

A segmented approach to clean mobility solutions for 1.2B+ Indians 服务12亿印度人民的清洁出行方式

2nd International Forum on Low Carbon Development for Cities
第2届城市低碳发展国际论坛

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Lithium Urban Technologies Private Limited Lithium城市技术有限公司
Tomorrow's Transportation. Today 未来的交通就现在

September 2019
2019年9月

Lithium in numbers

Lithium 的数量

Largest 100% EV fleet in the world outside China

除中国之外世界最大的纯电动车队

India's largest charging network 印度最大的充电网络

Proved financial viability of Evs 被证实的财务可行性

Backed by IFC and LGT Capital 由国际金融公司和LGT资本支持

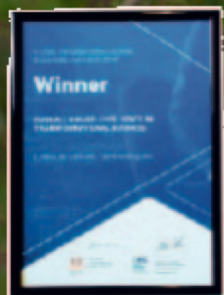


DISRUPTING THE MOBILITY MARKET WITH
Unlimited mileage | Analytics driven high productivity fleet |
Future proofed | Multi-year zero escalation

颠覆出行市场

无限里程 | 数据分析驱动的高效车队 |

未来有保障 | 多年零升级



Winner FT/IFC Awards 2019



ISO 26000

950+
FLEET SIZE

500+
DC+AC CHARGERS

~81,000,000
ELECTRIC KMS

~17,000 MT
CO₂e ABATED

10,000+
DAILY TRIPS

23,000+
DAILY PAX

250+
KMS / CAR / DAY

2.3/ride
AVG. OCCUPANCY

17M kWh
ENERGY REPLACED

90%
RENEWABLES
POWERED

25+
CLIENTS

7
CITIES

200,000+ hrs
DRIVER TRAINING

100%
VERIFIED DRIVERS

0
FATALITIES

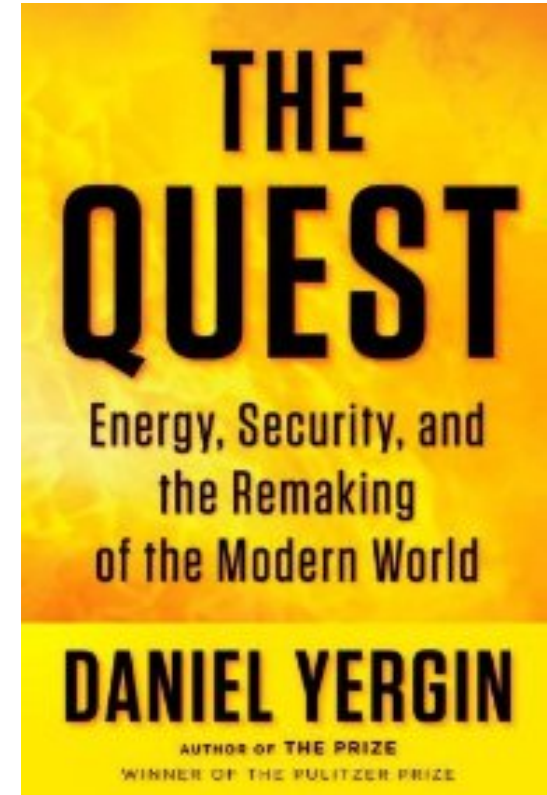
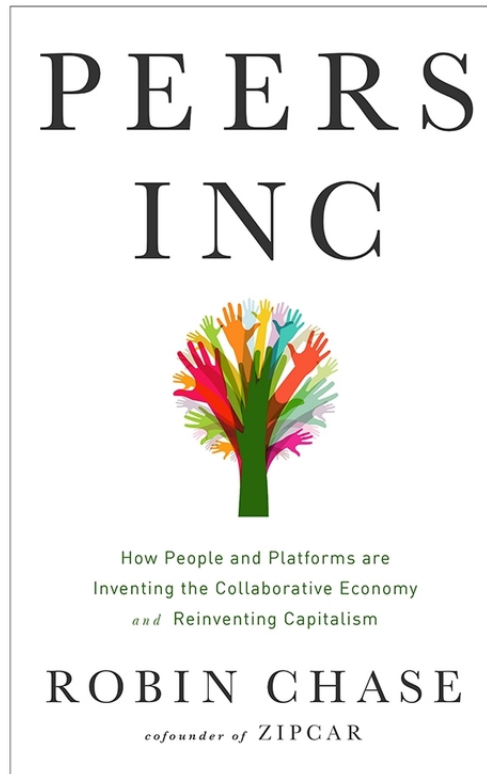
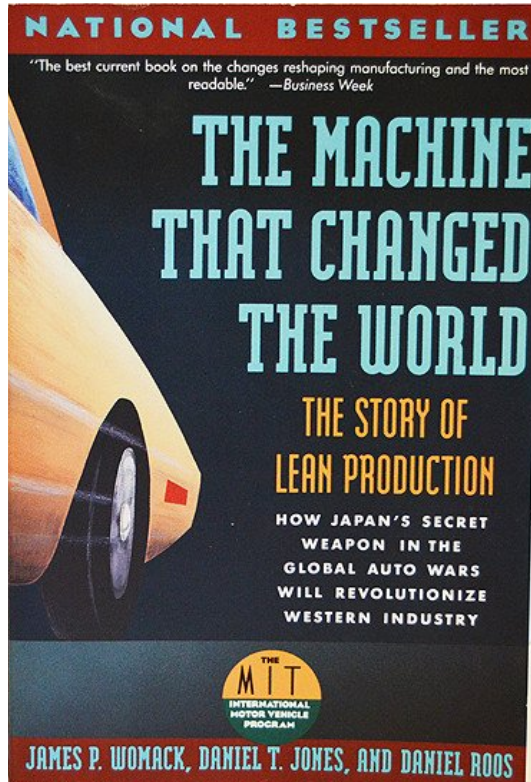
0.0000017
ACCIDENT PER KM

