

# The Evolution of Digital Technology

From narrow spectrum to broad spectrum  
competition

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Evolution

Competition

Strategy



Evolution

Competition

Strategy

# Evolution Phase I – through ~2010

Google, Facebook, Netflix, etc. exploited activities in a single domain

The algorithm was the asset and network effects were critical

## Evolution Phase II – 2010 through today

Data lakes – not just the algorithms and network effects – are the key assets and bases for competitive advantage

# Data Matters

The most valuable data lakes combine behavioral customer data with machine data and environmental data

Implication: real time data orchestration is an crucial organizational capability

## ... And Dynamic Capabilities Matter

Data orchestration (“seizing”) requires managerial acumen and deep business and computer science smarts

# Implication – the European DMA is ill-advised

European Digital Markets Act (DMA) aims to provide access to proprietary data lakes

- Promotes free riding and disincentivizes investment
- Is technically inchoate because of privacy and other concerns
- Access to data alone means little; also need access to apps/services



# Theory in action: Leaders Speaking Dynamic Capabilities Language

*“There are decisions that can be made by analysis ...  
Unfortunately, there’s this whole other set of decisions that you  
can’t ultimately boil down to a math problem”*

Jeff Bezos, CEO Amazon, 2004

# Theory in action: Leaders Speaking Dynamic Capabilities Language

*“It's not the big that eat the small, but the fast that eat the slow.....we're a subscale market where there isn't the strong competition that we see overseas. We are too passive and we are missing an opportunity to get organised and achieve a lot more”*

Rod Drury, Chairman Xerox, 2017

# Innovation in the digital economy requires the design, development, and orchestration of ecosystems



Apple still has strong growth opportunities because of its ability to work simultaneously on hardware, software, and services ... Apple has the ability innovate in all three of these spheres and create magic .... This isn't something that you can just write a check for. This is something you build over decades.

Tim Cook, Taipei Times, February 2013



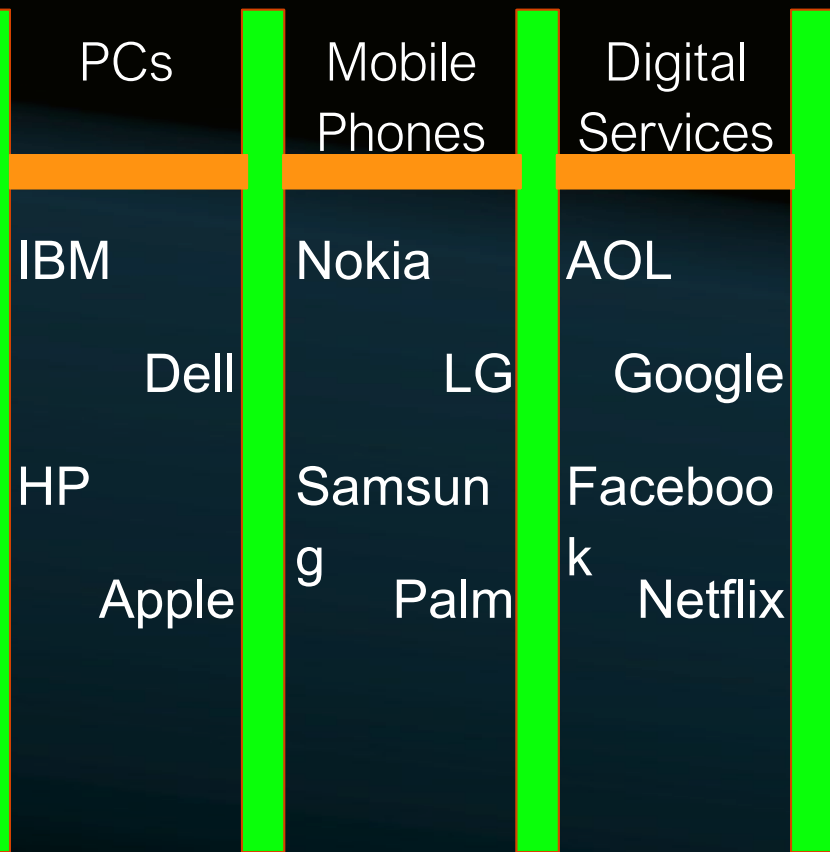
A Venn diagram consisting of three overlapping circles. The top-left circle is brown and labeled 'Evolution'. The top-right circle is bright green and labeled 'Competition'. The bottom circle is brown and labeled 'Strategy'. The circles overlap in various combinations, with the central area where all three overlap being a dark blue color. The background is a dark blue gradient.

