Adapting the current to future needs

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SEQ–indicative future service demand

Digital
(x100 PB/month)

2015	2036
503.79	755.30

25 billion gigabytes

Water
(ML/day)

2015	2036
930.54	1395.10

2 large water treatment plants

Energy
(GW hours/week)

2015	2036
140.01	138.89

no additional commercial generation required

Public transport
(x10,000 trips/day)

2015	2036
50.3	111.56

1682 additional rail services or 14,247 additional bus services

Road transport
(x10,000 trips/day)

2015	2036
766.18	1098.67

an additional 15 lane motorway

Airports
(x100,000 trips/day)

2015	2036
169.78	254.54

an additional 35,000 flights

Hospitals
(x100,000 bed days/year)

2015	2036
20.7	43.2

718,316 additional hospital admissions

Schools
(x100 classrooms)

2015	2036
128.7	193.5

6480 additional classrooms

Emergency services
(x100 staff)

2015	2036
114.7	171.9

5720 additional staff

Corrections
(x100 prisoners)

2015	2036
48.0	72.0

an additional 2400 cells

Note: These figures are illustrative only and do not consider existing or planned capacity or changes in government policy, behavioural change or efficiencies brought about by new technology. Demand in different communities may also vary significantly with infrastructure planning based on more detailed modelling. Based on indicative demand projections commissioned by the Queensland Government (2015).

Figure 4: SEQ–indicative future service demand

What is the problem?

Queensland Government

Reframing the problem

Increasing preference

1: Reform
Improving service performance through an amendment of existing institutions and laws.

- Changes to governance arrangements, organisational structure and culture, service delivery models and cross-agency planning.
- Regulatory change, safety and environmental standards, land-use planning controls, access regimes and licensing.

2: Better use
Improving service performance by influencing demand (i.e. not building new capacity).

- Demand management, pricing, influencing user behaviour and expectations.
- Digital technology e.g. smartcards, intelligent transport systems and smart metering.
- Smart infrastructure with embedded sensors to optimise maintenance and replacement.
- Rail signal improvements and bus priority.

3: Improve existing
Improving service performance through relatively (compared to new) low cost capital works that augments existing infrastructure.

- Road widening, such as to accommodate vehicle lanes, bus lanes and cycle lanes and rail line duplication.
- Intersection upgrade, focusing on pinch points.
- Semi-permanent accommodation to extend capacity.
- Brownfield extension of an existing facility.

4: New
Construction of new infrastructure.

- Construction of new asset following the elimination of less capital intensive options.