5,000+
FAMILIES
INTRODUCED TO
BANKING

1,500+
FAMILIES WITH
HEALTH
INSURANCE

EBITDA +ve
SINCE M10

The Change 变革



renewables inflection | energy security | storage | shared eco
可再生能源 | 能源安全 | 储存 | 共享经济

Key Tenets 关键原则

the future of urban public transportation will be driven by 4 key tenets

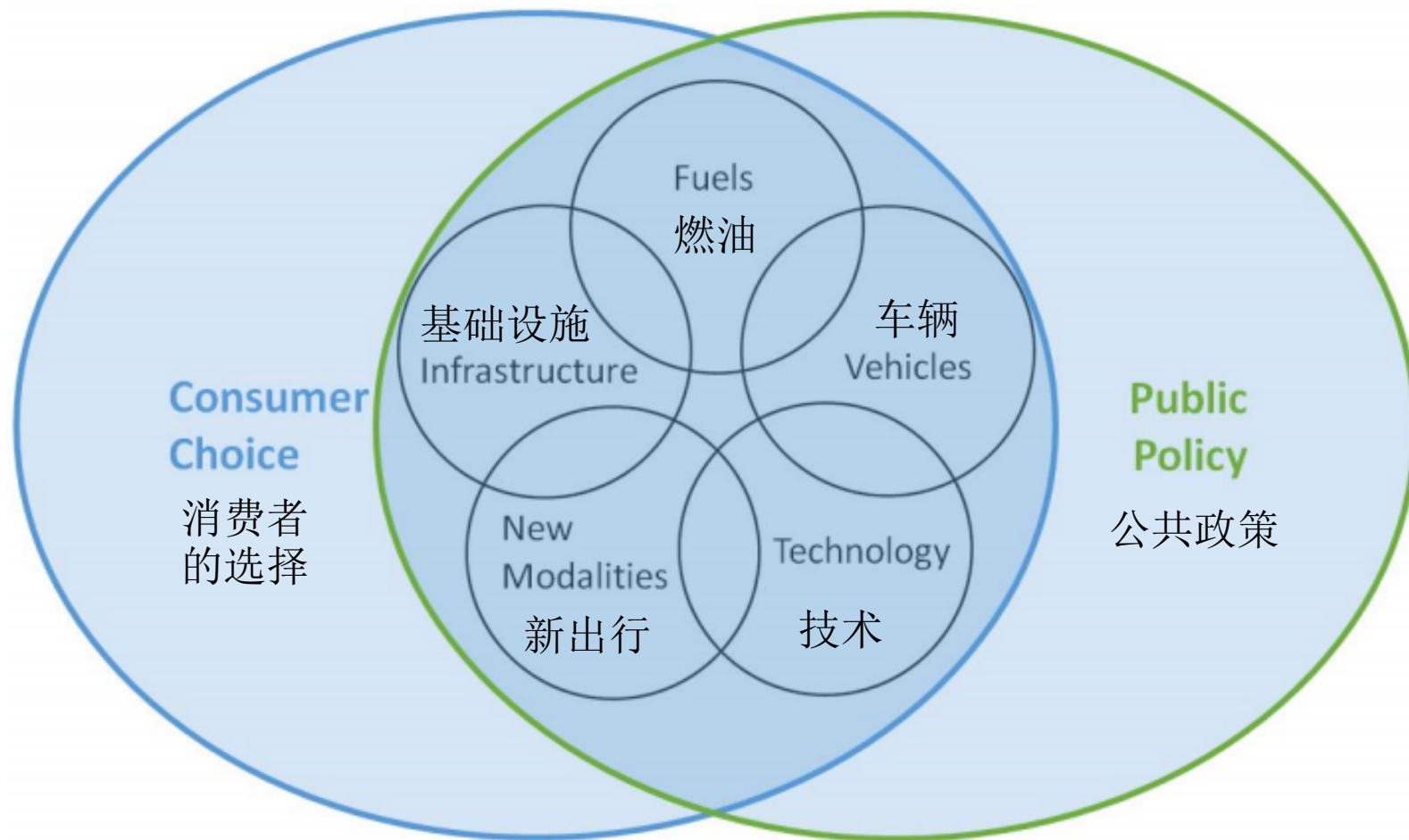
未来的城市公共交通将由以下四个关键原则驱动

Clean | Distributed | Shared | Connected
清洁 | 分布 | 共享 | 连接

companies that build solutions that incorporate these tenets will be front-runners in the urban transport market.

那些提供包含上述原则出行解决方案的公司
将是城市交通市场的领跑者

The Vectors



Uncertainty x Pace of Change
emotional | physical | financial | technological
不确定性 x 变革速度
情感 | 身体 | 金融 | 技术

Consumption : The Generational Shift

消费：代际的转变

Ownership to Ridership 出行获得感

Pay Per Use 按次付费

Tech Consumption 技术消费

Environmentally Sensitive 注重环保

Zero Incumbency 零责任

...the ME ME ME generation!

注重个人感受

access | availability | flexible | cost effective | personalized | reach | safety

Defining Urban Futures 定义城市的未来



The **Urban Economy** can no longer be segmented into Mobility, Energy, Education, Health, and other sectors. Instead, we will see the **emergence of tightly coupled markets** for what people do in cities – **Life, Work, Play, etc.**

城市经济不再简单划分为交通、能源、教育、健康和其它行业，而是成为紧密联系的市场，人们在城市里生活、工作、娱乐等

At the same time, as cities get bigger, we will also see the **emergence of distinct local neighbourhoods** as an important factor in markets.

与此同时，随着城市越来越大，我们也看到各种地方社区的兴起，成为市场的重要因素

services + products will need to cater to this shift in demographic & consumption
服务+产品需要适应人口和消费的这些变化

