNNING THE SERVICE			
Overall Design	Make Parts	Assembly	Service Provider	Marketing	Financing	Re-sale	Provide Fuel	Insurance	Servicing & Repair	Provide Storage
OEM	OEM	OEM	OEM	OEM	OEM	TBD - N/A?	OEM to customer	OEM to customer	TBD	TBD
	Tier 1 Suppliers		Ride Hailing Firm	Ride Hailing Firm			3 rd party to OEM	3 rd party reinsurer		

Key: OEM OEM Partner 3rd Party Unclear Note: OEM is asset user

- Unclear what the resale market will be
 - If these vehicles are industrial assets they may not be suitable for retail customers, even on a second hand basis
 - For instance, rare to install ex-laundrette washing machines at home
- Unclear who will carry out servicing
 - OEM fleets could potentially use franchised dealerships
 - Likely inefficient for a large fleet to outsource in such a fragmented way
- Unclear where the vehicle depot will be and who will own it
 - Substantial difference between peak and off-peak demand
 - Facilities similar to bus garages may be required
- Impact of autonomy -- vehicle can drive itself to low cost servicing / depot location

- Reduced new car sales volumes
 - Mobility vehicle is a business to business purchase so even at constant sales volume, fewer vehicles would be sold by dealers
- Reduced re-sale volume
 - As industrial assets, mobility vehicles may be unsuitable for private owners
 - Existing mobility programs already showing customers are migrating from used car ownership more quickly than from new car ownership
- Reduced servicing demand
 - Fewer cars in private hands
 - Mobility fleet owners may use large-scale servicing to reduce costs

Are the OEMs trying to do too much?

**Can we compare to other
sectors?**

Question:
**What do we see in the
commercial air travel
value chain?**

Answer:

Aeroplane OEMs are in less of the value chain than automotive OEMs are aiming for

COMMERCIAL AIR TRAVEL VALUE CHAIN



Key: OEM OEM Partner 3rd Party Asset User Automotive OEM Aspiration

- Manufacturers are separate from service providers
 - Might not be precedent setting (at one time, Boeing owned United Airlines)
 - **Implication:** Automotive OEMs would be trying to control more of the value chain that aircraft manufacturers have proved capable of
- Design is highly specialised -- airframe is discrete from engine and cabin fit
 - **Implication:** Vehicle manufacturers might do less than they do today
- Branding matters (but not equally) -- airline, airport, travel agent, aeroplane
 - Airbus and Boeing brand power is similar but both are superior to Tupolev
 - **Implication:** OEM brands still have value, but less differentiation than today
- Long history of state intervention in both airlines and manufacturers

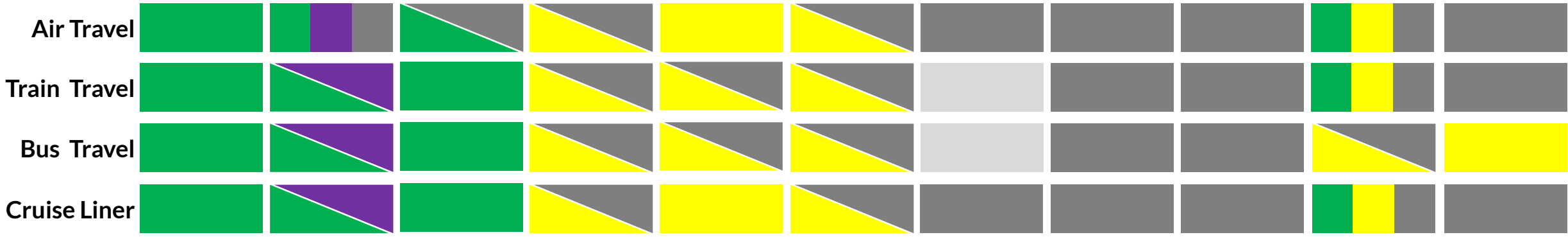
Question:

Do other travel value chains show a broader role for the manufacturer?

Answer:

Not really. Across industry sectors, manufacturers stick to manufacturing and servicing.

DIFFERENT TRAVEL VALUE CHAIN



Memo: Automotive OEM Approach To On Demand



Key: OEM OEM Partner 3rd Party Asset User See Appendix for detailed value streams

**So, the vehicle business is
already an outlier.**

**Other travel industries
have a narrower role for
the manufacturer.**

Question:
**Can automotive OEMs
take a wide role in on-
demand mobility?**

Answer:

Unlikely. The new areas in mobility have little to do with existing OEM competencies.

