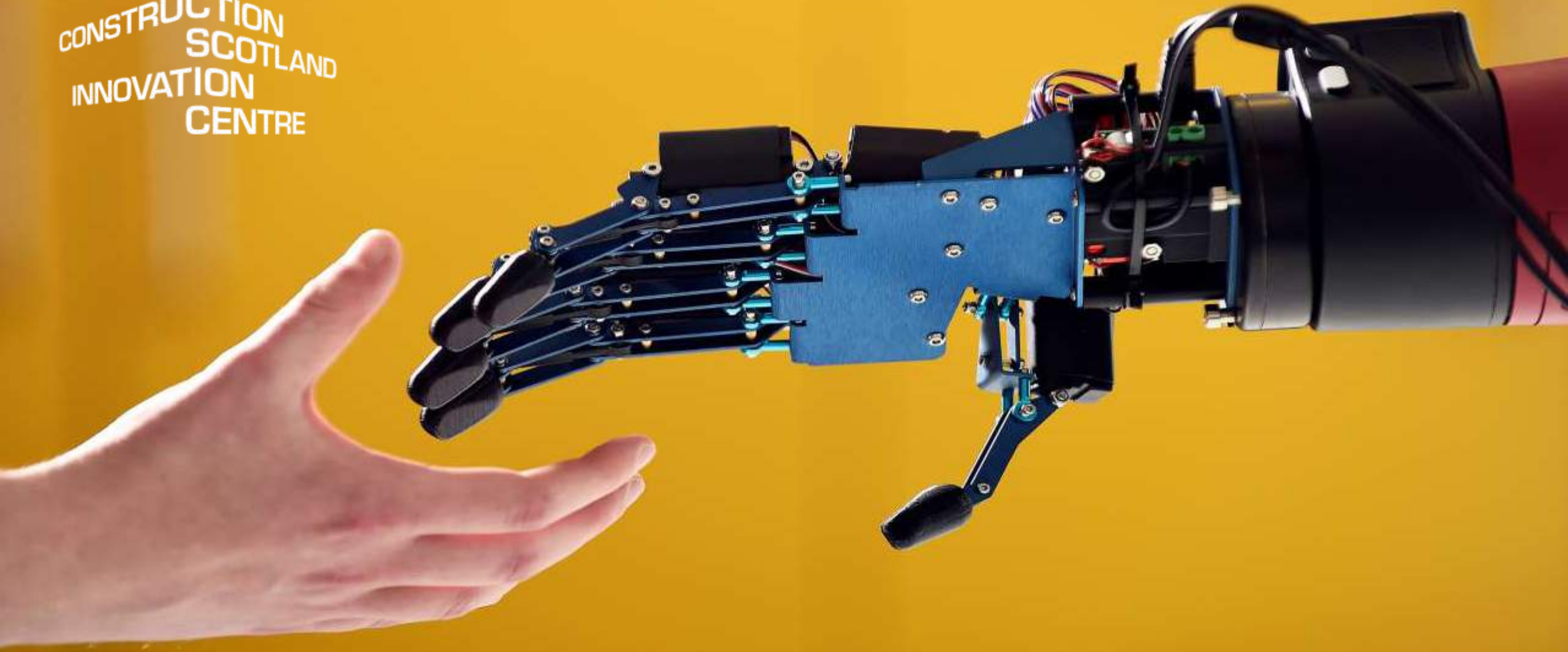
