GILBERT + TOBIN

# IMPLEMENTING NEW TECHNOLOGIES IN AN INFRASTRUCTURE ENVIRONMENT

GTLAW.COM.AU

# BAND #1

## CHAMBERS AND PARTNERS AND LEGAL 500

IT and Telecoms, Competition/Antitrust, Banking & Finance: Acquisition Finance, Capital Markets: Equity, Corporate/M&A, Private Equity





From the invention of the wheel to the steam engine, the telegram to the wireless radio transmitter, technology has long been a feature of infrastructure projects. However, the exponential growth and adoption of new technologies, combined with a significant uplift in infrastructure investment in recent times, means that today it is rare to see an infrastructure project without a technology element.

This intersection of technology and infrastructure, or "infratech" as it is known, is driving change in the way both infrastructure and technology providers approach the market. New commercial and project models are emerging, changing the way assets are paid for, deployed and operated and forcing both suppliers and customers to think differently.

One of the challenges the implementation of infratech leads to is the need to merge two previously discrete ways of thinking – the traditional infrastructure approach to the delivery of bricks and mortar (largely driven by a construction mindset) is being disrupted by the more recent approaches to implementation of systems and digital assets. Taking advantage of this trend will require project teams to be fluent in both disciplines, and willing to adapt and update their known ways of working.

Given the relative novelty of truly technology-driven infrastructure projects, it is no surprise that customers and suppliers alike sometimes struggle to combine the two ways of thinking. The technology and infrastructure sectors have to this point operated as separate silos, with different skill bases and approaches to project delivery and contracting.

In this paper, we unpack some of the key issues from a legal and commercial perspective that arise when implementing new technologies in an infrastructure environment. We look at how those issues might be addressed depending on whether you take an infrastructure or technology mindset, and we propose ways to meet the novel demands of "infratech" projects.

# "WHAT IS INFRATECH?

# IT IS THE DEPLOYMENT OF NEW TECHNOLOGIES IN AN INFRASTRUCTURE ENVIRONMENT, DRIVING EFFICIENCY, SUSTAINABILITY AND VALUE."





## WHY IS THIS PARTICULARLY RELEVANT NOW?

Although technology has been a feature of infrastructure projects for some time, the relationship between the two has not always been as intractable – and mutual - as it is today. Historically, technology played a support-role in the deployment of infrastructure. It was by and large a tool for creating efficiencies within mechanical systems, and always required human operation on the ground. Today, technology is no longer just an add-on to an infrastructure project. It is often an integral part of what is being delivered and, in some cases, is the primary driver for an infrastructure project.

In this new environment, advancements in technology are no longer treated as mere efficiency enablers. Instead, they are held up as the only means to keep infrastructure projects on track to meet expanding objectives. The effect is that the implementation of technology needs to be considered at the outset of the project, and monitored at every stage of the project's lifecycle.

