

September 2016

Sources of Innovation and Disruption

BIEE Oxford 2016



Richard Hepworth

Sources of disruption

How are megatrends affecting the energy sector?



Technological breakthroughs



Climate change and resource scarcity



Demographic changes



Shift in economic power



Accelerating urbanisation

Disruptive dynamics

Customer behaviour



“Grid provides back up”

Competition



“Outflanked and outpaced”

Production service model



“Outdated or stranded”

Distribution channels



“Digitalised intervention”

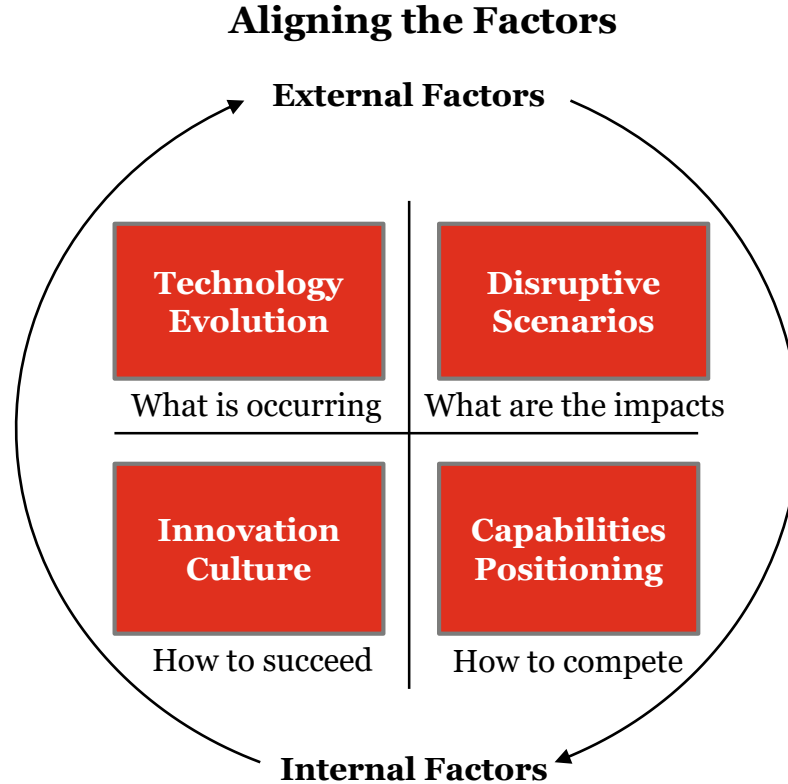
Government and regulation



“Caught in the crossfire”

European utilities value reduced by ~60% between 2008 and 2014

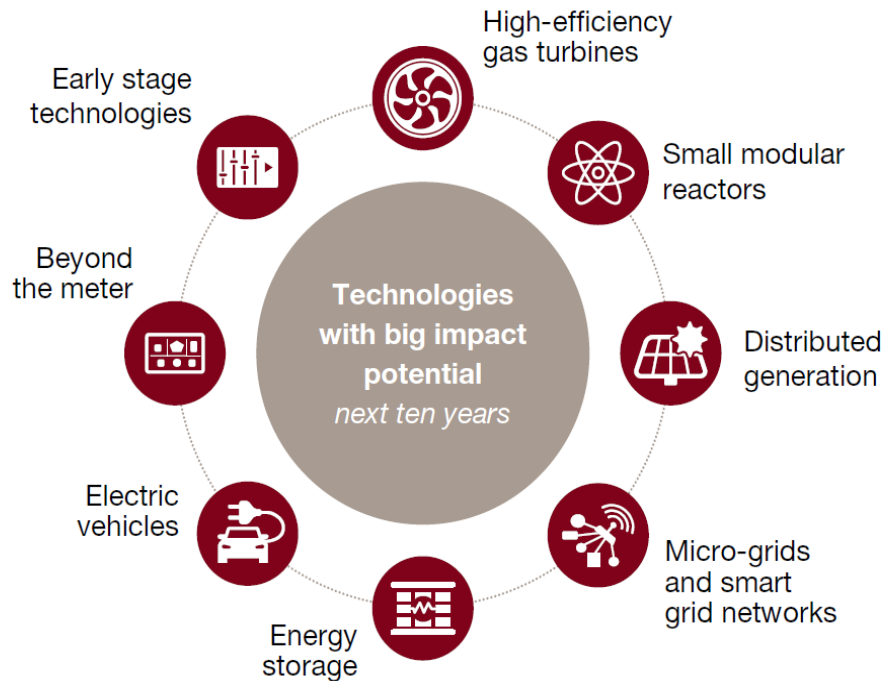
Capturing value from disruption



Proliferation of technologies



Specific emerging technologies for energy



'Technology push' and 'Customer pull'