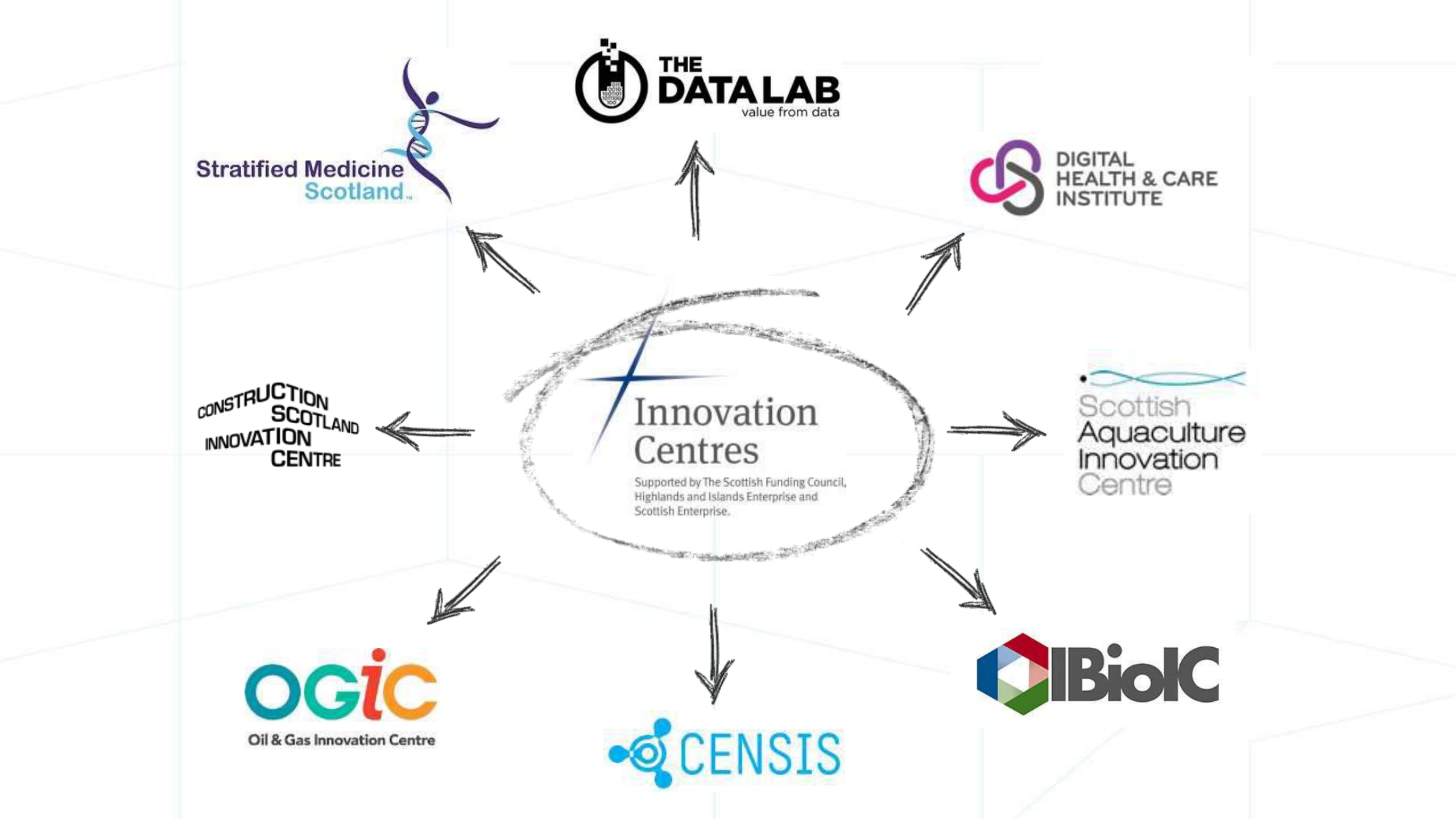
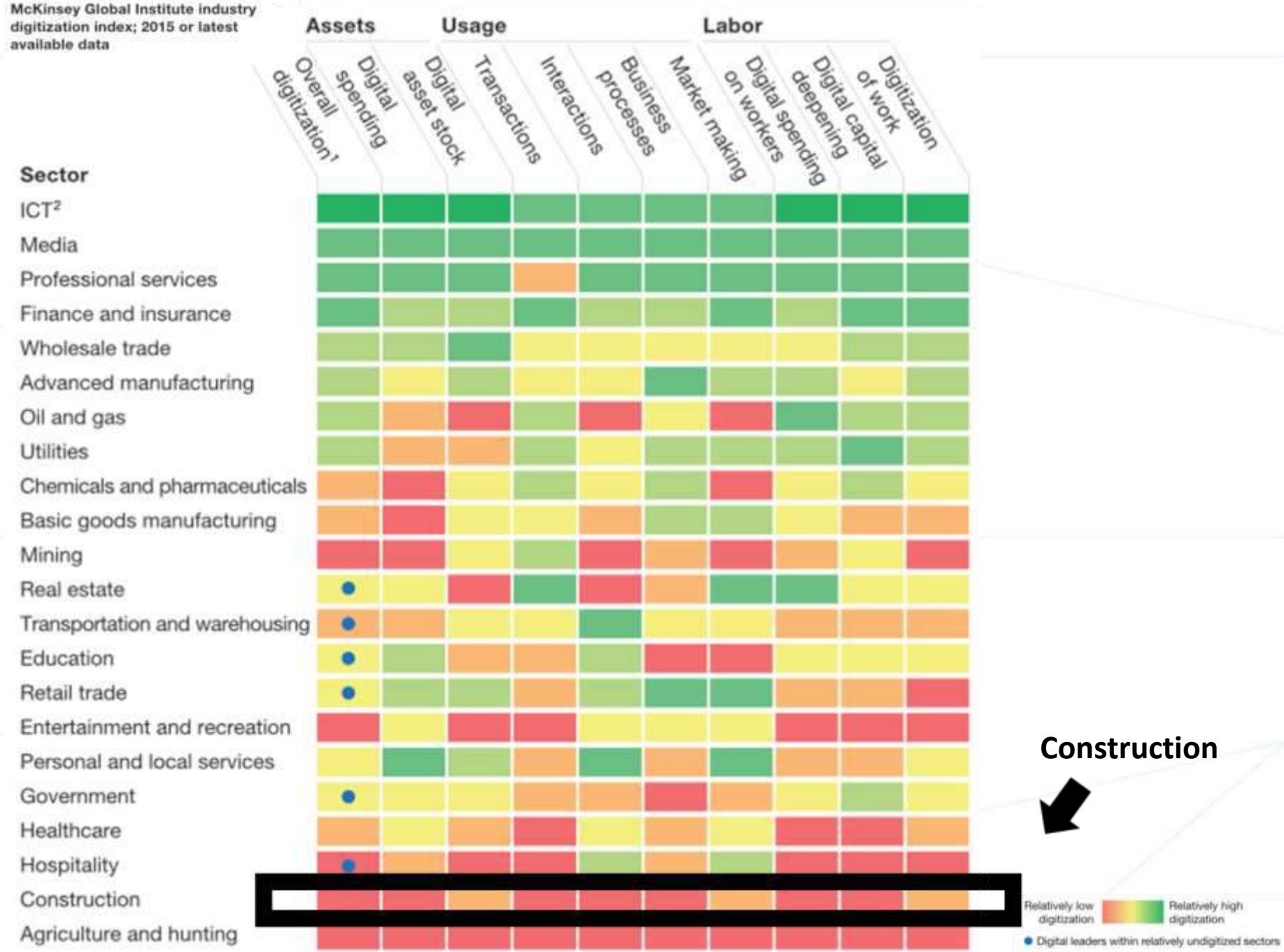
CONSTRUCTION SCOTLAND INNOVATION CENTRE



