



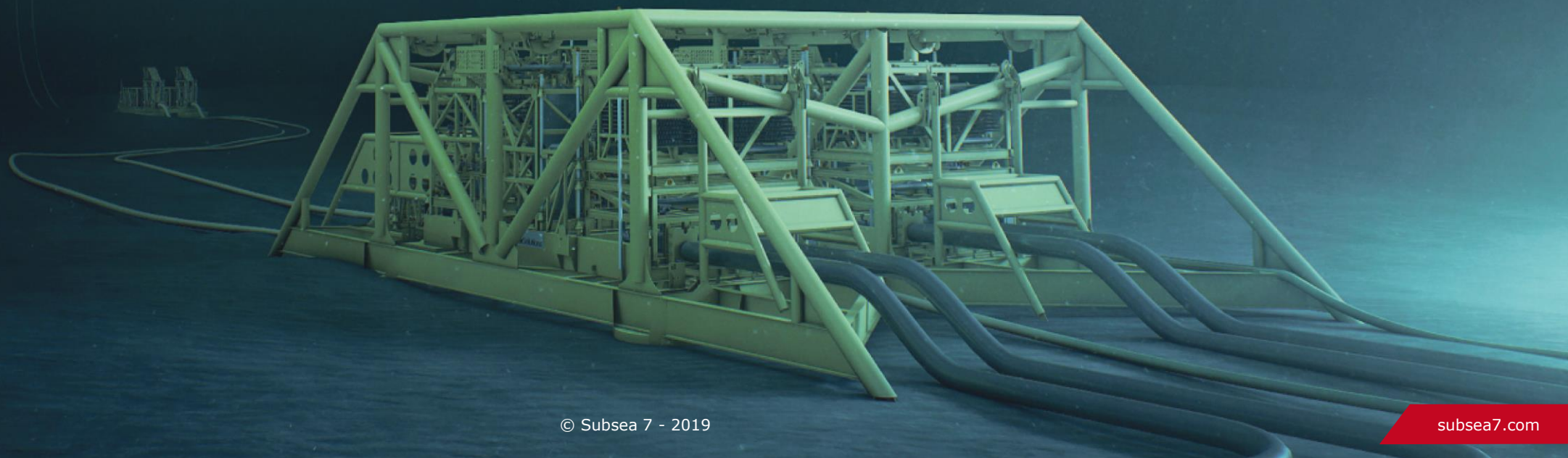
OCEAN ENERGY AND THE SUPPLY CHAIN – BUILDING THE FUTURE INTO TODAY

GAVIN MCCLAFFERTY

# .....WHO WE ARE

Subsea 7 is a global leader in the **delivery** of **offshore projects** and **services** for the **evolving energy industry**.

We create **sustainable value** by being the industry's **partner** and **employer of choice** in delivering the **efficient** offshore solutions the **world needs**.

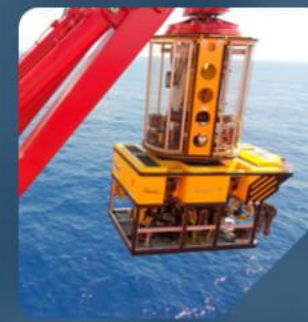




# WHAT WE DO



**SURF &  
CONVENTIONAL**



**i-TECH  
SERVICES**



**RENEWABLES &  
HEAVY LIFTING**



# CREATING VALUE THROUGH INNOVATION & TECHNOLOGY

**Capturing decades of experience and creating new step-changes for the future.**

- Solutions that reduce CAPEX costs related to subsea field developments
- Enabling increased recovery rates
- Increasing value extracted from existing field infrastructure
- Enabling development of complex reservoirs
- Integration of continuous health monitoring
- Lowering OPEX costs of subsea operations



# SUBSEA 7'S GLOBAL PRESENCE





# 10X NOT 10%:

We are limited only by our capacity to dream in more than one dimension.  
(McClafferty, 2015).





## OPEN INNOVATION – WHAT IS IT?:

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Open Innovation (OI) is based on the acceptance that **some of the knowledge** we need to solve our **technology challenges** may exist outside of our business.

The “open” aspect of Open Innovation stems from collaborating with **external partners** to create innovative solutions.

**Not all innovation is open.** Some challenges will remain confidential to protect IP / competitive advantage.

## THE FUTURE: INNOVATION VS REALITY

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Many organisations need to understand that there is a cost to doing **nothing**.  
Many are in a situation where they **innovate or cease to exist**.

“The future is simply the set of **all moments yet to come...**” (Thiel, 2016).

**INNOVATION** more than a core value  
**CAPACITY FOR DISRUPTION** a strategic paradox or a trade-off  
**CREATING SOMETHING NEW** moving from zero to one

“In a world that's changing so quickly, the biggest risk you can take is **not taking any risk**.” (Thiel, 2016).

Creating value through an **ECOSYSTEM**: We need to understand the challenges which exist beyond our organization.

“No company is an **ISLAND**.” (Kapoor, 2017).

