



# One Solution, Countless Opportunities

## STL FTTx MANTRA

**Taking fibre to the eXponential**

FTTx  
**mantra**

# Enabling digital transformation through technology and innovation

STL started with being a leading global provider of optical fibre, the fastest known medium for high-speed data networks. Today, we design, build and manage smarter networks.

We have over 200 patents to our credit and are developing solutions for 5G, web-scale and software-defined networks, network function virtualisation, next-generation O/BSS and more. Our manufacturing facilities, software development centres and innovation labs are spread across India, China, Italy and Brazil.

Technology innovation is at the core of everything we do. We offer network solutions to telcos, data centres, tower companies, defence, OTTs and ISPs. We design and build intrusion-proof networks to the Indian Defence. We build citizen networks in cities and villages. In India, nearly 45% of all data travels on our solutions, while globally, we are present in over 100 countries.

We share lineage with the Vedanta Group and are listed on BSE and NSE. In the last three years, our market cap, order book and the new services business have grown 10X. We are growing exponentially.



The background is a complex, abstract composition of overlapping geometric shapes, primarily in shades of deep blue and purple. Interspersed among these shapes are various lines and strokes in vibrant orange, red, and yellow. The overall effect is one of dynamic movement and digital complexity, reminiscent of a stylized cityscape or a network diagram.

"The best way to  
predict the future is  
to create it"

- Abraham Lincoln

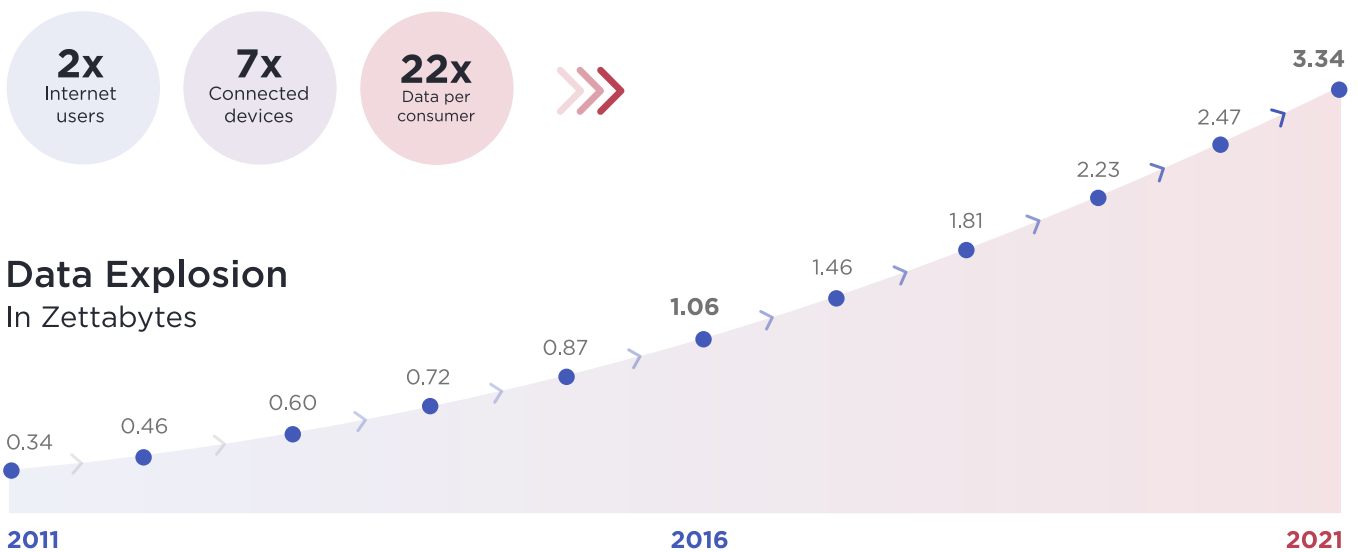
# Users want More, Better, Faster

Hyper connectivity is happening now!

People need ultra-high speeds in the Gbps range with ultra-low response times.

We want more data, more convergence and unprecedented agility. But how will this happen? Words like 'buffering' or 'loading' still find their way to our screens.

How will service providers out-innovate themselves to meet these demands, is a question that is waiting to be answered.