NEW COMPETENCIES REQUIRED



- ❖ Software -- Vehicle software is not customer-facing, often written by suppliers
- ❖ Demand Modelling -- Capacity utilisation is not an industry strength historically
- ❖ E-Commerce -- OEMs still regard it as news when they sell cars online
- ❖ Local Government Liaison -- Plenty of lobbying expertise, licencing is new
- ❖ Customer Relationships -- Dealer-led today, some experience from financing co's
- ❖ Fleet Management -- Coca Cola knows more about running fleets than any OEM

Let's summarise the new challenges of on-demand mobility to the traditional OEM business model...

**It is abnormal for
the
manufacturer to
be the service
provider**

**Mass transit
schemes use
industrial assets
unsuitable for
retail customers**
(even city bike schemes)

**Governments
interfere in
transport
systems for civic
benefits and
consumer
protection**

Manufacturer is not the service provider

- Present trial schemes cover a wide scope, enabling OEMs to learn about the value chain
- Once the model is established companies will have to choose where they play
- They will have to spin off manufacturer or service provider

Vehicle is an industrial asset

- Industrial asset may be quite different from retail vehicle
- More expensive upfront but longer lasting, cheaper to run
- Brand value is less important
- Overall Industry will be smaller without a significant increase in miles travelled

Government likely to interfere in the market

- Airline and train industries commonly have significant state direction
- Bus and taxi companies often subject to municipal and regional licensing & control
- Enhanced regulatory oversight correlates with monopolistic potential

- There is a huge reduction in manufacturing footprint coming
 - Lower demand as mobility vehicles last longer and have better utilisation
 - At the same time, “Industry 4.0” productivity measures will reduce manning
 - Restructuring will become a key strategic competency
 - Job losses will be heavily resisted by the same governments OEMs want favourable treatment from in emissions control and mobility licencing
- OEM-owned mobility providers may struggle if limited to the owner’s products
 - Competitive providers need low cost vehicles that the customer likes
 - OEM-owned providers will suffer if the owner has important portfolio gaps
 - Vehicle production business will be hindered if a smash-hit product can only be sold to the captive mobility company
 - If these rules are relaxed, OEM owning the provider shows fewer synergies (OEMs largely disposed of rental businesses for the same reasons)

Question:
Any good news?

Answer:

**There are some areas
where on-demand
mobility will create new
business areas**

WAYS TO SUPPORT ON-DEMAND

Service Provider

Ride Hailing companies already in this space
Very little relationship to existing automotive competences
Maybe not so bad if automotive OEMs miss out here -- in many travel sectors, the service provider is loss-making

Finance Provider

OEMs are very active in retail financing, lots of scope to expand in fleet financing
Competition -- existing vehicle contract hire firms and leasing companies from adjacent industries (e.g. trains and planes)
Scope for “power by the hour” type model