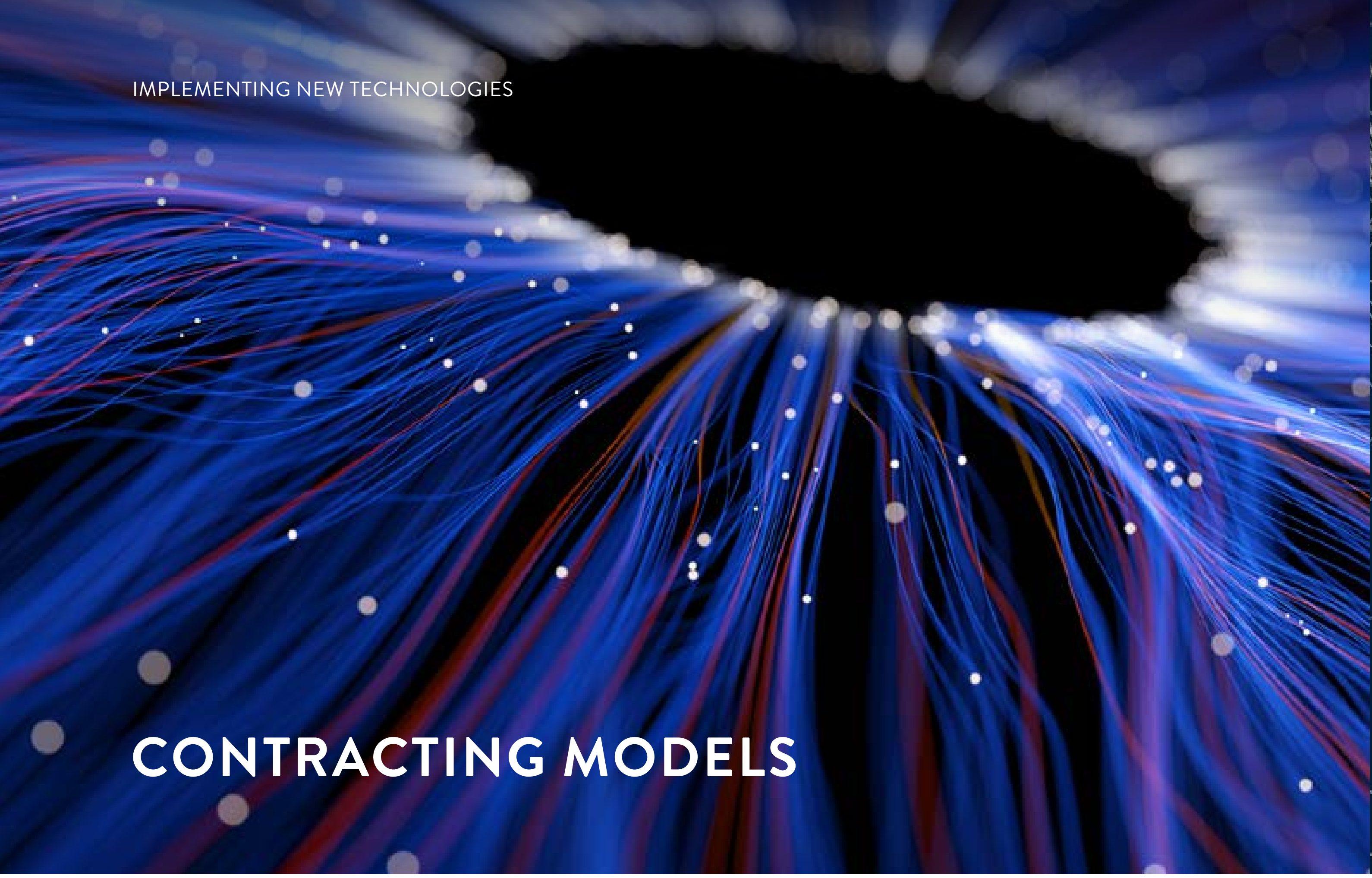
Several paradigm shifts that have led to this dynamic:

Technological capability has increased vastly, and the rate of this change is set only to accelerate. New innovations are creating massive opportunities to optimise and change the way users engage with infrastructure. The growing use of artificial intelligence, for example, enables infrastructure to be deployed, operated and maintained more efficiently.

The value of data, particularly as a means to better use infrastructure, is only now becoming better understood and utilised. Data analytics and artificial intelligence are transforming how we infrastructure. Data will increasingly be part of the value proposition for infrastructure programs.

Government priorities have evolved to encourage innovation, productivity and connectivity in cities – e.g. through the Smart Cities Plan Governments are looking to the fourth industrial revolution to deliver savings, more capacity and better value.

There is an increased emphasis on the sustainability of projects and their impact upon the environment. Technology can aid in achieving these priorities.