CSIC Overview

Jennifer Smart


THE DATA LAB
value from data
Stratified Medicine Scotland
DIGITAL HEALTH & CARE INSTITUTE
Innovation Centres
Supported by The Scottish Funding Council, Highlands and Islands Enterprise and Scottish Enterprise.
CONSTRUCTION SCOTLAND INNOVATION CENTRE
Scottish Aquaculture Innovation Centre
OGIC
Oil & Gas Innovation Centre
CENSIS
IBioIC


McKinsey Global Institute industry digitization index; 2015 or latest available data
Assets
Usage
Labor
Overall digitization[1]
Digital spending
Digital asset stock
Transactions
Interactions
Business processes
Market making
Digital spending on workers
Digital capital deepening
Digitization of work
Sector
ICT[2]
Media
Professional services
Finance and insurance
Wholesale trade
Advanced manufacturing
Oil and gas
Utilities
Chemicals and pharmaceuticals
Basic goods manufacturing
Mining
Real estate
Transportation and warehousing
Education
Retail trade
Entertainment and recreation
Personal and local services
Government
Healthcare
Hospitality
Construction
Agriculture and hunting
Construction
Relatively low digitization
Relatively high digitization
Digital leaders within relatively undigitized sectors

The construction industry accounts for approx. 60% of UK materials use.

60%

The construction industry generates 47% of UK carbon emissions & 80% of those are from buildings in use.

47%

Phase out greenhouse gas emissions by 2050 to end UK contribution to global warming

