



# CELTIC-NEXT Proposers Day

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**Pitch of the Project Proposal**

**‘Digital Twins for Future Network Management’**



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# Teaser

## Goal

The project aims to investigate on the **applications of digital twins to support network design, planning and management**, focusing on intelligent simulation, monitoring and data analysis (e.g. smart building simulation, networks asset monitoring).

## Main Benefit

Enhance network management processes, and reducing operations costs by optimising existing resources, doing real-time monitoring and simulation.

## Why should I participate?

Research agencies <sup>1</sup> estimate that by 2020, there will be more than 20 billion connected sensors and endpoints, which could potentially enable billions of digital twins for asset optimization, competitive differentiation and improved customer experience in many industries.

<sup>1</sup> Gartner, Inc., "Top 10 Strategic Technology Trends for 2018," Gartner, Inc, 2017.

# Organisation Profile



BT is one of the **world's leading communications service provider** companies, serving the needs of customers in more than 180 countries worldwide.

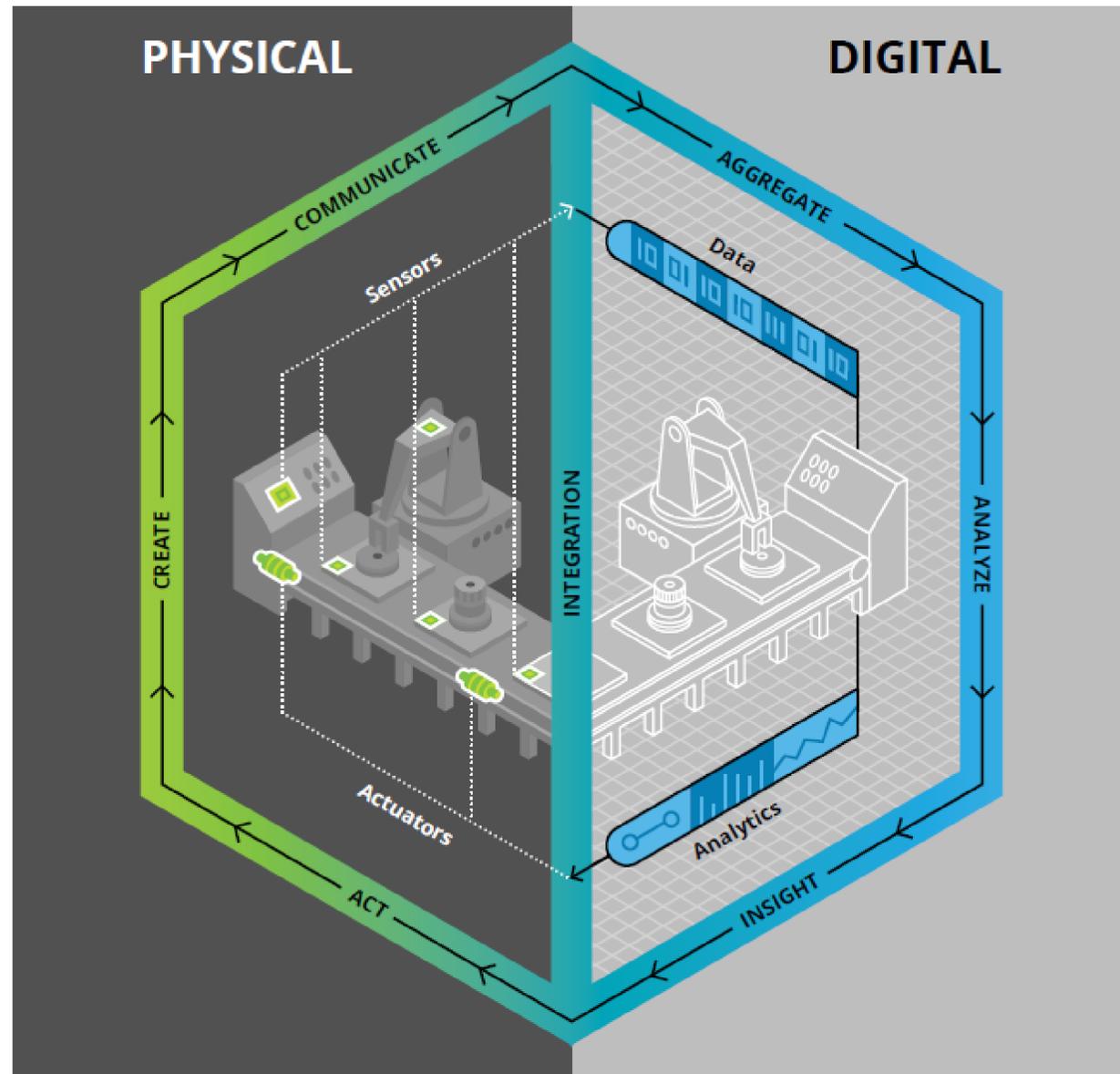
In the UK, is the largest provider of consumer fixed-line voice and broadband services, and the largest mobile network operator.