Source: Ericsson, BCG, Cisco reports

## Service providers need to deliver on Scale, Latency, Agility

End user needs demand new innovations

- Scale** >> To power more than 27 Billion\* end points by 2020
- Latency** >> Tending towards zero, for revolutionary technologies
- Agility** >> To cater to a myriad needs and use cases

Service providers need to do it all - reach the customers faster, deliver the best customer experience while optimising their capital and operational costs

\*Gartner research on IoT devices till 2020 & world population estimates



Networks need to become  
**smarter, more competent**

## • **Virtualised functions**

• Environment friendly

• Flat architecture

• Dense

• **Highly responsive**

## • **Software defined**

• Hardware agnostic

• Flexible

• **Programmable**

• Agile routing

**Open source**

• Ultra fast

• Point to multi-point

• **Future fit**

• Sophisticated design

• Scalable

• **Autonomous**

• Optimally deployed

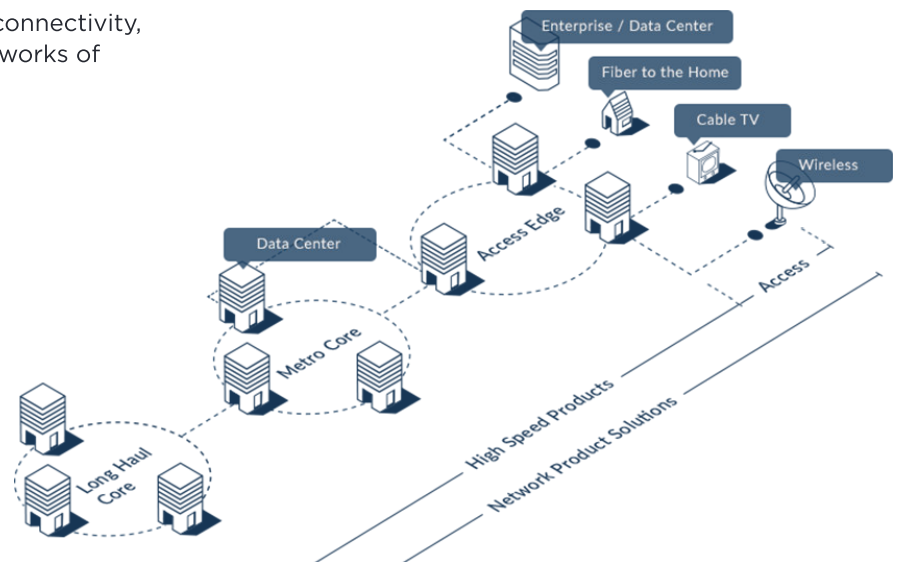


# Fibre will make next-gen network evolution possible

Optical fibre has come to be the “Elixir” of communications technology. This finer than human hair strand carries limitless data at the speed of light.

As world gravitates towards hyper connectivity, fibre will be a dominant force in networks of tomorrow.

Billions of homes, enterprises and devices need to be fibre connected to see the digital tomorrow that we read about