The Opportunity for India

印度的机会

Transportation = Energy
交通=能源

India: Huge Arbitrage Between
Hydrocarbon and Electricity
印度：碳氢化合物和电

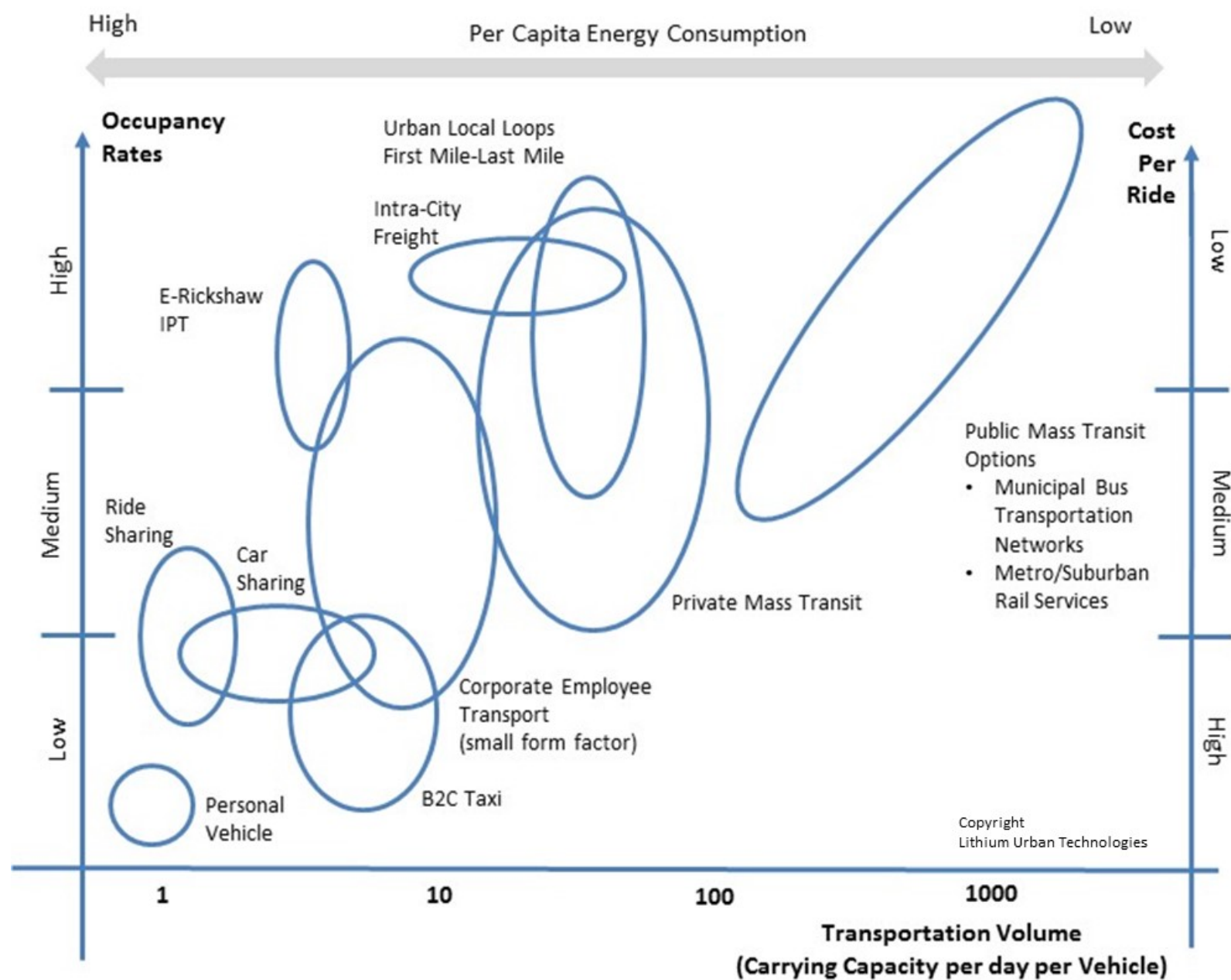
Science and Scale Drives Down Prices
of Renewables
科学和规模降低了可再生能源的价格