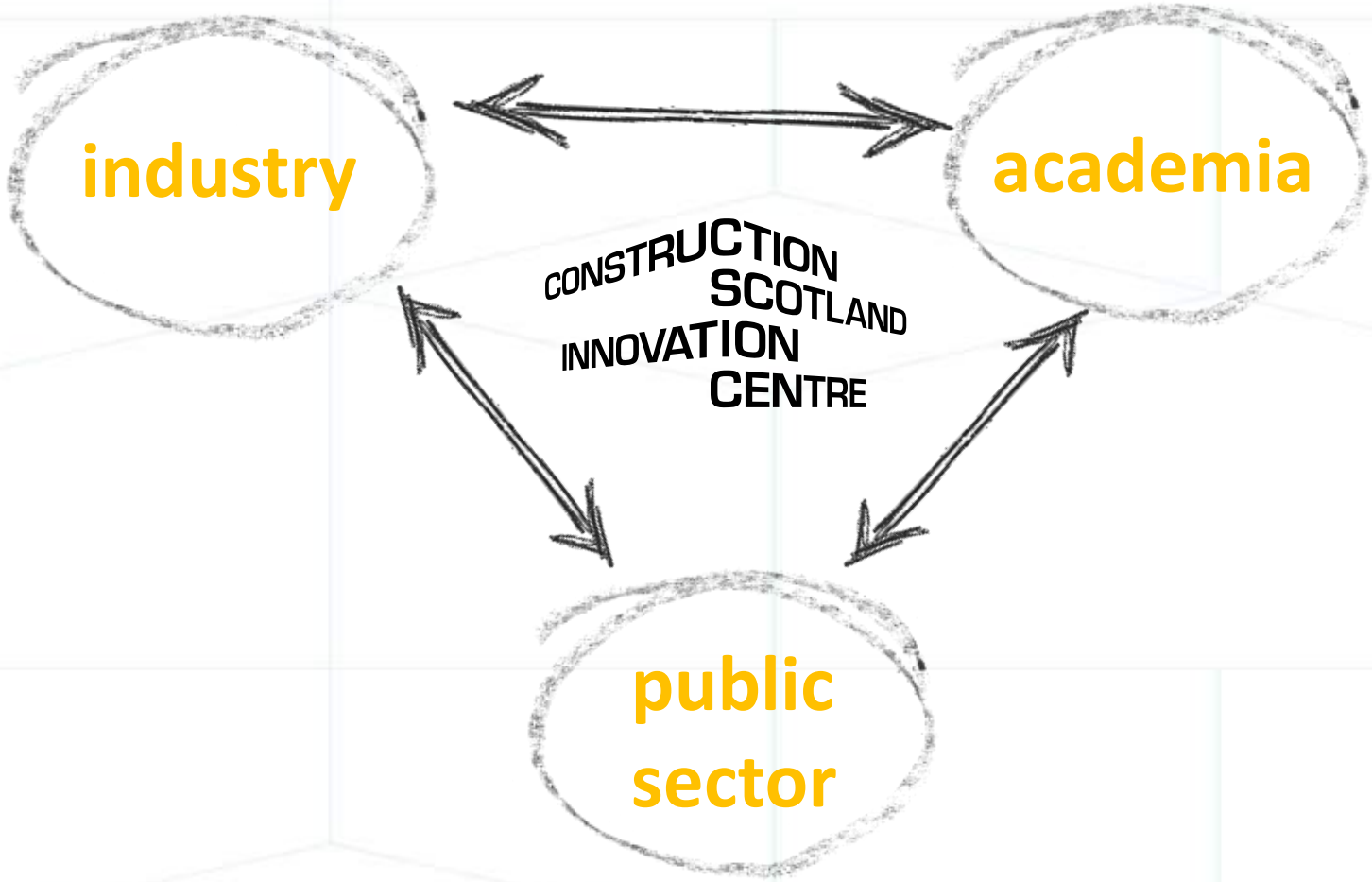
2 May 2019

The UK can end its contribution to global warming within 30 years by setting an ambitious new target to reduce its greenhouse gas emissions to zero by 2050, the Committee on Climate Change (CCC) says today.

In Scotland – this is 2045!

So even more need to be innovative!


SKOLSTREJK
FÖR
KLIMATET



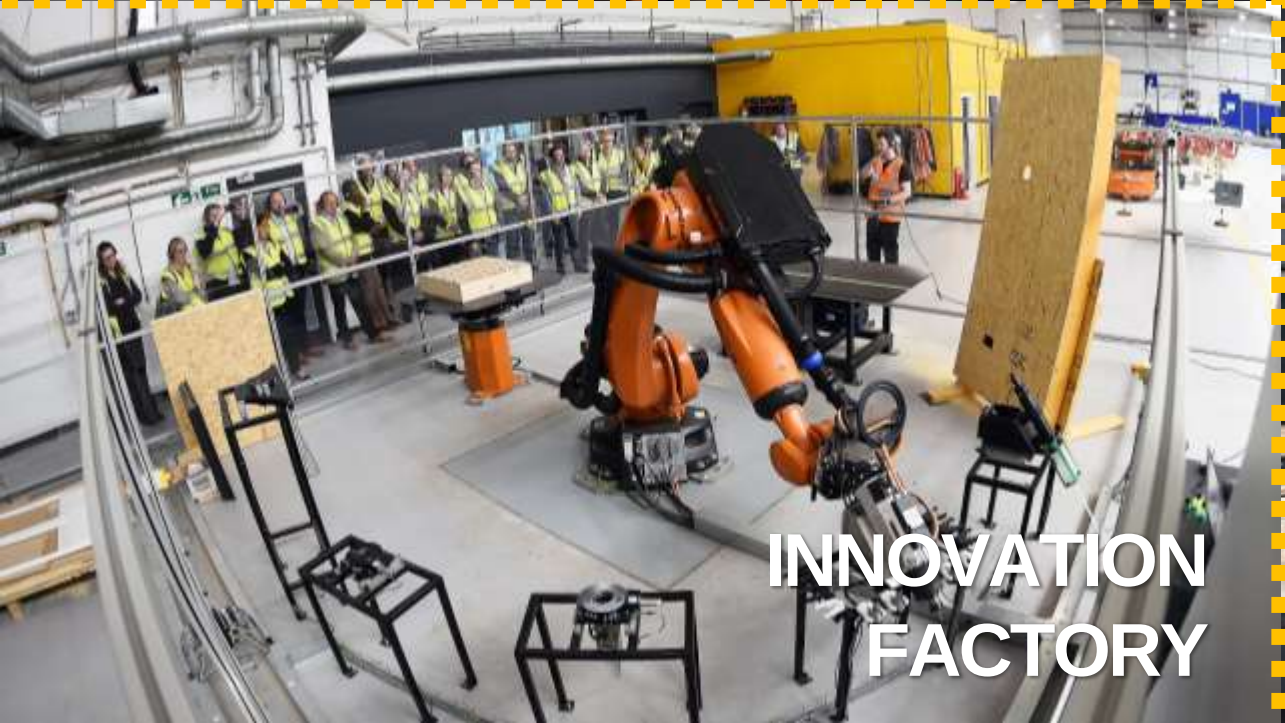
champion innovation & connect Scotland's construction industry to deliver transformational change.