# CONTRACTING MODELS

### TRADITIONAL INFRASTRUCTURE

Broad range of established contracting models, each with a different risk allocation frame-work and reflecting different delivery models, including:

+ Design and Construct Agreement
+ Construct only Agreement
+ Managing Contractor Agreement
+ Public Private Partnership
+ Alliance Agreements

Maintenance may be part of D&C or separately contracted for.

Typically focused on delivery of outputs.

+

### TRADITIONAL TECHNOLOGY

Technology typically delivered using either:

+ Systems Development / System Implementation Agreement
+ System Integration Agreement
+ Professional Services Agreement

More recently, agile contracts have been used more frequently.

ECI arrangements unusual, although proof of concept agreements or trial agreements are used.

Public Private Partnerships and Alliance Agreements rarely, if ever, used.

More likely to be focused on delivery of outcomes than outputs.

Maintenance nearly always tied to the supplier, at least to some extent.

=

### INFRATECH (TECHNOLOGY DRIVEN INFRASTRUCTURE)

A contract will need to be adopted which accommodates the delivery of both the infrastructure and technology components of the project.

It may be that a traditional contract from either genre will not be sufficient to accommodate everything, and that elements will need to be taken from both genres.

Choice of infrastructure provider v technology provider as the "prime" or "lead" contractor may influence thinking.





# COMMERCIAL MODELS

### TRADITIONAL INFRASTRUCTURE

Capital investment (capex) focus.

Project finance is usually involved.

Margins static or fixed, with limited new sources of revenue.

+

### TRADITIONAL TECHNOLOGY

More opex focused, with revenue derived from service delivery rather than delivery of assets. Focus on whole of life cost.

Project finance is rarely involved.

Better margins, with more scope for greater sources of revenue.

=

### INFRATECH (TECHNOLOGY DRIVEN INFRASTRUCTURE)

The combination of the two genres provides scope for higher commercial returns on infrastructure-based projects.

The needs of financiers will need to be considered across both the infrastructure and technology components of the project.

Adds new potential sources of value for both technology and infrastructure suppliers.

> **"GILBERT + TOBIN HAS 'DEEP EXPERTISE IN TECHNOLOGY' AND CLIENTS 'ALWAYS FEEL LIKE THEY ARE THE TEAM'S NUMBER-ONE PRIORITY'."**
> Legal 500

# FEATURES OF IMPLEMENTATION

### TRADITIONAL INFRASTRUCTURE

Typically require significant physical works that are costly, time-consuming and often require a level of business interruption.

Work usually delivered sequentially.

Site conditions, access and planning and physical works provisions are key to delivery and will be addressed in detail in contractual frameworks.

Although the processes are typically standardised, infrastructure projects generally do not lend themselves to an "off the shelf" approach.

+

### TRADITIONAL TECHNOLOGY

Any build or implementation work will typically be performed "virtually" (or with a minimal physical footprint). This often translates into less business interruption and site, access and planning issues are not as important / less likely to be key to contract terms.

Although bespoke projects are novel for the specific client, as the market has matured technology delivery is tending towards (or at least aspiring to) "off the shelf" solutions in order to minimise costs and delay (including costs of contracting).

Project may be delivered through a structured, sequential process (waterfall delivery) or through agile methodology.

Increasing use of "as a service" components (including infrastructure as a service) will decrease even further the need for significant physical presence or physical works.