Servicing and Depot

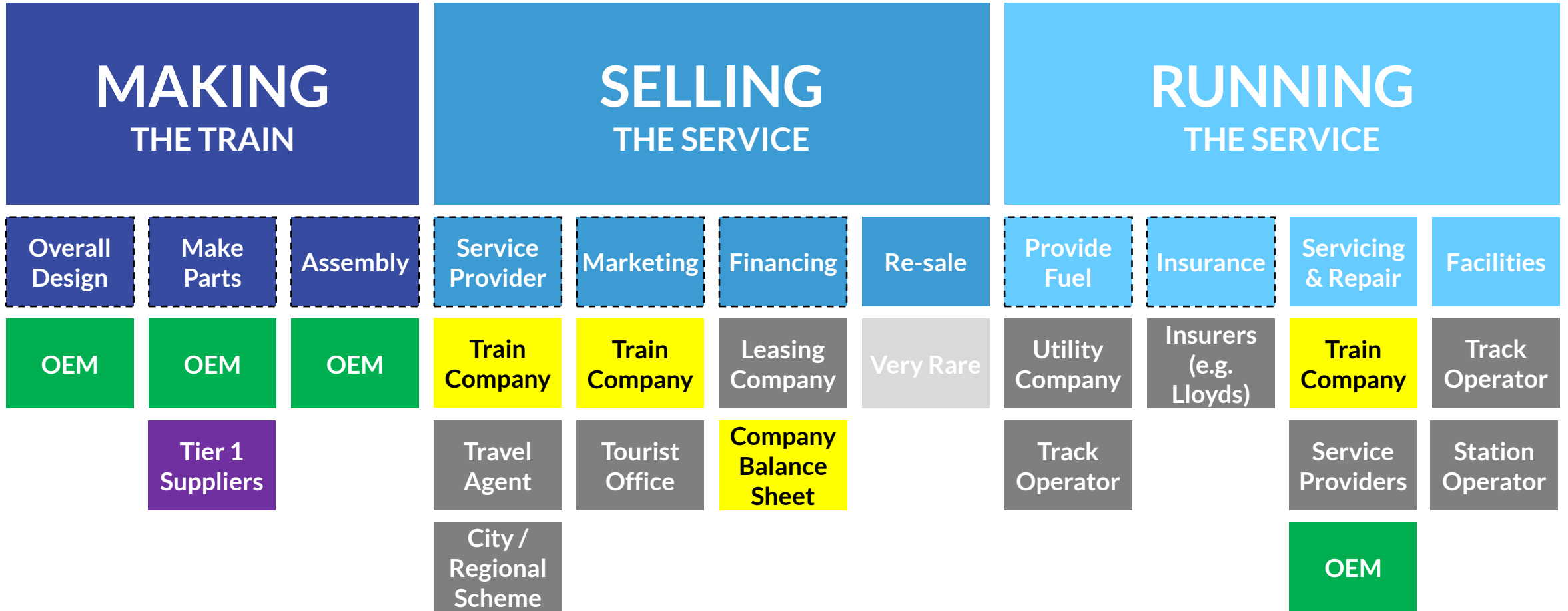
On demand fleets will require servicing and depot infrastructure that does not currently exist
Low-cost mass, predictable servicing -- steady revenue stream
Low cost depot near to population centres -- manage off-peak

In summary...

- Automotive OEMs occupy a well-understood part of the value chain, based around selling vehicles quickly to retail or retail-like customers
- On-demand mobility will decrease private ownership and disrupt this model
- OEMs already cover more of the value chain than manufacturers in other sectors and they are unlikely to be able to repeat this with on-demand mobility
- Much of the value in transportation as a service lies in areas where OEMs have little experience (software, consumer relationships, fleet management)
- Before the business model matures, OEMs will need to narrow their focus
- Support services for on-demand will create white spaces to be exploited