Evolution

Competition

Strategy

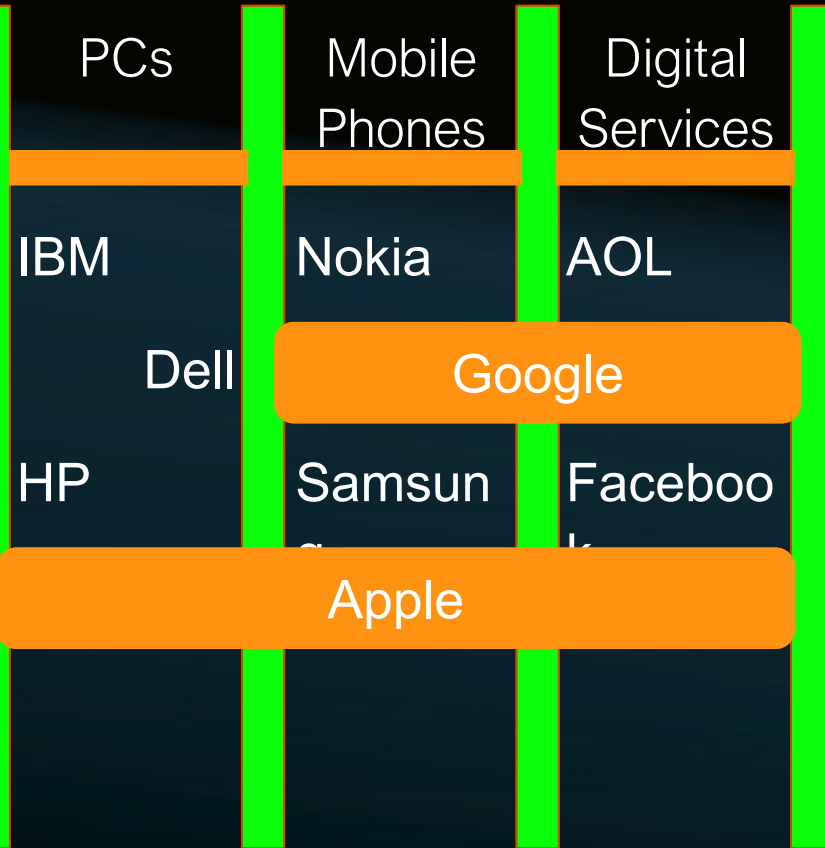
# Narrow Spectrum Competition – through ~2010



PCs	Mobile Phones	Digital Services
IBM	Nokia	AOL
Dell	LG	Google
HP	Samsung	Facebook
Apple	Palm	Netflix