## STL - Vanguard for Networks of Tomorrow

### Pioneers in Innovative Cabling Solutions

British Telecom | Riyadh Metro

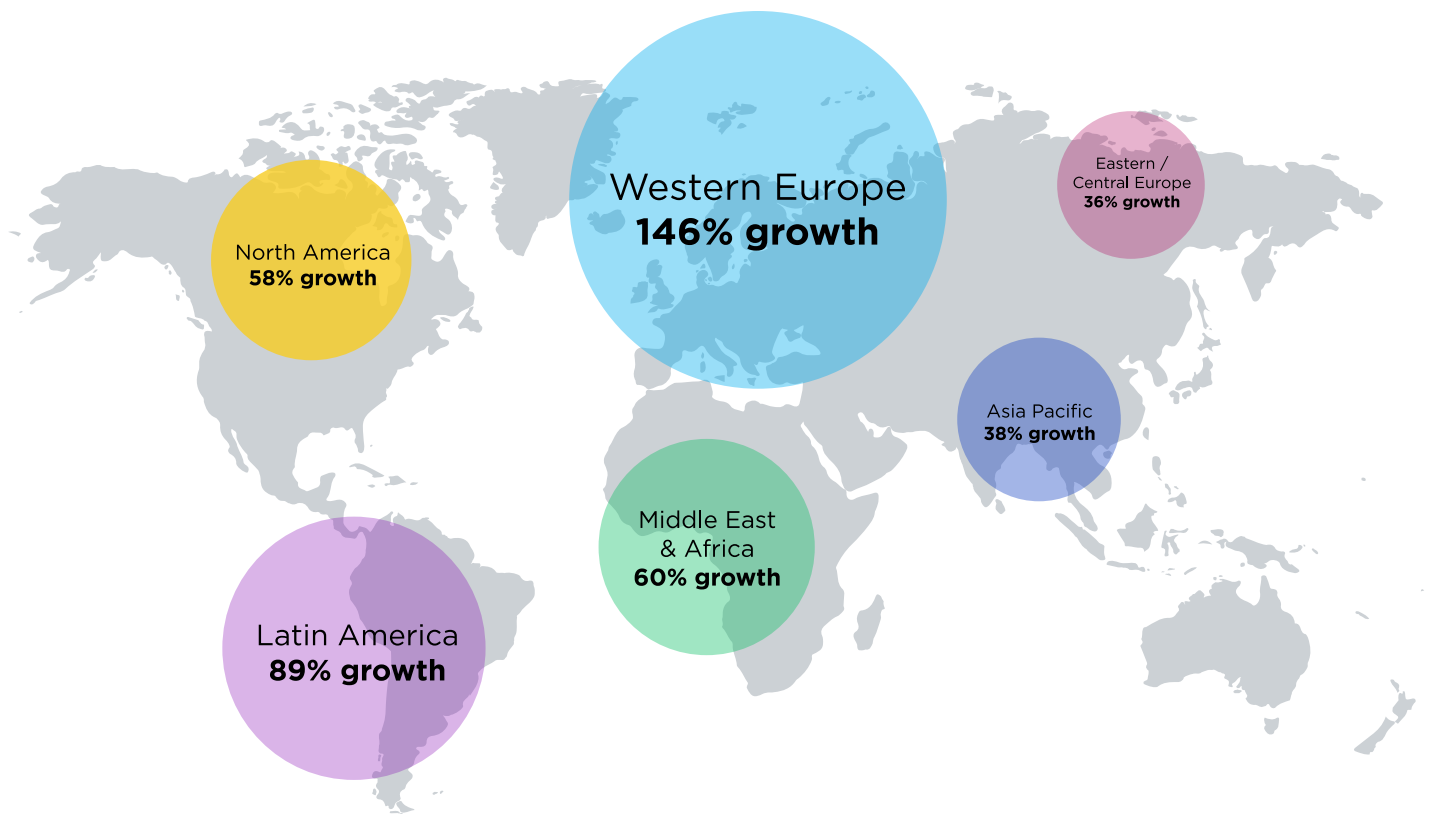
### Photonics and Glass Science Experts

### Masters of Hyperscale Service Engineering

Reliance Jio | NFS



## FTTx growth planned in next 3 years



Source: iDATE DigiWorld

### Making Cities Smart

Jaipur | Gandhinagar | Kakinada | Warrangal

### Connecting Homes at the Speed of Light

Sterlite Networks Limited

### Creating Next-Gen Networks

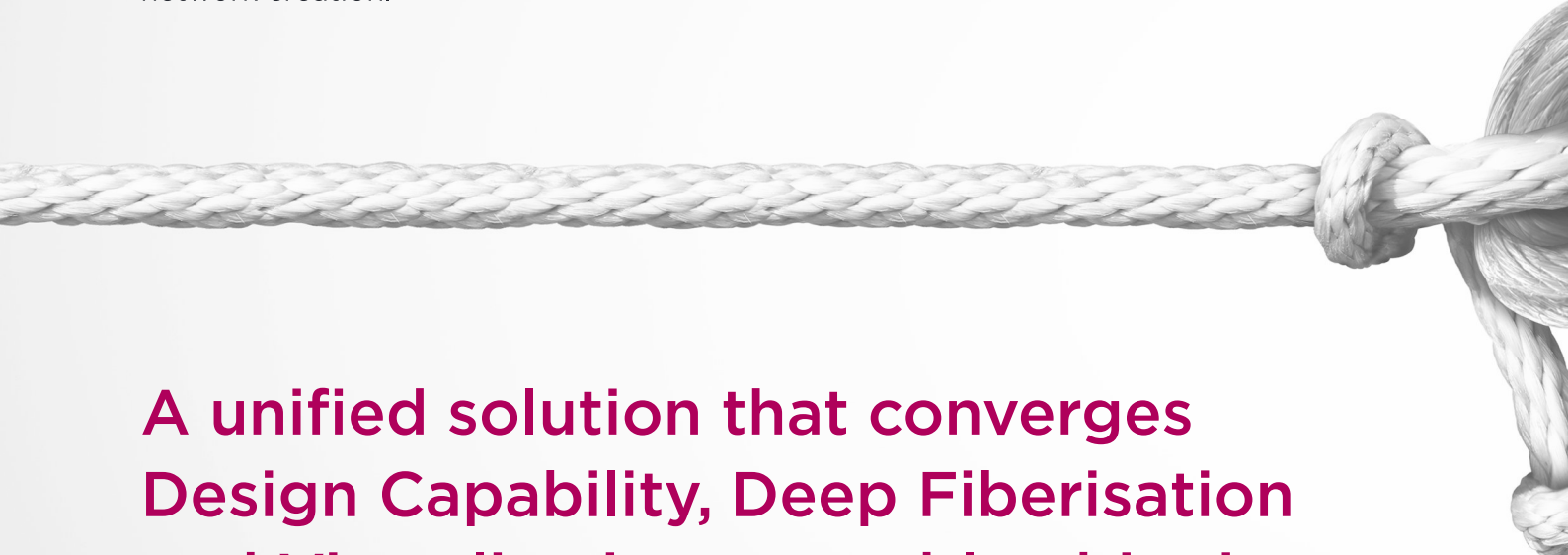
Project Varun for Indian Navy

### Powering Networks of Tomorrow

Software Defined Networks |  
Network Function Virtualisation

# THE POWER OF ONE

While fibre provides a technology anchor for brilliant digital fireworks, the world still needs a solution that sparks **design-innovation** at each step of network creation.