Our research department works in partnership with universities and academia, start-ups, strategic partners, Government bodies, other telcos and key customers to develop innovative solutions.



[www.btplc.com](http://www.btplc.com)

# Proposal Introduction (1)



Source: Deloitte University Press.

Deloitte University Press | [dupress.deloitte.com](http://dupress.deloitte.com)

<sup>2</sup> Deloitte, Inc., "Industry 4.0 and the digital twin", 2018.

A digital twin can be defined as an **evolving digital profile of the historical and current behaviour of a physical object or process** that helps optimize business performance<sup>2</sup>. Is based on massive, cumulative, real-time, real-world data measurements across an array of dimensions<sup>2</sup>.

“Rather than being a technology in and of itself, a digital twin is actually the confluence of several different technologies designed to deliver specific business outcomes”.

Digital twins **could provide important insights on system performance**, leading to improved decision-making in processes by their ability of collecting and visualising real-time data, enabling smart analytics and customised rules to effectively achieve business objectives.

# Proposal Introduction (2)

## Initial Use cases

- **Smart building simulation:** Management of complex networks might benefit from a digital twin representation of the real-world conditions that would affect the performance of the base sites, such as the physical environment, usage at various locations, mapping, and the location of street furniture.
- **Network assets monitoring:** Digital twins could also be used for the effective management and simulation of specialised equipment, (e.g. mobile cell towers), particularly those in remote locations which can be difficult to maintain.

## Expected outcome and impact

- Creation of an ecosystem to support real-time decision-making, linking IoT sensors and actuators with virtual representations of equipment and processes.
- Perform technology evaluations, as well as testing the developed solutions in pilot use cases, in real world scenarios.
- Design and development of intelligent tools for quick prototyping scenarios, which can be used for network planning and simulation.
- Dissemination of results and findings to public and scientific forums providing input for standardisation and scaling to other service-based industries.
- Provide a framework to explore security-related issues, and ethics legislation for policy makers.

# Partners



- BT (Company, UK) – Expertise in Network Design, Field Service Operations, AI, Immersive Tech, 5G technology. Testbed for use cases.

## In talks with

- Turkcell (Company, Turkey)
- Liverpool John Moores University (RO, UK)
- University of Essex (RO, UK)
- Smart Network Environments (SME, UK)
- Electronics and Telecommunications Research-ETRI (RO, Korea)
- Mobigen (SME, Korea)
- InstaDeep (SME, France)

## Partners we are looking for

- European partners to help us creating immersive content and experiences (e.g. 3D models, UI interfaces, etc.).
- European partners with experience in project management and testing.

# Contact Info



**For more information and for interest to participate please contact:**

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**Presentation available via:**

[www.tiny.cc/projectidea](http://www.tiny.cc/projectidea)