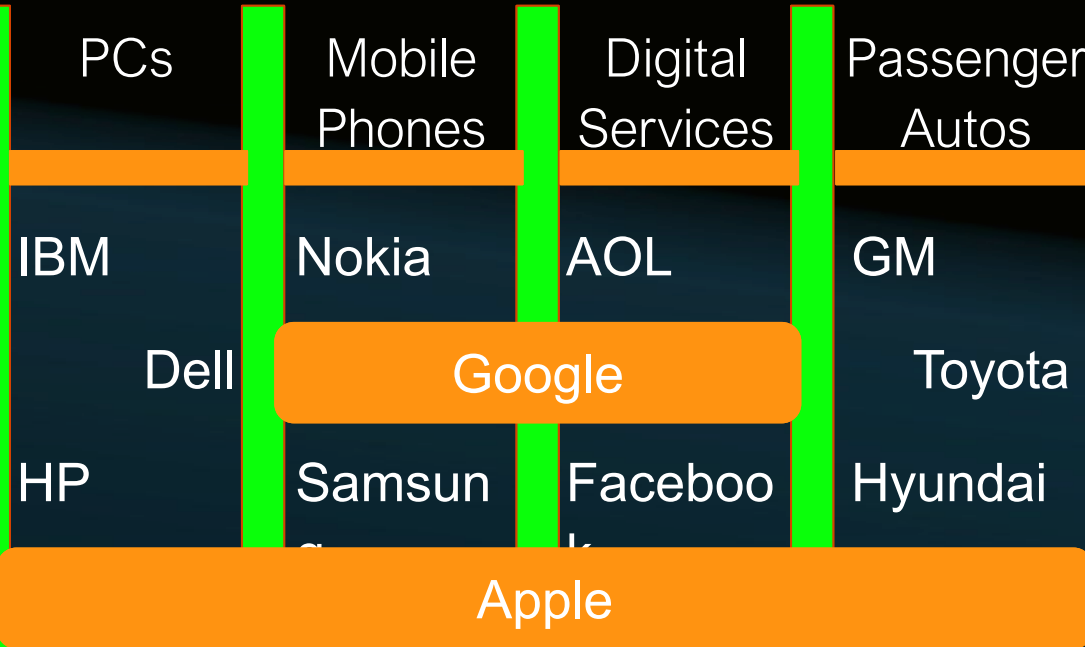
- Stable, known competitive environment
- Linear evolution
- Network and scale effects drive to oligopolies
- Hardware matters

# Broad Spectrum Competition – ~2010 onwards



- Disrupted, unstable, competitive environment
- Nonlinear evolution
- Software ecosystem network and scale effects drive to oligopolies
- Hardware increasingly abstracted and commoditized

# Projection? – the auto OEM sector



- Disrupted, unstable, competitive environment
- Nonlinear evolution
- Software ecosystem network and scale effects drive to duopolies
- Hardware increasingly abstracted and commoditized

2020

Evolved, non-integrated, User Experience (UX)