Technology Dimensions

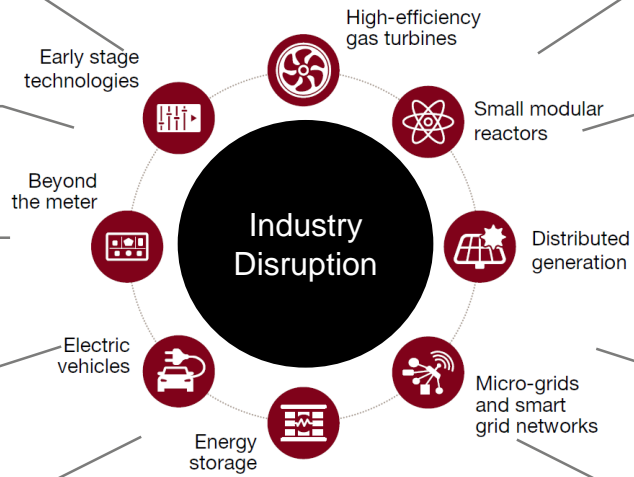
New Entrants

Improved Functionality

Increasing Parity

Expanding Production

Accelerating R&D



Customer Dimensions

Increasing Awareness

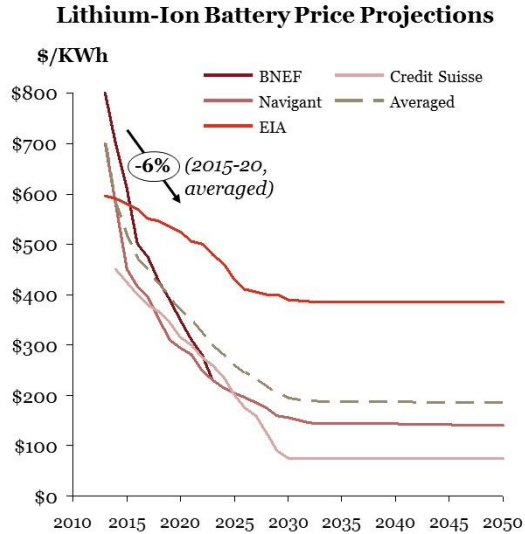
Emerging Choices

Changing Behaviors

Financing Availability

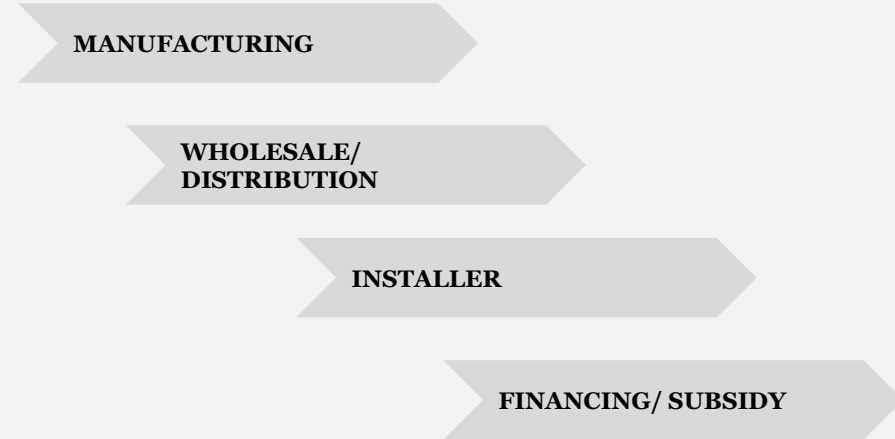
Broadening Offerings

Though technology is radical
reducing manufacturing costs....

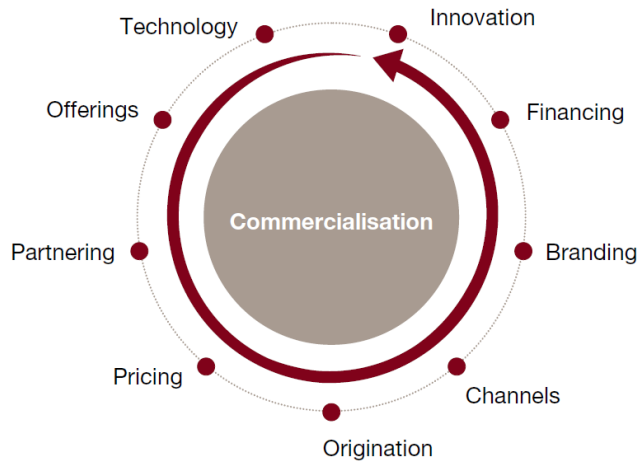


Source : Capturing value from disruption, PwC
PwC's Digital Services

...organisations must innovate
the end-to-end supply chain



New capabilities will be needed for utilities providers...