“**Time is our most precious currency**.” (McClafferty, 2019).



# OPENING UP A SUCCESS STORY:

 **Scottish Enterprise** @scotent · 5h  
As global growth softens and uncertainties rise, Scottish companies can take steps to build resilience and maximise opportunities, both at home and abroad, with our help 🌐 Our bi-monthly economic commentary is out [ow.ly/Gg4S50ugbev](https://ow.ly/Gg4S50ugbev) #Scotland #economy

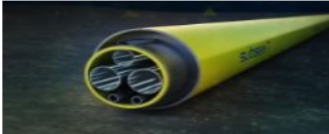


IfM MANAGEMENT TECHNOLOGY POLICY

UNIVERSITY OF CAMBRIDGE  
Department of Engineering

### Recent Updates

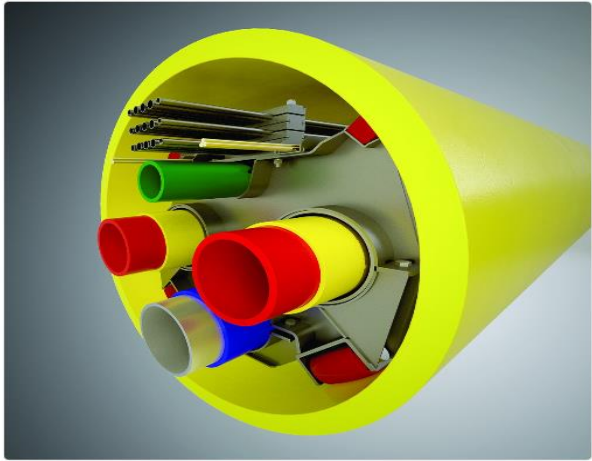
**Subsea 7** Entrepreneurs & SMEs do you have the answers to our new pipeline innovation challenges? Visit the open innovation site [NineSigma](https://ninesights.ninesigma.com) to find out more.



**Subsea 7 Innovation Challenges - NineSigma**  
[ninesights.ninesigma.com](https://ninesights.ninesigma.com) - Interested in submitting a proposal? We're looking to work with entrepreneurs and small and medium sized enterprises to develop pipeline technologies that reduce costs, increase efficiency and improve North Sea viability.

**Subsea 7** @Subsea7Official · Oct 25  
Entrepreneurs & SMEs do you have the answers to our new pipeline innovation challenges? #ConnectUp  
[ninesights.ninesigma.com/web/subsea7-ga...](https://ninesights.ninesigma.com/web/subsea7-ga...)

**Subsea 7** @Subsea7Official · Oct 21  
Entrepreneurs & SMEs connect with Subsea 7 in Glasgow on 25 Oct. We're releasing two new innovation challenges [bit.ly/2e3WCjZ](https://bit.ly/2e3WCjZ)



NINESIGMA

yet2

HYPE



# TOOLKIT:

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## WANT, FIND, GET, MANAGE

Internal / External challenge management.



## PROBLEM SOLVING

Innovative concepts or designs to solve a problem.



## PARTNER ECOSYSTEM

Access to over 45 million solution providers and growing.



## PATENTS & INTELLECTUAL PROPERTY

Acquisition, identification & monitoring.



## TECHNOLOGY SEARCH

In depth knowledge and insights, overview of emerging technology trends.



## ECONOMIC DEVELOPMENT

Early stage investment, access to R&D funding to bring solutions to market.



## IDEATION CHALLENGES

Innovative ideas on how to approach or solve a problem.

“Some years ago, we recognized that the **technological challenges** facing us required knowledge **beyond our extensive in-house expertise.**” (Sunde, 2018).



# FAIL FAST AND TAKE THE LEAP:

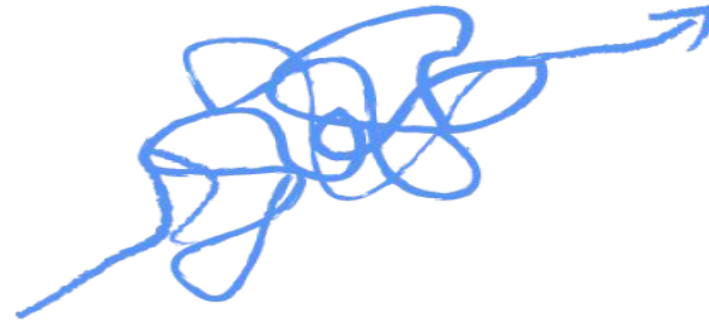


**Daniel Arsham** @DanielArsham · 12 May 2018

You might not be responsible for your own failure, but you can be responsible for your own success



Success



what it really  
looks like

## OPEN INNOVATION EXPERIENCE:



“The road to **success** is paved with **experimentation**.” (Pferdt, 2019)



