As many infrastructure owners face uncertainty about what the Totex challenge means for them, we explore what can be done to successfully implement Totex.

**SHIFTING TO A TOTEX MINDSET**

Totex, or Total Expenditure, is a concept adopted fairly recently within regulated industries which are heavily dependent on infrastructure assets. The move to Totex-based regulation was motivated by a desire to regulate based on the full economic consequences of decision making without differentiating whether expenditure was classified as operational or capital. Regulators are trying to implement a Totex-centric approach on the basis that successfully reducing infrastructure Totex will ultimately deliver better value and lower bills for customers.

**NAVIGATING THE TOTEX CHALLENGES**

Many infrastructure owners are facing uncertainty about what the challenges mean for them and how they can be addressed.

There is no standard definition of Totex, so what is it? And what isn’t it? It is widely recognised to include the sum of Capex and Opex but to what extent?

- Should Totex cover the whole asset life cycle?
- Should it be considered over only a five or eight year regulatory period?
- Should it be asset or business centric? Should Totex be measured at individual asset level, at network level, at company level or at sector level?

Even if such definitions were published and agreed, there are still significant challenges when designing and implementing Totex-based asset management. Lack of asset condition information and data for cost models constrain decision making. Alignment is also required from asset management, operations, work delivery and supply chain partners to operate Totex within end-to-end processes.

“Totex is a cross-industry approach which is gathering pace, particularly in utilities.”
WHAT SHOULD REGULATED INFRASTRUCTURE OWNERS DO TO IMPLEMENT TOTEX-BASED ASSET MANAGEMENT?

1 **Adopt both an asset and business centric approach**
   Many organisations are currently only focusing on asset centric approaches. However, there is a strong argument that Totex should be considered at business level to fully understand the impact of decisions on business performance and customer bills. Asset and business centric approaches also need to be considered together to ensure that the investment and delivery plans are aligned.

2 **Create a robust data and cost model**
   Standard cost breakdown structures and cost capture tools are at the heart of Totex-based decision making. We have found that availability of accurate data in a consistent and aligned asset hierarchy, supported by effective processes, is the key enabler for Totex solutions. Leading infrastructure owners are approaching this by aligning their cost and commercial functions more closely with IT systems providers, with a focus on enabling the front and back office to support Totex decision making.

3 **Define end-to-end Opex model, roles and responsibilities**
   Control and understanding of operational and non-operational Opex costs is improving in utilities, but further work is needed. The consequence of new asset standards or value engineering for capital works needs to be more thoroughly evaluated at a business-centric level for operational staff. Similarly the increasing focus on customer service and rise of smart technology also offers greater visibility of operational performance at an asset level. With this landscape set to continue to change and evolve, future-proof operating models are required to enable the Opex components of Totex to be leveraged.

4 **Pilot the solution for different asset and work types**
   With such a broad and complex topic, we recommend adopting pilot approaches for sample geographies or asset families. This enables rapid identification of potential solutions for all of the items described above and the insights and lessons learned can be applied to a broader approach. We have recently supported pilots for waste water treatment catchment areas, and found this to be an effective technique to get to the right answers quickly, and secure the engagement of key stakeholders.

5 **Ensure the financeability of the plan**
   From a business centric perspective, Totex optimisation also required external factors and financing costs to be considered within the overall plan, as they may constrain the ability to fully optimise the plan. For example, resolution on the allowable WACC is key for investors, as is confidence in the solution for long term pension liabilities.

**MISSION POSSIBLE?**

Totex is a cross industry approach which is gathering pace, particularly in utilities. We recently published research into how ready energy networks feel they are able to respond to RIIO, the new price control regime introduced by Ofgem. The findings, (figure 1) showed some concern that the industry is not fully ready for Totex and more work is required.

In our experience successfully implementing Totex is a ‘mission possible’. Our recent Totex advisory work in other sectors, most notably water, rail, highways, aviation and oil and gas, confirms there are good practices which can be learned from, and the five critical components outlined above will provide the building blocks for successful Totex optimisation.

<table>
<thead>
<tr>
<th>Asset-centric approach</th>
<th>Whole life costs for all assets, calculated from an asset level ‘bottom up’</th>
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<tbody>
<tr>
<td>Business-centric approach</td>
<td>Direct and indirect costs for all activities within the asset business ‘top down’</td>
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Findings from Arcadis Research: My company is fully prepared to operate under the Totex Evaluation in RIIO

![Figure 1](image-url)

Source: RIIO: Game Changer or Business as usual? Research by Arcadis and Utility Week, 2013
CLIENTS BENEFIT FROM OUR CROSS-SECTOR KNOWLEDGE AND EXPERIENCE:

Water: Price Review 2014 submission

Airport: Q6 Business Planning

RIIO: GD1 and ED1 submissions

Rail: CP5 Asset Management

CONTACT

Greg Bradley
Head of Business Advisory, Arcadis
T +44(0)207 812 2115
E greg.bradley@arcadis.com

Simon Bimpson
Managing Director, Water and Utilities, Arcadis
T +44(0) 788 473 5082
E simon.bimpson@arcadis.com