Digital Service Provider UX

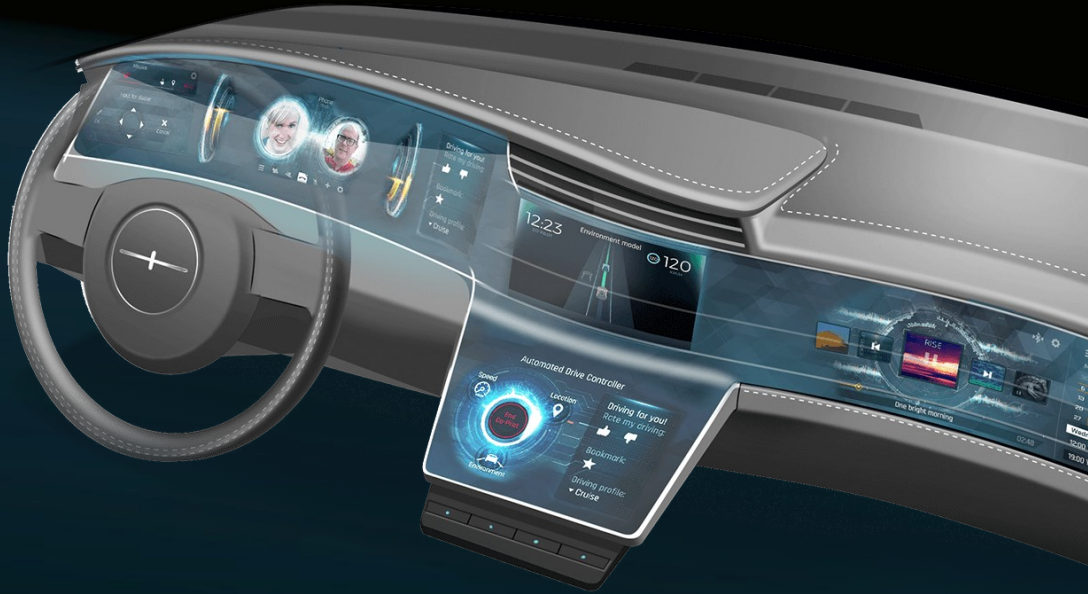


OEM UX



# 2030

## Disrupted, fully integrated UX

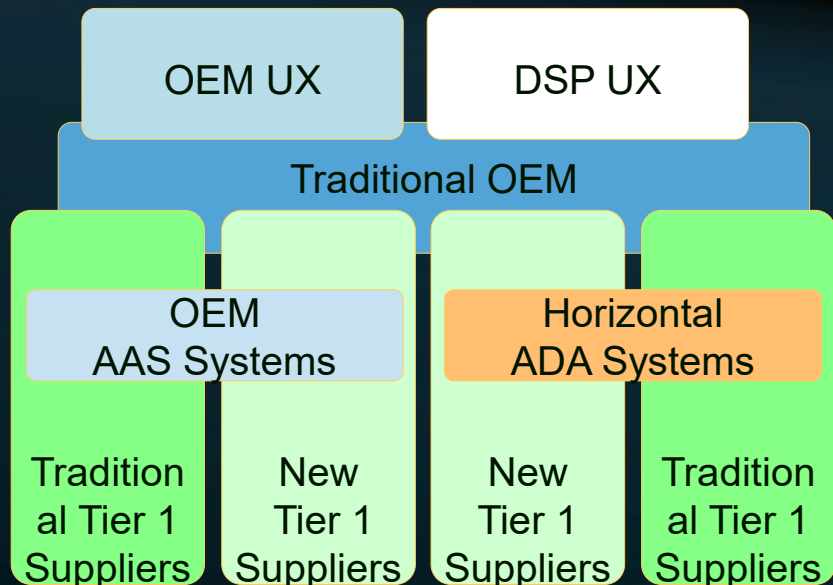


- Integrated software across all vehicle systems
- Globally interconnected over wireless networks
- Continually upgraded
- Surfaced to the driver as integrated software display and control system