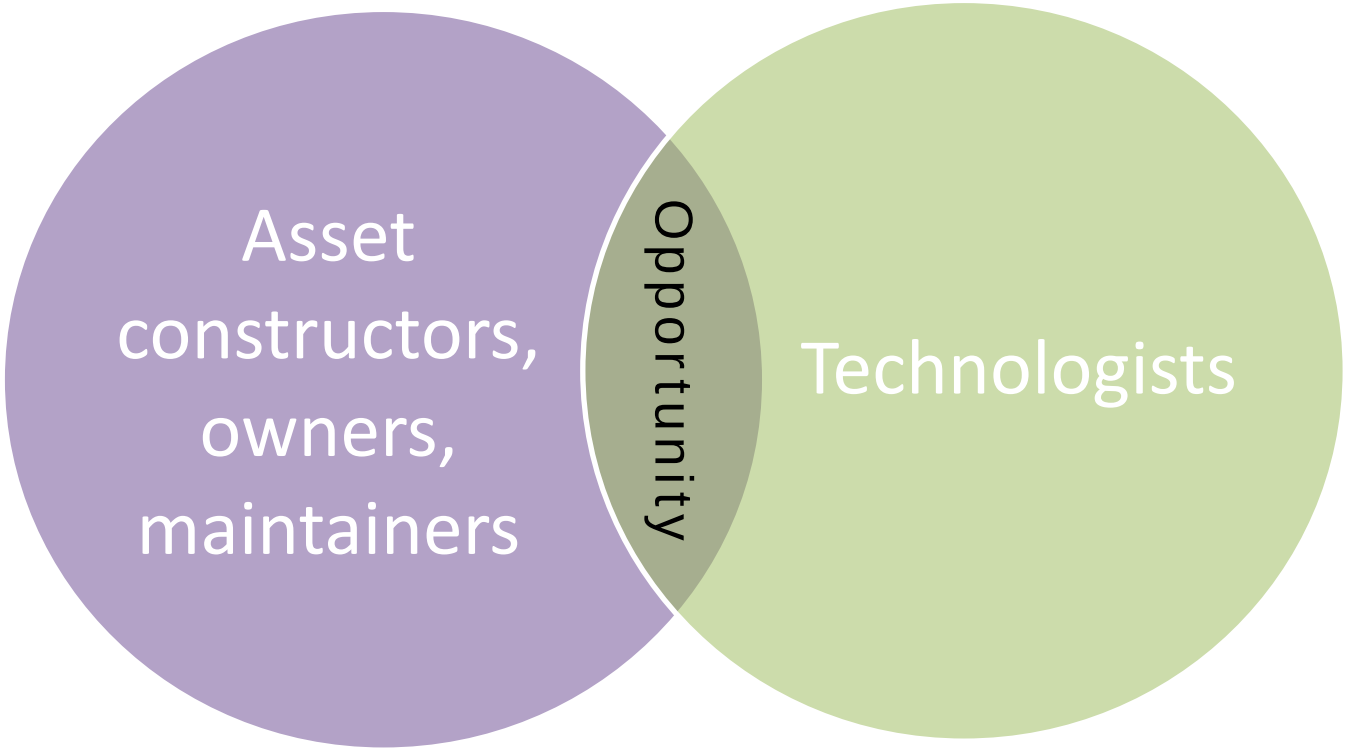
Business as usual approach

Asset constructors, owners, maintainers

Technologists

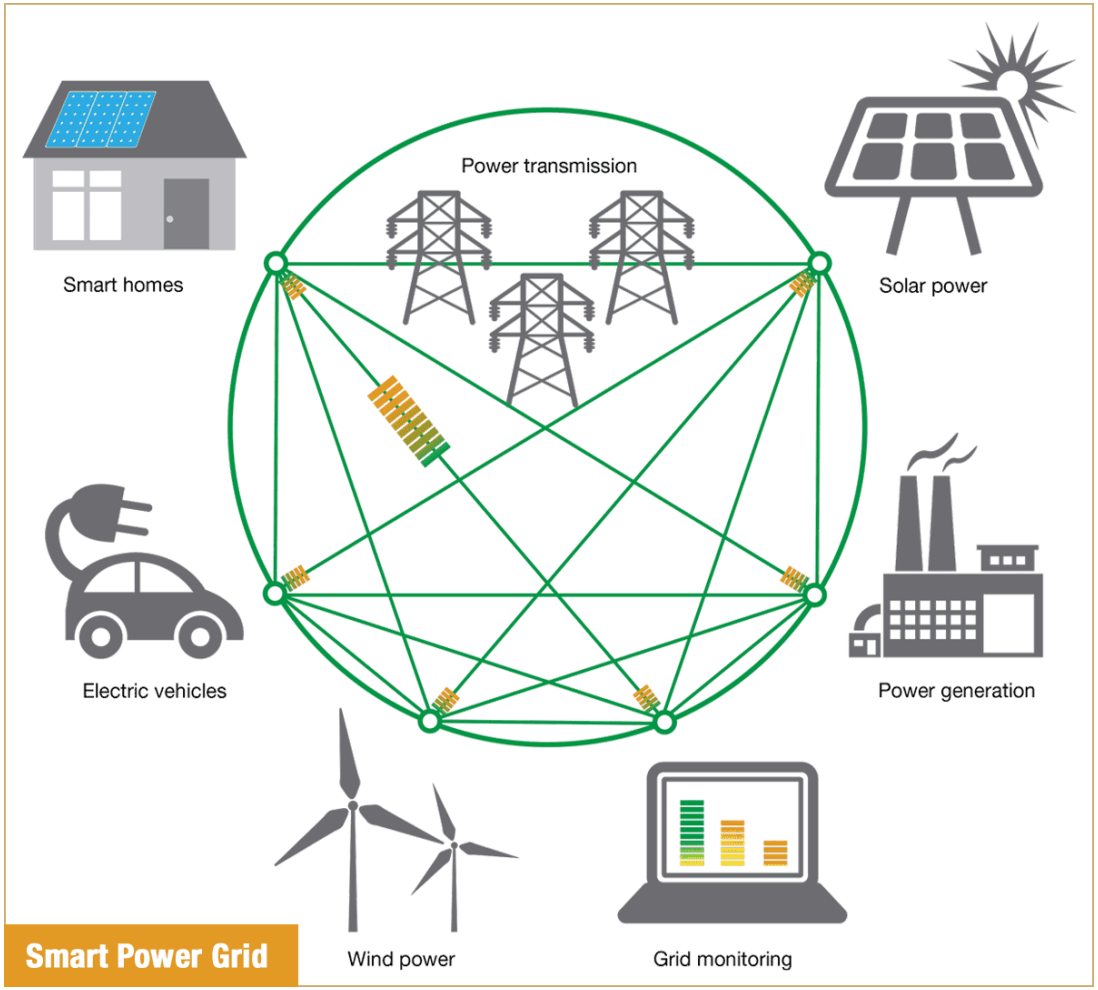
= Standard outcomes

Future approach



= Better outcomes

Digitally transformed infrastructure



Augmented reality with BIM

Infrastructure in a hyper–connected city 2040

- Digitally transformed infrastructure:
  - greater use of current assets
  - real-time, mobile and customised service delivery
  - major levels of controllable demand
  - greater resilience to weather and security threats
  - new business opportunities
  - more interconnectivity between asset classes

- A regulatory environment more attune to rapid technology development.