=

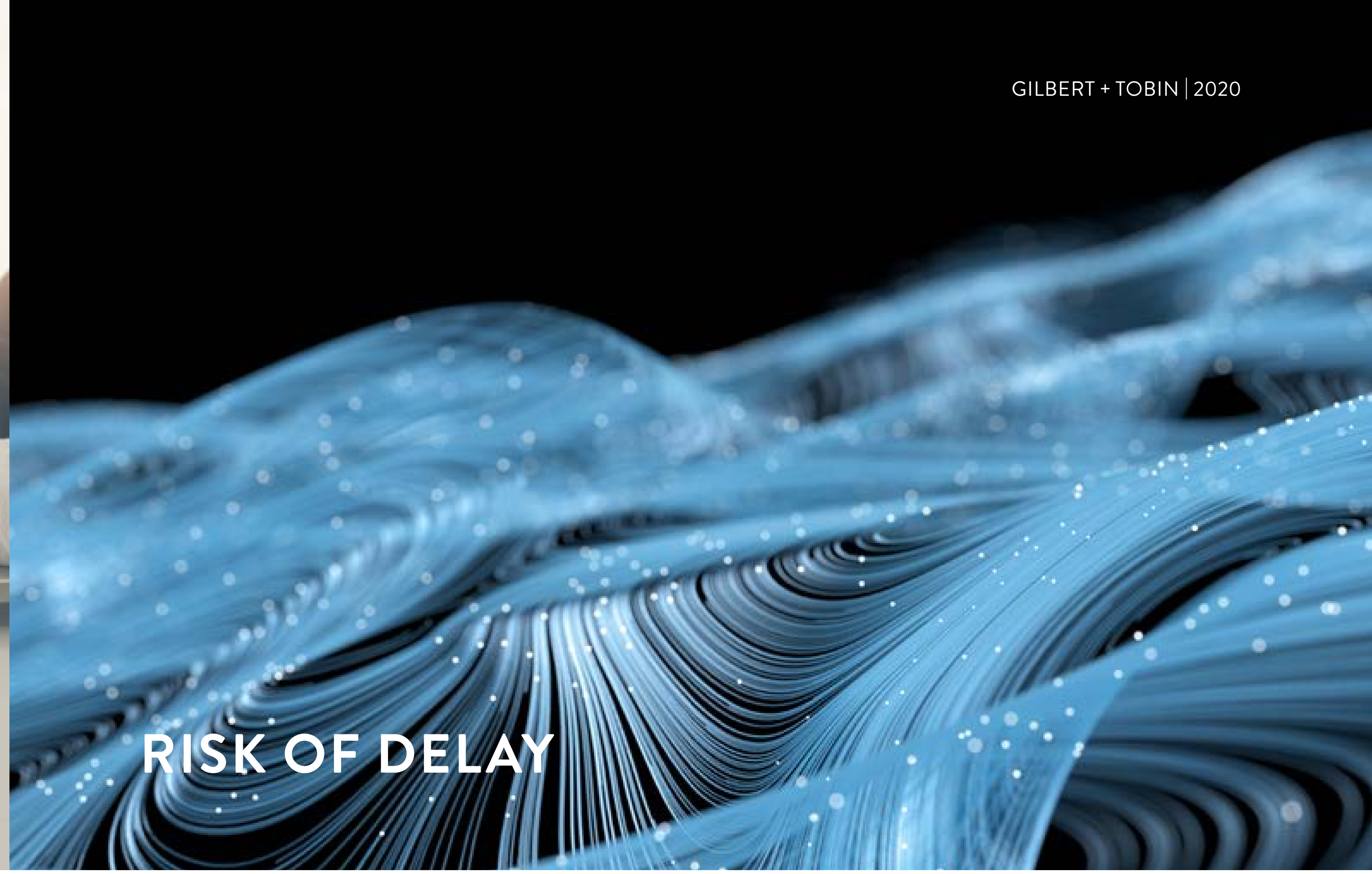
### INFRATECH (TECHNOLOGY DRIVEN INFRASTRUCTURE)

Currently still require significant "on the ground" presence, so traditional construction concepts of site access and physical works remain relevant for now.

In some cases, and perhaps increasingly in the future, infratech may be implemented by adapting existing infrastructure to accommodate new technology, with only minimal physical works (e.g. to replace obsolete assets). This will result in less need for detailed contractual provisions addressing these issues and greater flexibility in delivery models.







# RISK OF DELAY

### TRADITIONAL INFRASTRUCTURE

Notoriously at risk of being delayed and over-budget.