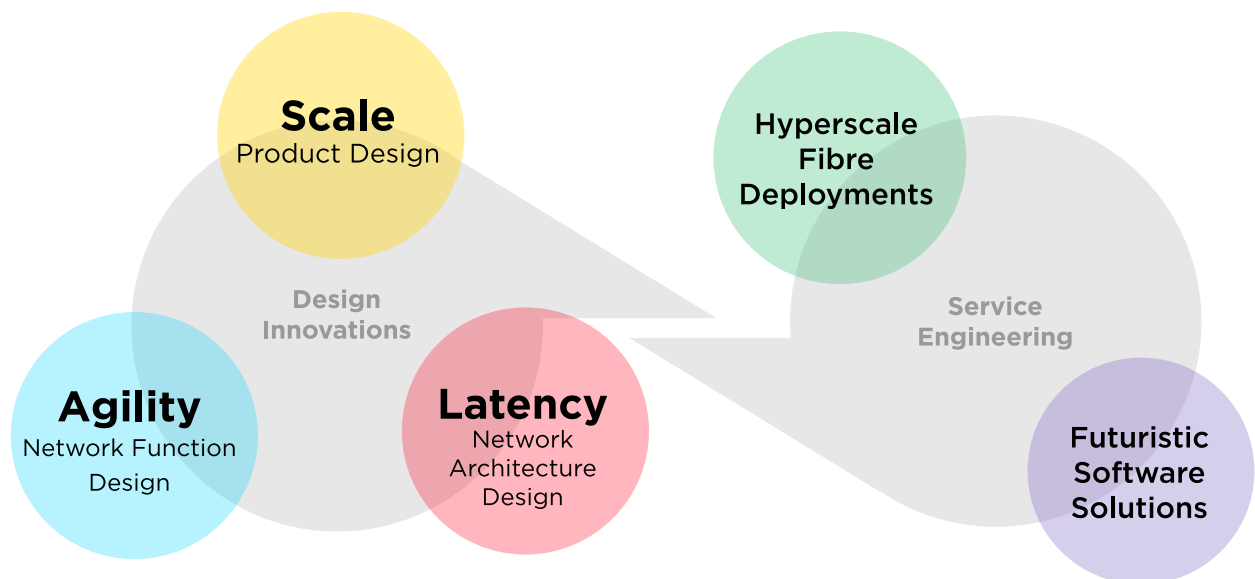


A unified solution that converges  
Design Capability, Deep Fiberisation  
and Virtualisation to enable ubiquitous  
connectivity to each and every home

And moreover, a solution that delights both, the end user and the service providers.



# STL's unique combination of DESIGN INNOVATION and SERVICE ENGINEERING



# Introducing **STL** **FTTx MANTRA**

Taking fibre to the eXponential

A unified solution that  
converges design  
capability, fiberisation and  
virtualisation to deliver  
**MASSIVE AGILE  
NETWORK  
TRANSFORMATION**



**Ingenious Products** custom designed to solve the most complex customer problems  
Bend insensitive fibre | High fibre count and Micro module cables | Compact kits



**Integrated Network Design** expertise create cost effective and future optimised networks  
Algorithmic design | Flattened architecture



**Innovative Virtualisation** across network functions to make the networks software controlled, hence agile and cost optimised  
SDN | NFV



**Inclusive approach to Hyperscale Network deployment** crafted in-house to re-engineer network roll outs in terms of scale, speed and quality  
Lead360



**Intelligent software solutions** leveraging the power of analytics and big data to unearth powerful consumer insights, which can change the way we do business  
Billing and Revenue Management | Intelligent Data Lake