Storage Cost Plummet
储存成本下降

breaking the basic proportionality of price and distance 打破价格和距离的基本比例关系

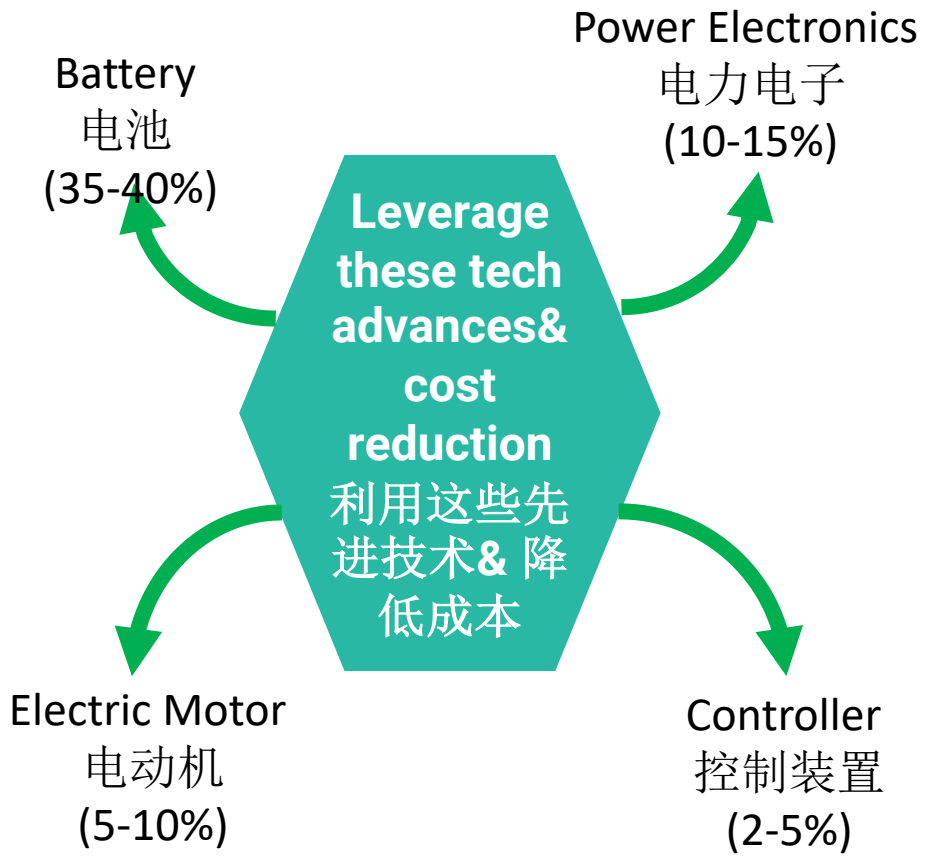
Decoupling of Gen & Con

Urban Mobility Energy Landscape 城市交通能源形势



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EV Architecture 电动公交车结构



a mobile phone on wheels = Software + COTs + app customization
design approach | modularity | customization | ecosystem play | operating system

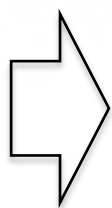
Exploit the EV Modularity 利用电动车模块化

- Faster refreshes 更新更快
- Lower Costs 更低的成本
- Increased Life 使用寿命延长
- Greater Application Specificity
应用更加专业化



Its Impact 影响

- Capital Efficiency 资本效率
- Application Specificity 应用专业
- Increased Asset Life 资产寿命延长
- In-Situ Upgrades 原地升级



Similar to Selling Software
与销售软件类似

- Modules 模块
- Upgrades 升级
- Pay per Use 按次收费
- etc.



modularity is key for rapid adaptations = don't approach EV design as ICE

Maximizing Energy Efficient Miles 最大化能源效率

to understand
Urban Mobility and how
Technology best addresses those needs.
Optimizing fleet and infrastructure for various
duty cycle requirements that is **Customer
Centric,**
**more Productive and
Energy Efficient**