4

CORE ACTIVITIES

CONNECTED ECOSYSTEM

COLLABORATIVE PROJECTS



INNOVATION FACTORY

FUTURE WORKFORCE

4

KEY PRIORITIES

CULTURE CHANGE

BUILDING SUSTAINABLY

ACCELERATING INDUSTRIALISATION

DIGITAL TRANSFORMATION

- Circular construction
- Design for Deconstruction
- Sustainable materials
  - *A&DS – materials library*
- Waste minimisation & reuse
- Energy efficiency
- Active Buildings
- Healthy ageing
- Good environmental practice

Queen Elizabeth Olympic Park

- Designing out waste
- Designing for deconstruction
- Re-use of materials

Circl – ABN AMRO

- Energy Neutral
- Designed for disassembly
- High Recycled content

Sensing and addressing wellbeing in buildings

Challenge

There are a number of factors that effect the health and wellbeing of individuals. Within an office context there is a direct correlation between indoor conditions and the productivity and general wellbeing of the building users.

Project

The aim of the project is to address the main barriers to the development of wellbeing promotion/services in the built environment and to create a quantitative benchmarking system that aids planners, owners, and tenants chart a path to increasing wellbeing and productivity in buildings

Outcomes

- Increased company turnover of £25million
- 10 jobs created
- 2 new products , 2 new processes created and 2 international markets

Support

• Total Project Value	£ 65,365
• CSIC Funding	£ 21,692
• Project Duration	July 2017- July 2018

arbnco
Leading the way to a cleaner, greener world

TH Real Estate

M&G REAL ESTATE

University of Strathclyde

Construction on Peat - Feasibility

Challenge

Economic development in Scotland is constrained by a shortage of affordable housing. Prime locations exist but many areas of rural Scotland are covered with peat, presenting enormous construction challenges. Current methods to build upon peaty soils favour excavate and replace which is financially and environmentally costly.

Project

The proposed work will unlock innovative options for building foundations, especially in the use of timber piling, as a means of enabling the responsible use of peat sites for housing development and to validate this approach with existing technologies.

Outcomes

- Verify the adoption of innovative solutions for construction on peat through research
- Feasibility study to inform a Part 2 project to undertake Field Trials in rural Scotland

Support

- Total Project Value £ 75,498
- CSIC Funding £ 19,948
- Project Duration Aug '19 – May '20

The Highland Council
Comhairle na Gàidhealtachd

SIMEC LOCHABER HYDROPOWER 2 LIMITED

HIE
Highlands and Islands Enterprise
Iomairt na Gàidhealtachd 's nan Eilean

Acoustic Road Barriers

Challenge

Develop a cost effective acoustic barrier system for Scotland's main trunk road infrastructure

Project

Investigate the suitability of recycled tyre crumb as an appropriate acoustic barrier for properties located along trunk road network

Outcomes

- Evidence to determine the appropriateness of the waste product
- Solutions related to the acoustic, environmental benefits
- A cost effective alternative to conventional fences for adoption by industry

Support

• Total Project Value	£ 78,000
• CSIC Funding	£ 20,000
• Project Duration	July 2015 - May 2016

TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

TRL

MACCAFERRI

bre

UNIVERSITY OF DUNDEE

HERIOT WATT UNIVERSITY

Aggregate from waste ash

Challenge

Environmental legislation and circular economy objectives has led to the current and planned future development of thermal power plants fuelled by both biomass and processed waste. The waste ash from this process is currently sent to landfill.