Delays often driven by access issues and environmental factors that impact or become apparent during installation and construction works, rather than during the design phase.

Delay risk commonly addressed through LDs and detailed extension of time/ compensation mechanisms that are well understood and have fairly standard positions in the market.

+

### TRADITIONAL TECHNOLOGY

Also notoriously at risk of being delayed and over-budget.

Delays may materialise earlier in the project, potentially in the scoping, requirements and design phases, before any build begins. Actual installation work is lower risk.

Whilst LDs are used in technology projects, these are not as universal and more open to negotiation both as to quantum, timing and whether they should apply at all. Extension of time/ compensation mechanisms are less standardised in the market.

=

### INFRATECH (TECHNOLOGY DRIVEN INFRASTRUCTURE)

Should also be expected to be at risk of delay and budget overruns.

Potentially the worst of both worlds, as risk of delay will be present both in the scoping, requirements and design phase for the technology elements of the project and during implementation and installation for the physical works.

If any LD regime adopts the traditional infrastructure approach of applying LDs focused on installation and acceptance, the risk is that any delay occurs much earlier (in the design and build phase) and that the project never reaches the point at which LDs apply.

Extension of time/compensation events need to address dependencies or potential external impacts both in an infrastructure and technology sense.

> **"THEY ARE VERY COMMERCIAL AND GOOD AT FINDING WAYS TO MAKE THINGS HAPPEN."**
> Chambers and Partners

# RISK OF FAILURE

### TRADITIONAL INFRASTRUCTURE

Risk of total project failure (rather than delay) is lower. Projects will generally ultimately be delivered, even if delivered late.

Once a project has been delivered, the operational risk that the infrastructure will fail may be lower or less frequent.

Risk allocation mechanisms typically include:

+ comprehensive insurance coverage for a wide range of risks with an emphasis on public liability and property damage
+ indemnities covering a number of key (project specific) risk areas
+ a liability cap that is usually tied to total contract value
+ security bonds are common.

+

### TRADITIONAL TECHNOLOGY

Technology projects bring risk of project failure leading to non-delivery of the project.

Significant risk of integration / interoperability issues that are costly to rectify.

Ongoing risk of technology failure or service interruptions after project is delivered is to be expected.

Risk during both the delivery and run phases may be reduced as the market moves more to standardised or off the shelf products

Risk allocation mechanisms include:

+ insurance (although the mix of insurances would traditionally be slanted more to PI than public liability / property damage)
+ indemnities focused on technology project risks
+ typically, liability caps reference a multiple of contract value (rather than just one times contract value)
+ security bonds not as prevalent, although they are used.

=

### INFRATECH (TECHNOLOGY DRIVEN INFRASTRUCTURE)

Use of technology in an infrastructure environment increases the risk of project failure beyond what is typical in a pure infrastructure environment and increases the risk of failures occurring after delivery

Adopting just an infrastructure or just a technology approach will not be sufficient - risk allocation mechanisms will need to address both the physical and technological risks.

Sound understanding of the risks on both sides is required, in order to achieve satisfactory risk allocation and satisfy financiers.





# PROJECT ACCEPTANCE

### TRADITIONAL INFRASTRUCTURE

System engineering components often accepted via layers of supplier self-assurance.

+

### TRADITIONAL TECHNOLOGY

Traditional waterfall acceptance processes have involved a high level of customer visibility of and engagement in the process. Less self-assurance.

=

### INFRATECH (TECHNOLOGY DRIVEN INFRASTRUCTURE)

Delivery methodologies will need to be clear about which form of acceptance is appropriate for both the infrastructure and technology elements of the project.

**CLIENTS DESCRIBE G+T AS HAVING A "VERY STRONG REGULATORY PRACTICE THAT IS EXCELLENT IN IT CONTRACT NEGOTIATIONS."**
Chambers and Partners

## DIGITAL RADAR

Subscribe to Digital Radar for monthly alerts on the latest insights from our Digital specialists on all things in the technology, digital, data and privacy space.