# STL FTTx MANTRA

Creating  
Unsurpassed Value



Industry first, unified solution for FTTx deployments



Virtualised network function



Lower total cost of ownership



Great customer experience



Capacity agility – future proof



Software defined access network



Faster time to market



Delivering superlative Scale, Agility, Latency



Optimised costs

# Ingenious Products – Bend Insensitive Optical Fibre

The thread binding hyper scale networks

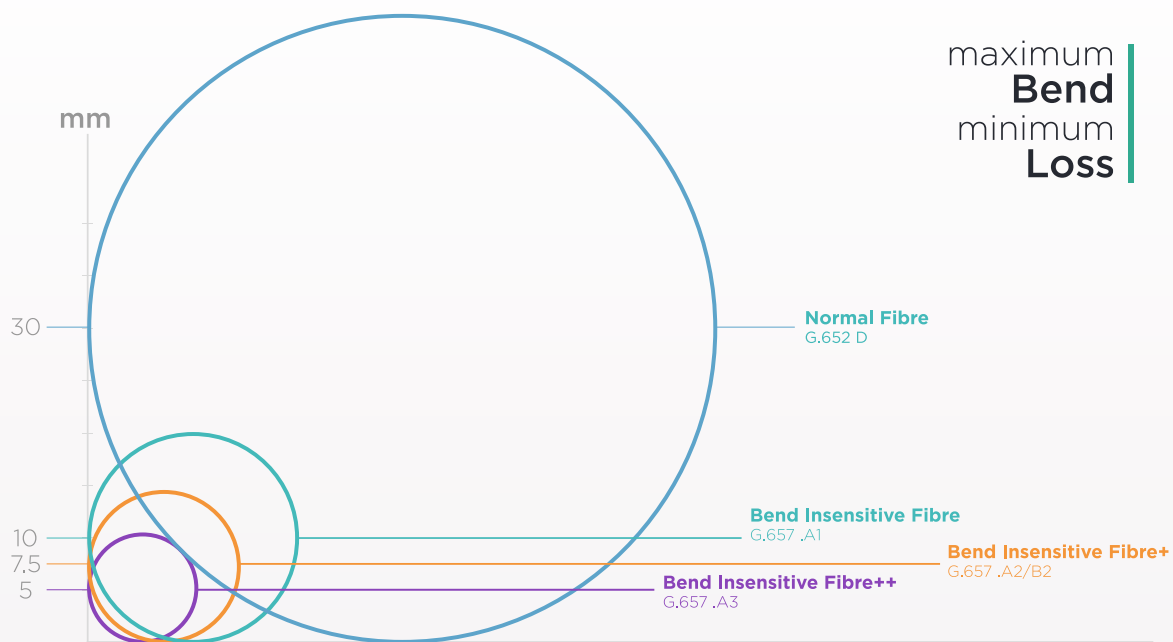
Optical fibre is a hair thin strand, ten times stronger than copper, with limitless bandwidth and negligible signal loss over long distances.

Taking fibre to millions of homes demands

fast, cost optimised roll outs, high performance and low losses over multiple bends and turns.

## STL's bend insensitive BOW LITE E fibre

is designed to reduce bend losses by upto 12X\*, deliver better performance at higher wavelengths and cater to dense deployments in the same power budget.



It is amazing how seemingly simple innovations can have a big impact. STL's bend insensitive fibre adds 10-12 years\* to networks' lifetime!

\* As compared with G.652.D fibre. STL estimates



# Ingenious Products – Ultra High Fibre Count and Micro Module Cables

Solving tough customer problems

Optical fibre cables are constantly getting re-engineered to fulfil the ever evolving needs of the market. In this space, there is no 'one size fits all'.

Fibre branching out to millions of homes calls for

handling of certain tough problems like achieving exponential scale, utilising limited duct space and ensuring backward compatibility.

These problems challenged our imagination and we challenged the status quo with our ingenious cable solutions.

## Our high fibre count and micro module cables

combine design attributes like high density, no preferential bending, easy identification, easy stripping and cleaving to deliver cable solutions fit for hyperscale fiberisation.



Hunger for constant improvement can be the difference between sub-optimal and ideal. STL's cable solutions leave no problem unsolved

\* For a micro module cable, as compared with normal loose tube

# Ingenious Products – Compact Kits

Delivering sophistication with amazing simplicity

The best things come in small packages!

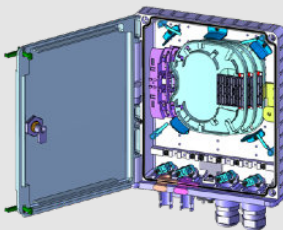
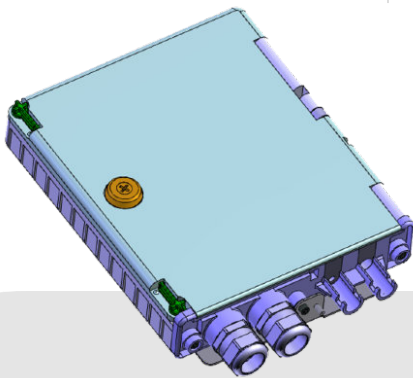
Delivering scale & fast home-pass readiness is not easy

It is fraught with challenges like requirement of skilled manpower, storage of excess cable, high number of materials/accessories and high splice and bend losses.

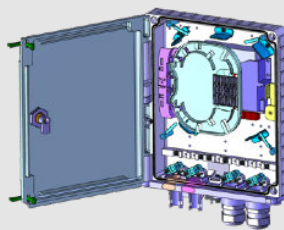
## Hyperscale FTTx deployments can be unboxed with our compact kits

Leveraging our design and instrumentation capability, our kits provide a plug and play, pre connectorised solution, which can reach high rises and stand-alone houses, with amazing speed and simple on field deployment.

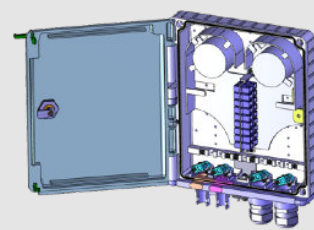
Our fibre and cable solutions ensure safe excess cable storage and minimal bend losses. While our range of optical passive equipment ensures seamless coupling and connection.