Project

This project aims to divert this waste from landfill and both remove the hazardous nature of the material and to prepare a stable and consistent range of products (caked and pelletised aggregate product) for use in the construction sector

Outcomes

- 2 products, 2 processes, 1 service and 1 new business model created
- Increased revenue of £4.7 million
- 10 jobs safeguarded, 6 created

Support

• Total Project Value	£29,000
• CSIC Funding	£ 10,000
• Project Duration	Sept 17 – Dec 17

WILLIAM TRACEY
RECYCLING & RESOURCE MANAGEMENT GROUP

AFRC
ADVANCED FORMING RESEARCH CENTRE
UNIVERSITY OF STRATHCLYDE

Bacteria Based Ground Improvement Technology

Challenge

Maintaining and developing our national infrastructure comes with huge financial and environmental costs. The industry deploys construction techniques and technologies that have changed little over decades, require the transportation of large volumes of carbon-intensive construction materials and produce significant waste streams

Project

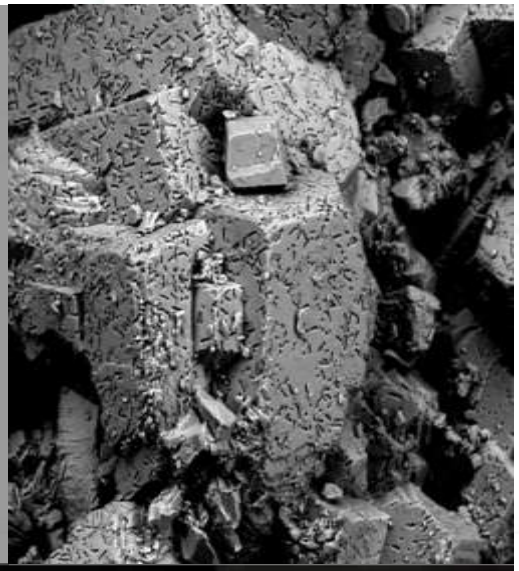
The project will harness natural biochemical mineralisation processes to reinforce soils, via in-situ injection. This technology could transform industry practice from one of soil excavation and material import, to one in which the properties of local materials are tailored to meet construction needs

Outcomes

- 2 new processes, 1 new service
- 15 jobs safeguarded, 5 created
- £25M in increased turnover over 5 years

Support

• Total Project Value	£520,000
• CSIC Funding	£187,000
• Project Duration	May 2018– May 2020



bam ritchies

University of Strathclyde

Recovered Toner Powder to enhance water resistance of precast concrete products

Challenge

The industry standard and state-of-the-art process of waterproofing concrete uses either vapour-retarding membranes or low-voltage currents to waterproof foundations. Both methods need constant maintenance to prevent water penetration.

Project

A feasibility study to investigate the potential use of modified toner powder as a permanent integral waterproofing solution at no further cost that also provides aesthetic benefits to the concrete.

Outcomes

- A review of pigmented and waterproof concrete markets, assessment of the commercial scenarios and alternative products and applications
- Feasibility & performance trials
- Increased revenue and workforce for lead company
- Significant Co2 reduction

Support

• Total project value	£47,296
• CSIC contribution	£17,946
• Project Duration	6 Months

Moock Environmental

The Professional Toner Cartridge Recyclers

Inverurie PRECAST LTD

UNIVERSITY OF DUNDEE

The K-Briq

Challenge

70% of building materials will need to be recycled by 2025 and 0% to pass to landfill. Currently 120M tonnes annually produced in the UK

Project

The project is to assess the feasibility and testing of a novel building material made from 90% recycled material from pilot production through to delivery of a demonstration structure with on-going monitoring

Outcomes

- £11m increased turnover for lead partner and supply chain by year 5
- Creation of 20 high value jobs
- 5,355 tonnes of CO_2 per annum saved once 10m bricks/ annum produced

Support

• Total Project Value	£469,000
• CSIC Funding	£214,000
• Project Duration	August 2017 - August 2019

K

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stay connected…

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