## .... BUNDLES:

- **Pipeline Bundle Spacers; Reduce weight by design: 14 solutions**
  - enabled opportunities to reduce spacer weight by up to 25%, automated FEA / topology optimisation
- **Pipeline Bundle Inspection: 7 solutions**
  - extensive technology intelligence, created future watch list
- **Dry lubricants suitable for use in a tribological system: 15 solutions**
  - significant project cost savings and several weeks off of project schedule



# LIFE OF FIELD & REMOTE INTERVENTION:

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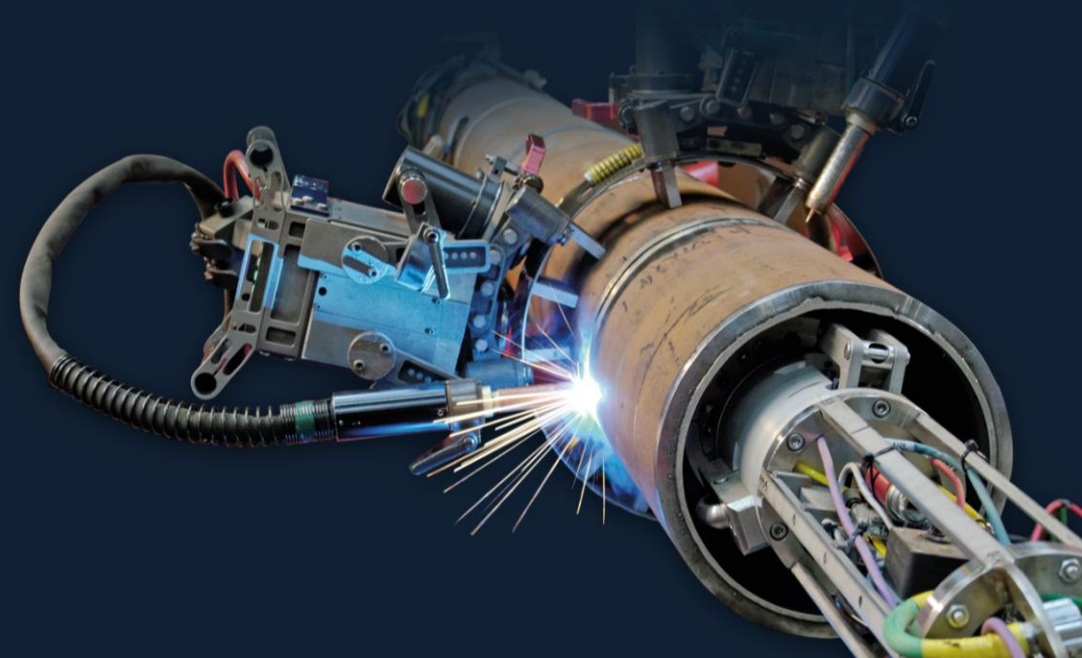
- **Non-Invasive Inspection (NII) of cathodic protection systems in pipelines: 6 solutions** – enabled investment opportunities / future roadmaps
- **Realtime detection of wax, asphaltene and hydrate accumulation in pipelines: 10 solutions** – development programme



# .... **LEADING EDGE WELDING TECHNOLOGY:**

## **4 Recently closed challenges:**

- Control of Weld Start/Stops in Pulsed Gas Metal Arc Welding: 3 solutions**
- Fully Automated Inspection of Girth Welds in Metallic Pipelines: 11 solutions**
- Tagging and Identification of Components in Harsh Environments: 9 solutions**
- Automated Clamping of Pipelines for welding: 1 solution**



# COLLECTIVE INTELLIGENCE: SOLVING FUTURE NEEDS

**Carbon**  @Carbon · 23 May 2018

**Carbon** "We are scaling a production. The plan will put us as the (world's) biggest producer of 3D-printed products." — James Carnes, VP of strategy creation, @adidas. Read more by @AndriaCheng via @forbes: [bit.ly/2GIPgPO](https://bit.ly/2GIPgPO)



**APWORKS GmbH** @AirbusApworks · 23 Feb 2018

**APWORKS** "Spotlight - 3D printed front-end structure" out of Scalmalloy®. An article about the #3iprint project in the Lightweighting World worth reading! [ow.ly/aT4s30izyVT](https://ow.ly/aT4s30izyVT)



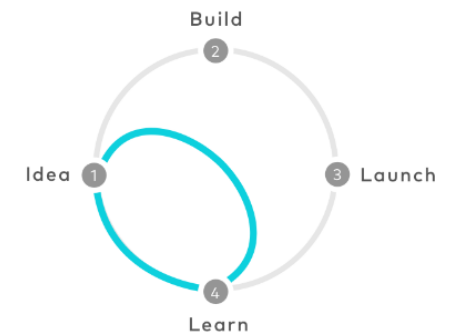


# CREATING THE FUTURE: A MINDSET FOR CHANGE



**CORNELL  
TECH**

**scruminc.**



"A mind that is stretched by a new experience can **never go back to its old dimensions.**"  
(Holmes, 1858).

# OVERCOMING DIFFICULTIES: BUILDING A SENSE OF URGENCY







# THANK YOU



subsea 7