了解
城市交通以及技术如何最好地满足这些需求。

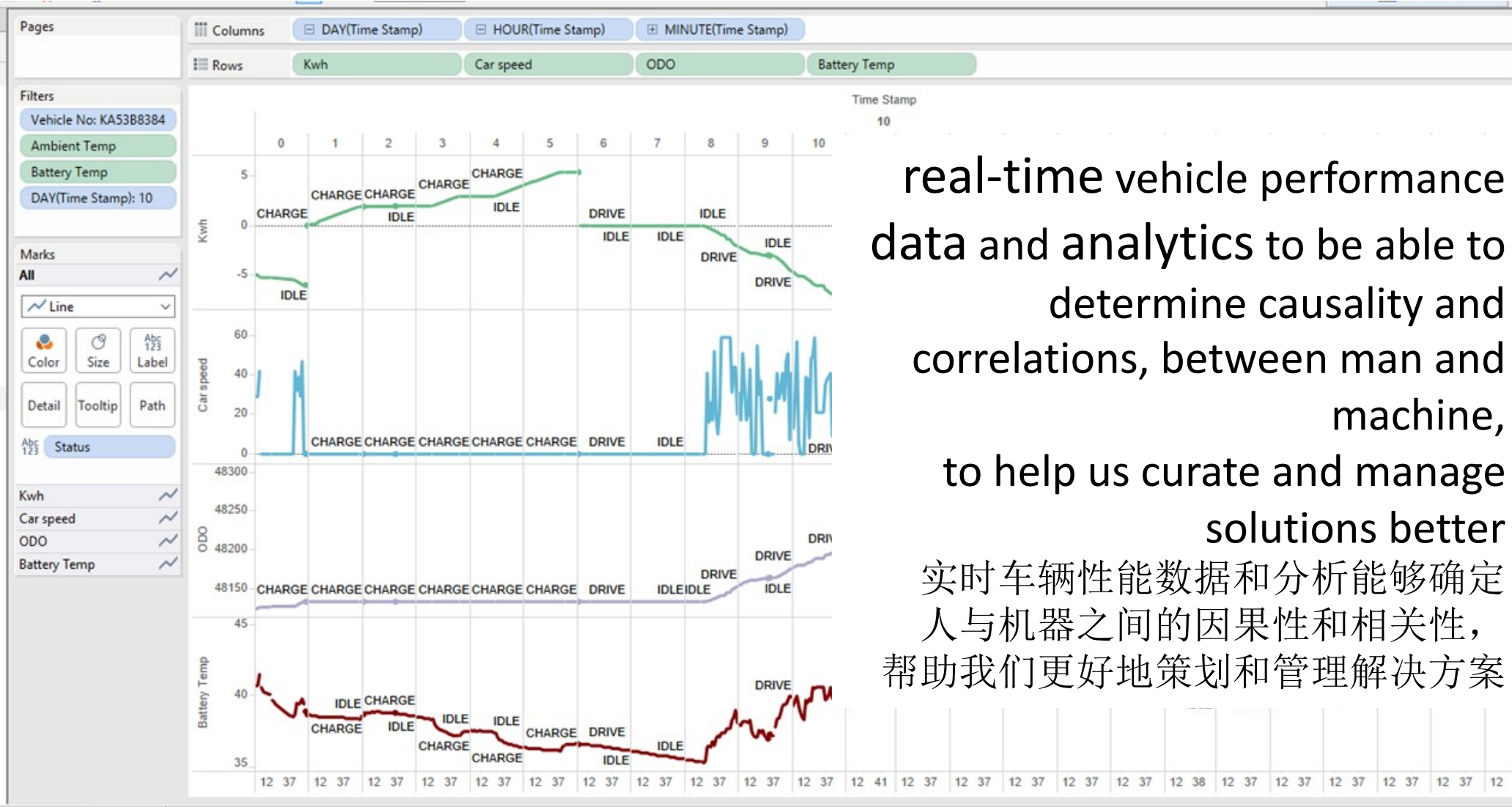
优化车队和基础设施，
以客户为中心，更富有成效和
高效节能

Demand Zoning & Management | Range Estimation | Fleet Management & Optimisation |

Driver Performance Management | Asset (Vehicle + Charging Station) Performance Management

configuring the vehicle to the application duty cycle

Data Drives Solution Curation 数据驱动解决方案管理



real-time vehicle performance data and analytics to be able to determine causality and correlations, between man and machine, to help us curate and manage solutions better

实时车辆性能数据和分析能够确定人与机器之间的因果性和相关性，帮助我们更好地策划和管理解决方案

determining causality for faster pdca cycles

Data Drives Solution Curation 数据驱动解决方案管理

SPATIAL technology, will be a very important lever of mobility solutions in the future

空间技术，将成为未来移动解决方案的一个非常重要的杠杆

Where is the demand, and how can we optimize supply to meet this ?