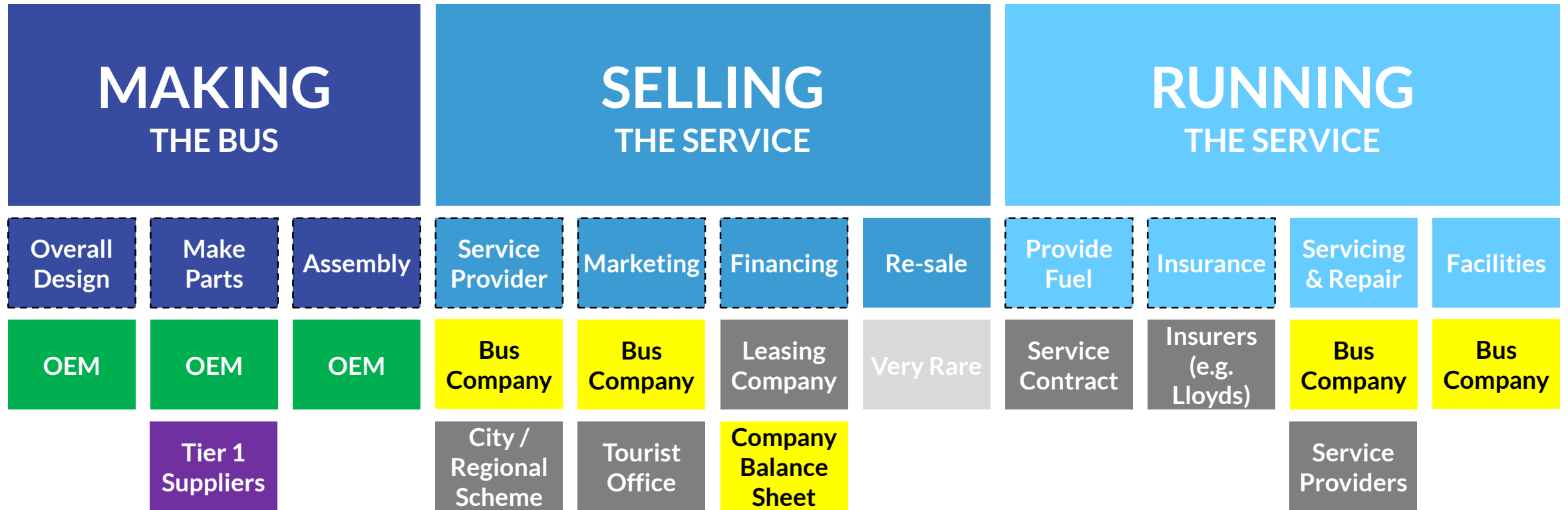
APPENDIX

TRAIN TRAVEL VALUE STREAM

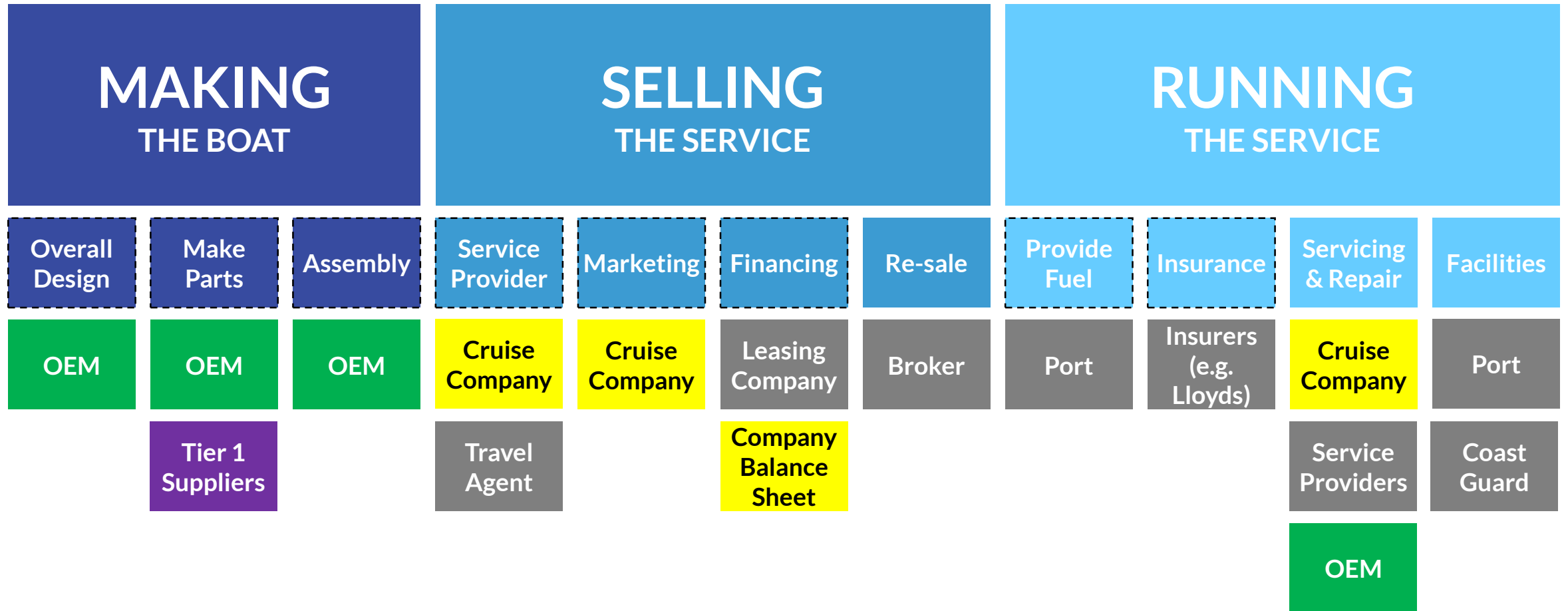


Key: OEM OEM Partner 3rd Party Asset User Automotive OEM Aspiration

BUS TRAVEL VALUE STREAM



PLEASURE CRUISE VALUE STREAM





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