# Integration Brings High Probability of Disruption

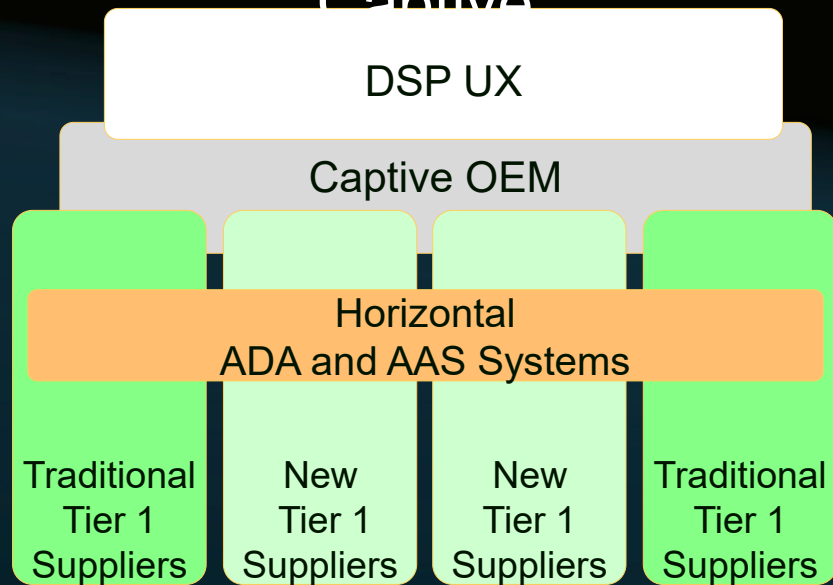
## Evolved OEM Ecosystem

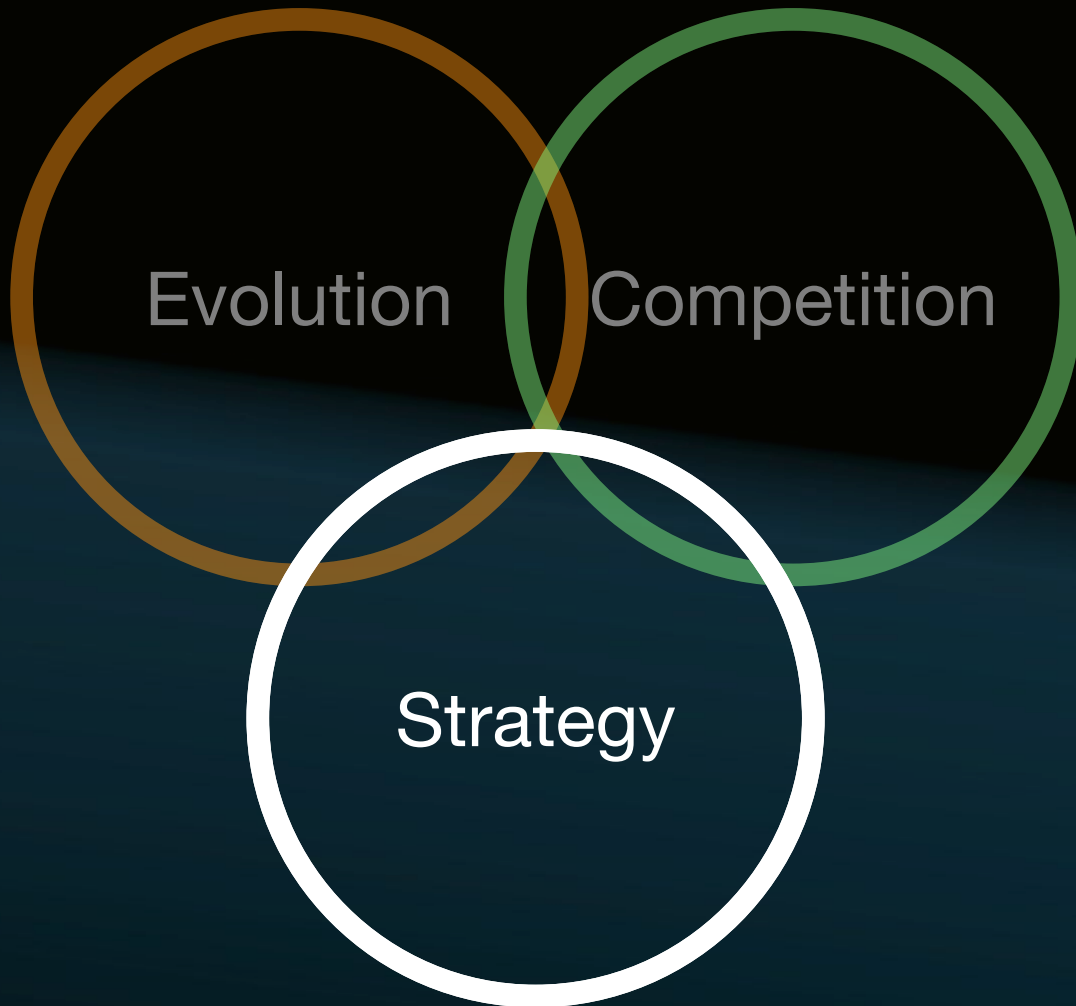
UX is Bolted On



## Disrupted OEM Ecosystem

UX is Integrated, OEM is Captive





Evolution

Competition

Strategy

# Today's data challenge is different

- The capabilities to collect and manage valuable customer behavioural data, and master the relevant uncertainties and its integration with other data and with an ecosystem of actors is a “new to the world phenomena” far more complex than orchestrating machine performance
- These capabilities currently lie with relatively few firms such as Apple, Google-Alphabet, Facebook.

# What does it mean for established firms?

- Most established firms in traditional industries are challenged, unless they are careful, they will move from being brand leaders to becoming subcontractors
- The only way to survive is to adjust the mindset, form alliances, invest heavily to build new dynamic capabilities



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# Thank You



## Unused Slides

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Tim Cook, CEO Apple, 2013