All Splice Version:  
STL-F-V-002



Cassette Splitter With Splice  
Tray Version: STL-F-V-003



Patch Panel Version:  
STL-F-V-004

Simplicity is about subtracting the obvious and adding the meaningful. That is how Compact Kits ensure agile roll outs along with de-skilling of field deployments



# Integrated Network Design – Algorithmic Designs

Great work of the best minds and the best technology

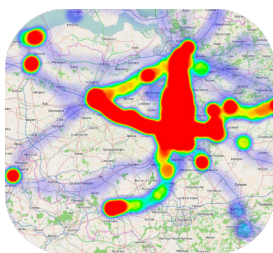
Deep customer understanding and data driven insights are at the core of network design

Network design  
needs to achieve  
so much

Apart from delivering on the scale, latency and agility requirements, network design needs to factor in everything from customer demand to provider's infrastructure, while preventing over or under build of assets.

## Our algorithmic design capability cracks the code

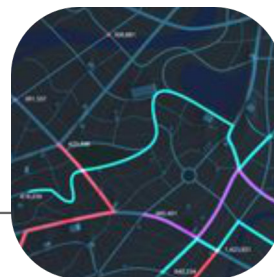
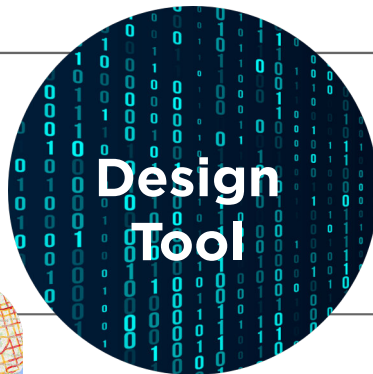
With customisable inputs, robust backend intelligence and comprehensive outputs on geo-spatial and engineering designs, it helps create sophisticated and optimal network, suited to the most granular requirements of the providers.



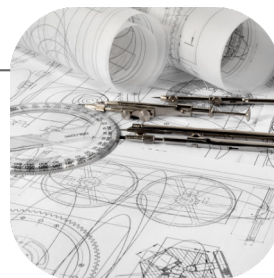
Demand



Candidate Infrastructure



Geospatial Design



Engineering Design



Bill of Materials

We need to take the first step right to reach the destination. That's how we create smarter networks – by starting with great network design

# Integrated Network Design – Flattened Architecture

Design thinking at each layer

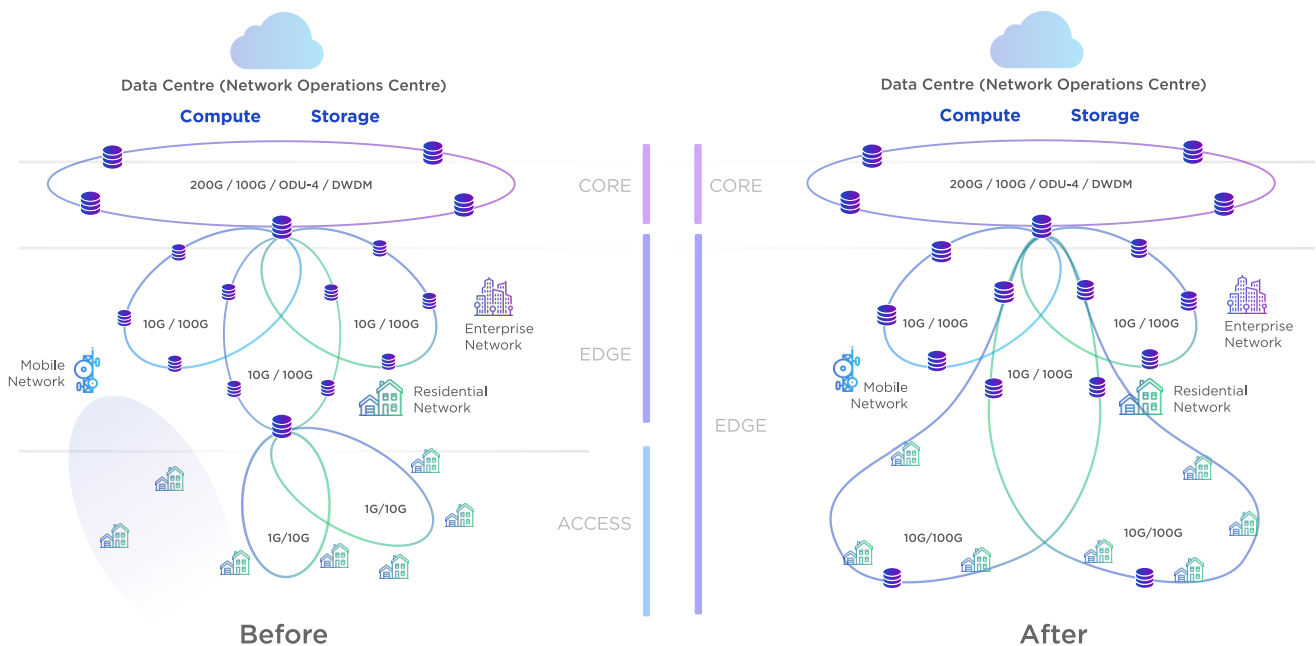
Network design is all pervasive. It impacts everything from user experience to network economics

## Current 3 layer networks need to evolve

As more and more end points join the data bandwagon, low response time and faster routing will be an imperative.