To subscribe go to http://bit.ly/38eWyt9 and select your relevant Areas of Interest.

# APPROACH TO CHANGE MANAGEMENT

### TRADITIONAL INFRASTRUCTURE

Typically managed through routine and standardised variation processes.

Variations may be mandated by the customer, sometimes subject to a direction to procced mechanism.

Projects often involve and anticipate regular and numerous variations.

+

### TRADITIONAL TECHNOLOGY

Historically managed through an agreed change management process (rather than variations).

Change always subject to agreement. Direction to proceed mechanisms occasionally used, but not often.

More recently, "agile" project methodologies have resulted in new approach to change management.

=

### INFRATECH (TECHNOLOGY DRIVEN INFRASTRUCTURE)

Project managers will need to adopt either an infrastructure or technology approach to change. Any approach will need to be flexible enough to accommodate changes in both scope over time.

Differences between the two approaches may be more in the terminology rather than any substantive difference.

> **"THE G+T TEAM IS VERY ACCESSIBLE, PRAGMATIC, HIGHLY RESPONSIVE AND PROFESSIONAL. THIS SETS THEM ABOVE A NUMBER OF OTHER FIRMS. THE TEAM IS ALSO A PLEASURE TO DEAL WITH AT THE PERSONAL LEVEL AND WE VERY MUCH ENJOY WORKING WITH THEM."**
> Legal 500 2020





# OWNERSHIP

### TRADITIONAL INFRASTRUCTURE

Ownership of physical assets will almost invariably pass to the customer (potentially subject to financing arrangements).

Issues around risk / title transfer are managed via "traditional" delivery / payment mechanisms and the time for title transfer is typically clear.

Title not at risk due to post-delivery solvency issues of supplier.

+

### TRADITIONAL TECHNOLOGY

Bespoke (newly created, project / jurisdiction specific) technology may be owned by the customer.

However, suppliers will otherwise seek to retain ownership of their core software with the customer only receiving licence rights.

Escrow needs to be considered to protect licensing rights in the event of insolvency of licensor.

Challenges arise when considering third party software components (who owns these, on what basis are they licensed?) and integrations / interfaces with existing and third-party systems.

=

### INFRATECH (TECHNOLOGY DRIVEN INFRASTRUCTURE)

Separate ownership terms will need to apply to the physical components versus the intangible (software) components of the project.

Important to understand the scope of any licence rights, and how they constrain customer's use of infratech.

Escrow remains important for any licensed technology.

Third party technology components will need to be considered.

> **"BEST FIRM I HAVE EVER WORKED WITH – PRACTICAL, COMMERCIAL, INNOVATIVE AND COST CONSCIOUS."**
> IFLR

# OBSOLESCENCE

### TRADITIONAL INFRASTRUCTURE

Infrastructure investment generally made with the expectation that infrastructure will remain operational for decades, if not longer.

Infrastructure may be delivered and maintained in a fixed state for its useful life.

Obsolescence is a customer risk at end of useful life.

Supplier will typically not have any ongoing obligation to refresh or upgrade asset.

Little focus on innovation.

+

### TRADITIONAL TECHNOLOGY

With a high rate of change, technology is typically expected to become obsolete much earlier. Contracts are typically correspondingly short.

Allocation of responsibility (between customer and supplier) for support of obsolete components and/or technology refresh needs to be considered.

Technology is not static, and will be expected to be upgraded regularly, potentially leading to the need for ongoing capital investments.

Need to consider obsolescence issues for third party components of technology.

High focus on continuous improvement and innovation.

=

### INFRATECH (TECHNOLOGY DRIVEN INFRASTRUCTURE)

The assumption that the infrastructure will remain static for a long period will be challenged.

Different approaches to investment decisions, future capital investments and rates of return may be required. Infratech projects will seek to get more value out of every asset.

Technology providers will need to adapt to longer term delivery and run models.