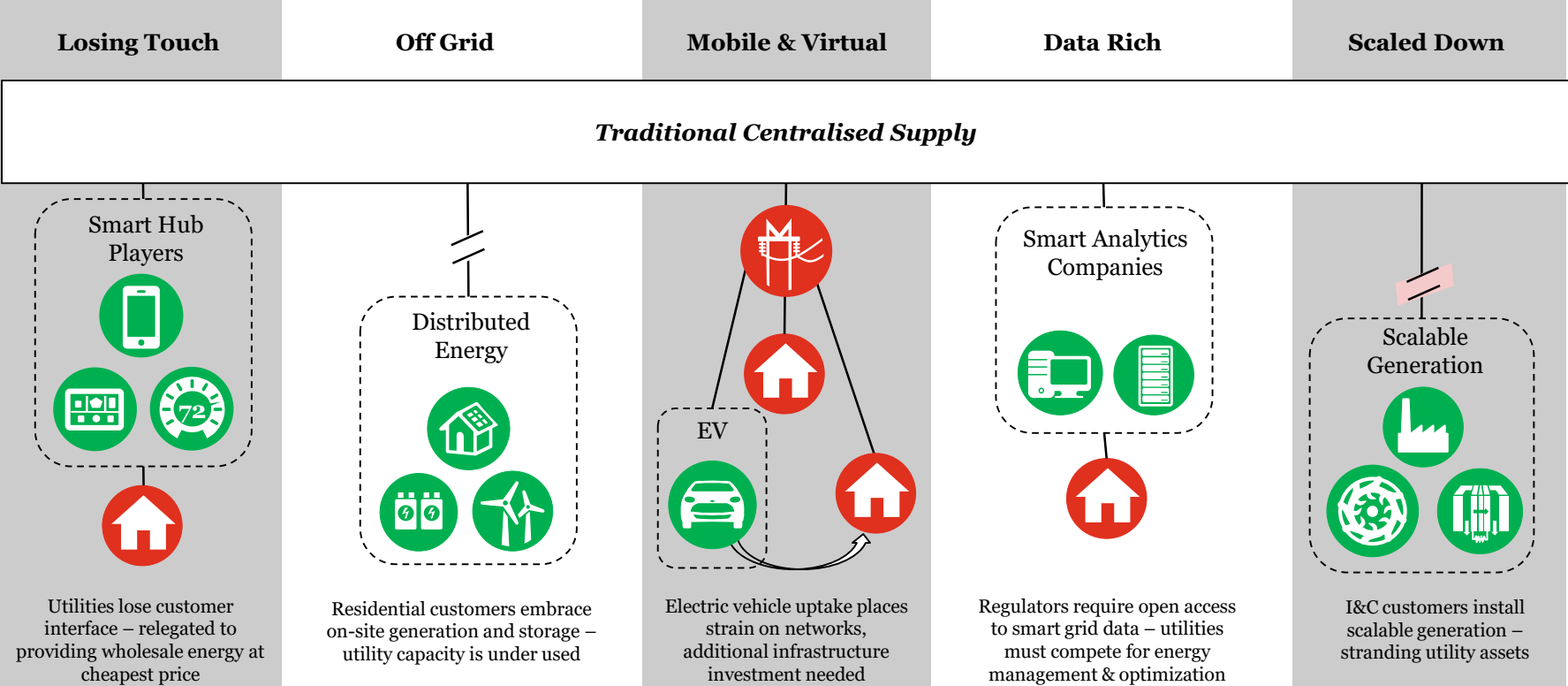


Source : Capturing value from disruption, PwC
PwC's Digital Services
Confidential information for the sole benefit and use of PwC's client.

...while regulators will also have to adapt

- Manage overlapping incentives to avoid unintended consequences
- Customer-centric, rather than asset-centric
- Clear focus on principles and outcomes
- Avoid regulating for yesterday's technology

Potential futures exist for the utilities industry



Source : Capturing value from disruption, PwC

Innovation Culture is critical