## Looking ahead with flattened network architecture

STL uses design thinking at each layer of the network to deliver responsive, future fit networks. Our inventive flattened network architecture collapses the access layer, simplifies routing, eliminates multiple hops to deliver ultra-low latency for hyper connected users.



Only those who attempt the difficult, will achieve the impossible. Our disruptive Flattened Network Architecture takes access to the edge and delivers near zero latency

# Inclusive Approach to Hyperscale Deployment – LEAD360

Transformative approach for fibre roll outs

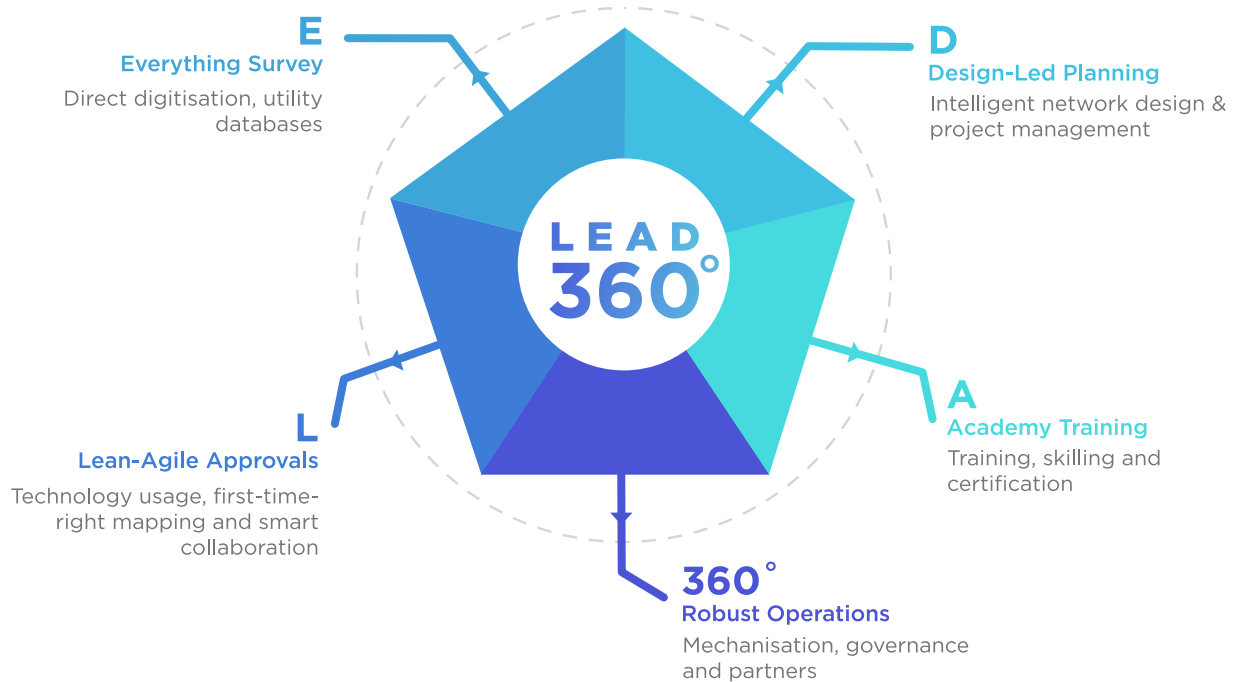
Digital revolutions and future technologies are hinging on fibre

Hyperscale fibre roll outs have many moving parts

Challenges like RoW approvals, sub optimal surveys, unskilled manpower, manual planning and legacy operations inhibit faster and cost effective roll outs.

## Fibre roll outs done right with LEAD360

Tackling all the challenges, LEAD360 delivers fast, cost optimised and high quality fibre roll outs for hyperscale projects.