The interplay between different components needs to be considered and obligations for any upgrading or replacement of obsolete technology to be agreed.

Clarity required re costs to replace or upgrade obsolete third party technology.

Focus on innovation.



GILBERT + TOBIN



# ROLE OF DATA

### TRADITIONAL INFRASTRUCTURE

Not historically a key feature of the transaction.

Ownership of any data likely to remain with the supplier.

+

### TRADITIONAL TECHNOLOGY

Data has always been a core component of the transaction.

Data ownership typically sits with the customer.

Compliance with legislative and regulatory frameworks will be sharply in focus.

=

### INFRATECH (TECHNOLOGY DRIVEN INFRASTRUCTURE)

Data will be key going forward.

Data in infratech, particularly when combined with artificial intelligence, provides the ability to optimise the asset and drive value.

Data will potentially have value beyond the infrastructure, even potentially providing a commercial return in its own right.

> **"THEY ARE KNOWN TO BE – AND ARE – VERY INNOVATIVE, UTILISING NEW TECHNOLOGIES, BETTER WAYS OF WORKING AND THINKING OUTSIDE THE BOX. YOU ALWAYS GET A HOLISTIC RESPONSE AND AN ALL-ROUND SOLUTION, AND THAT'S WHERE GILBERT + TOBIN STAND OUT."**
> Chambers and Partners

GILBERT + TOBIN


# SECURITY

**TRADITIONAL INFRASTRUCTURE**

Viewed in traditional terms relating to physical security of critical infrastructure.

+

**TRADITIONAL TECHNOLOGY**

Brings risk of cybersecurity / hacking breaches.

High reputational impact.

=

**INFRATECH (TECHNOLOGY DRIVEN INFRASTRUCTURE)**

The introduction of cybersecurity risks in the context of critical infrastructure is daunting and significantly increases the risk profile.

**CLIENTS DESCRIBE G+T AS HAVING A "VERY STRONG REGULATORY PRACTICE THAT IS EXCELLENT IN IT CONTRACT NEGOTIATIONS."**
Chambers and Partners

## DIGITAL ECONOMY: IF YOU ONLY READ ONE THING THIS WEEK...

Each week we sort through the avalanche of articles, reports, podcasts, blogs, industry 'think pieces' and Government papers on all things digital, and direct you to the content we think you might be interested in.

To subscribe go to http://bit.ly/38eWyt9







**"INFRATECH REQUIRES NEW WAYS OF APPROACHING PROJECTS. BOTH RISK AND VALUE NEED TO BE RE-ASSESSED AND COMMERCIAL AND CONTRACTING MODELS NEED TO CHANGE."**

# DEAL HIGHLIGHTS

At G+T, we have worked on some of Australia's largest Infratech projects. A sample of our Infratech experience includes:

## TRANSPORT FOR NSW

Advising on its Digital Systems Program, a once in a generation transformation of the Sydney Trains rail network as part of the Government's $880 million investment in technology as part of "More Trains, More Services". It has been described as a "rail tech revolution".

## NSW TELCO AUTHORITY

Advising on the consolidation of its radiocommunications infrastructure across the whole of NSW. This radiocommunications system supports emergency services throughout the State.

## TRANSPORT FOR NSW

Advising on the acquisition of a transport management system as part of the Government's Intelligent Congestion Management Program (ICMP).

## DEPARTMENT OF PREMIER AND CABINET (VIC)

Advising on issues arising from the East West Link – a matter with a value of $6.8 billion.

## NSW TREASURY

Advising on the $2.6 billion concession of Land and Property Information NSW. This was the first transaction of its kind undertaken in Australia and one of the first in the world. This was the first concession transaction that dealt primarily with 'infratech' as opposed to 'hard' assets (e.g. ports) and required a 'blank' sheet of paper approach to designing the transaction structure.