What is the excess capacity available with different mobility solutions, and how can these be shared effectively ?

What is the most efficient mode of choice to make in response to a mobility need ?

The answers to these questions will present pathways for new opportunities.

需求在哪里，我们如何优化供应以满足这一需求？

不同移动解决方案有多少过剩供应能力，以及如何有效共享？

为满足移动需求，最有效的选择模式是什么？

这些问题的答案将为新的机会提供途径。

solutions will win and not products

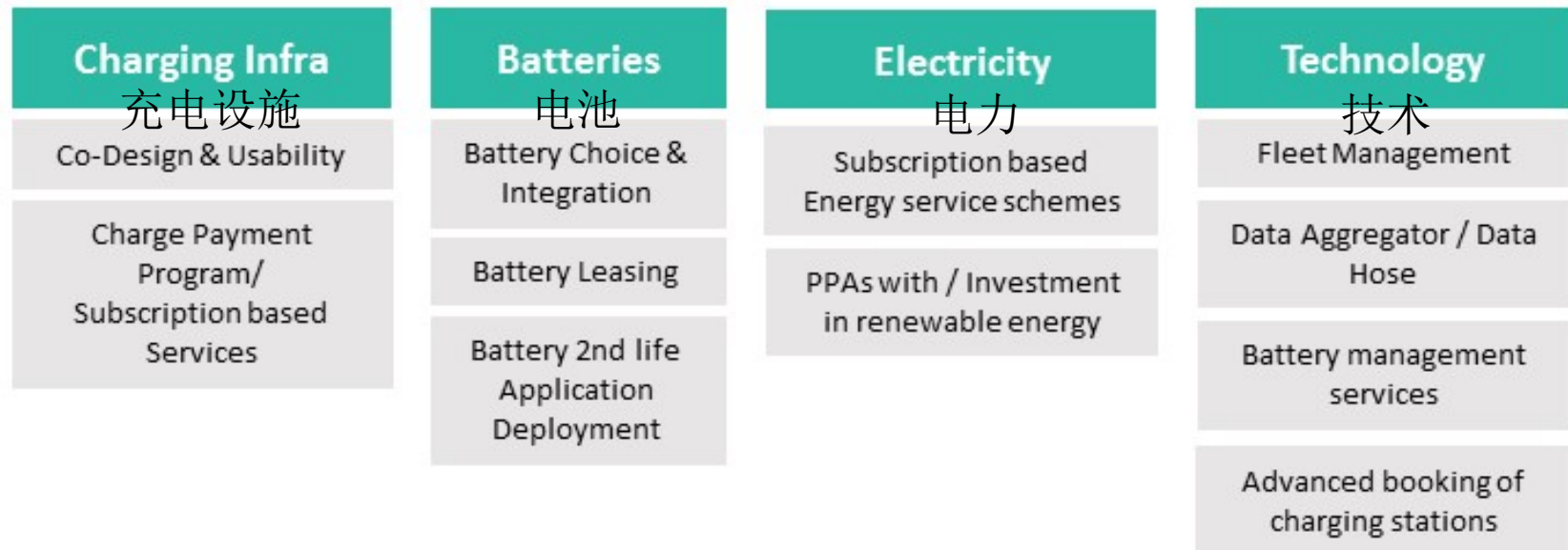
The EV Ecosystem Play 电动汽车的生态系统

Service Provider – Market Segments 服务提供商-市场分类

Corporate Employee Transportation	Fixed Point to Point	Car Sharing	Mass Transit	Intra-City Freight
Consumer Kerb-Side	Local Loop	Ride Sharing	BRTS	Last Mile



System Integration 系统整合



critical to the success is the ecosystem play
create | different | vibrant

op lease

battery lease & swapping 电池租赁和交换

lifecycle cost guarantee 生命周期成本保证

extended warranty 延长保修

life extension program 延长使用寿命

re-application 重新申请

refresh-upgrades 更新升级

energy programs 能源计划

pay as you drive [how & how much] 开车付钱[怎样付和

creating new financing structures critical to the success in EV market share 付多少]



Lithium

Tomorrow's Transportation. Today.

thank you
谢谢

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