Disruption is the creative confidence to re-imagine problems as opportunities. With LEAD360, STL circumvents all challenges to ensure seamless roll outs



# Innovative Virtualisation

Orchestration at its best

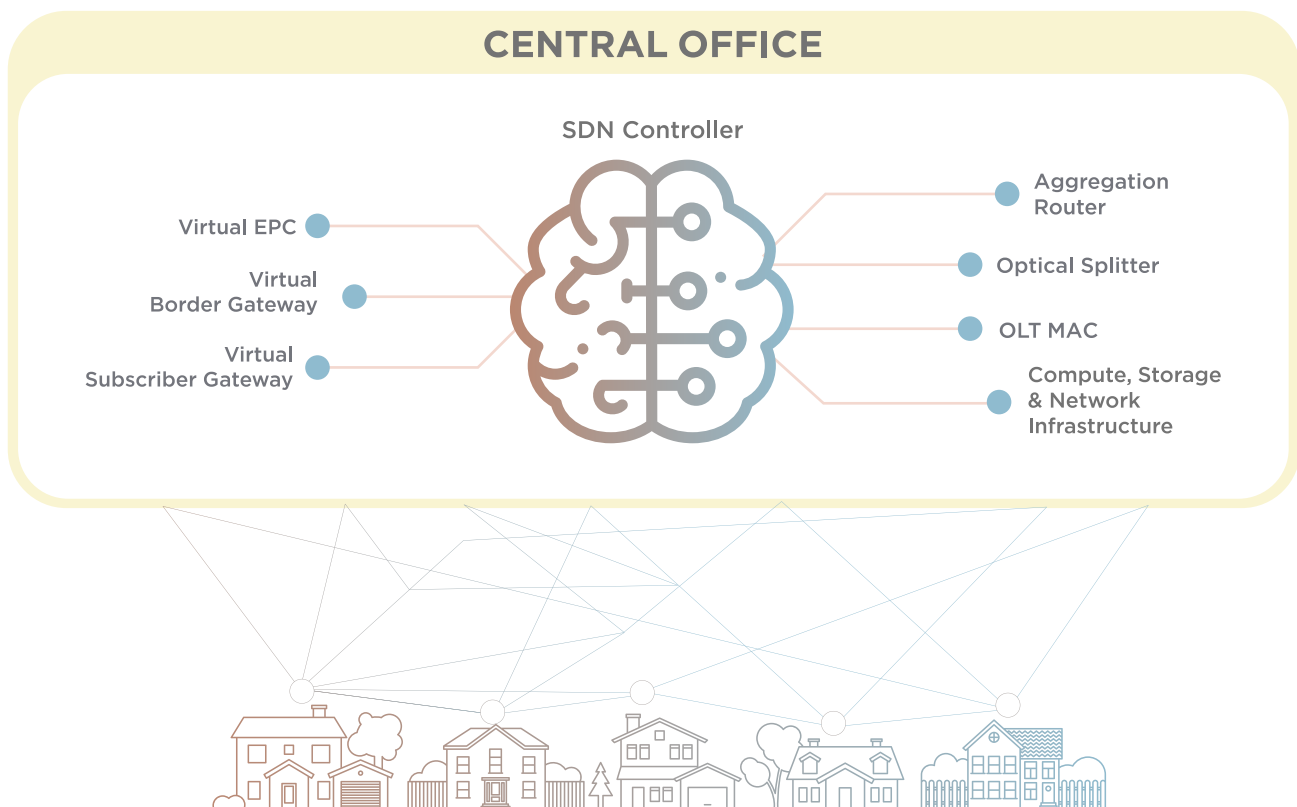
As networking gets complex, networks need to become simpler

Unprecedented data explosion will fuel

massive network expansion, myriad use cases and multi-fold traffic increase. Networks would need to become more intelligent, agile, controllable and cost effective.

**Smartly converged and Simply controlled is here!**

STL designs & integrates software defined access and network function virtualisation into FTTx MANTRA. With a centralised control plane, virtualised network functions and low hardware footprint, the access network delivers superior control, high agility and cost effectiveness – all in one go!



Creativity is to answer a question that has never been asked. Our SD- Access solution addresses the latent needs of dense access networks in the 5G era

# Intelligent Software Solutions

Unrelenting focus on user experience

In a world that runs on data, converged digital platforms are indispensable

Service providers need to focus more on customers and less on network management

Once networks are designed and built, they need to be managed and monetised. Service providers need converged digital platforms to catalyse their revenue and business operations.

## There can be no world without bills. But billing can be made simpler

Our Billing & Revenue Management (BRM) solution, is a single converged platform that simplifies billing processes and ensures intelligent revenue management of digital services. With integrated analytics, modular architecture and real-time converged charging, it creates multiple efficiencies for service providers.

## A data powerhouse for actionable insights

Intelligent data lake is a real time business intelligence solution with power packed features such as scalable storage support, advanced analytics, high quality data processing. It helps in data driven decision making, enhanced monetisation and in creating happier customers.

Reduced time to market  
Enhanced data security  
Performance KPI enhancement  
Meaningful business insights  
Reduced Tco  
Enhanced data security  
Reduced time to market  
Meaningful business insights  
Performance KPI enhancement

Simplicity is the ultimate sophistication. We develop the most advanced software offerings to deliver on the things that matter the most



**M**assive **A**gile **N**etwork **T**RAnsfOrmation



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