## TRANSPORT FOR NSW

Advising on the procurement and implementation of the Opal ticketing system since 2008 (on-going). In addition to the major project contract, we have advised on the Terms of Use, equip-ment supply arrangements with subcontractors, contractor agreements using Procure IT, app development contracts, and intra-Government agreements between transport operators and other agencies.

## TELSTRA

Advising on the nbn project. This involved the creation of an entirely new regulatory regime and bespoke commercial arrangements with the Australian Government and NBN.

## HEALTHSCOPE

Advising the Healthscope-led consortium on the Northern Beaches Hospital Project – a design, build, operate and maintenance contract for a 488-bed, collocated public and private hospital. The project represents the first of its kind in terms of delivery model and payment structure.

## AIRSERVICES

Advising on aspects of the OneSKY program, a program to implement the infrastructure, facilities and technology required to deliver, operate and support a joint Civil and Military Air Traffic Management System known as CMATS.





# KEY CONTACTS

**LESLEY SUTTON**
PARTNER
TECHNOLOGY + DIGITAL
T +61 2 9263 4296
M +61 414 265 169
E lesutton@gtlaw.com.au

**SIMON BURNS**
PARTNER
TECHNOLOGY + DIGITAL
T +61 2 9263 4776
M +61 448 100 727
E sburns@gtlaw.com.au

**TIM GOLE**
PARTNER
TECHNOLOGY + DIGITAL
T +61 2 9263 4077
M +61 410 540 745
E tgole@gtlaw.com.au

**SHEILA MCGREGOR**
PARTNER
TECHNOLOGY + DIGITAL
T +61 2 9263 4152
M +61 414 399 976
E smcgregor@gtlaw.com.au

**MICHAEL CAPLAN**
PARTNER
TECHNOLOGY + DIGITAL
T +61 3 8656 3333
M +61 413 605 274
E mcaplan@gtlaw.com.au

**ANDREW HII**
PARTNER
TECHNOLOGY + DIGITAL
T +61 2 9263 4046
M +61 457 808 018
E ahii@gtlaw.com.au

**MELISSA FAI**
PARTNER
TECHNOLOGY + DIGITAL
T +61 2 9263 4685
M +61 404 873 252
E mfai@gtlaw.com.au

**ALEX DANNE**
PARTNER
BANKING + INFRASTRUCTURE
T +61 3 8656 3373
M +61 420 939 390
E adanne@gtlaw.com.au

**PETER DOYLE**
PARTNER
BANKING + INFRASTRUCTURE
T +61 2 9263 4216
M +61 419 317 982
E pdoyle@gtlaw.com.au

**KON NAKOUSIS**
PARTNER
REAL ESTATE + PROJECTS
T +61 2 9263 4708
M +61 455 088 011
E knakousis@gtlaw.com.au

**PENNY SWAIN**
CONSULTANT
BANKING + INFRASTRUCTURE
T +61 3 8656 3311
M +61 409 554 559
E pswain@gtlaw.com.au

**NIKHIL SHAH**
CONSULTANT
TECHNOLOGY + DIGITAL
T +61 2 9263 4048
M +61 477 100 990
E nshah@gtlaw.com.au

**JEN BRADLEY**
LAWYER
TECHNOLOGY + DIGITAL
T +61 2 9263 4288
M +61 448 181 500
E jbradley@gtlaw.com.au

**KEVIN STEWART**
CONSULTANT
TECHNOLOGY + DIGITAL
T +61 2 9263 4453
M +61 499 701 310
E kstewart@gtlaw.com.au

**SAMANTHA KARPES**
LAWYER
TECHNOLOGY + DIGITAL
T +61 2 9263 4506
M +61 497 200 094
E skarpes@gtlaw.com.au

**TEODOR LOMACA**
LAWYER
REAL ESTATE + PROJECTS
T +61 2 9263 4740
M +61 433 581 219
E tlomaca@gtlaw.com.au

GILBERT
+TOBIN

WWW.GTLAW.COM.AU