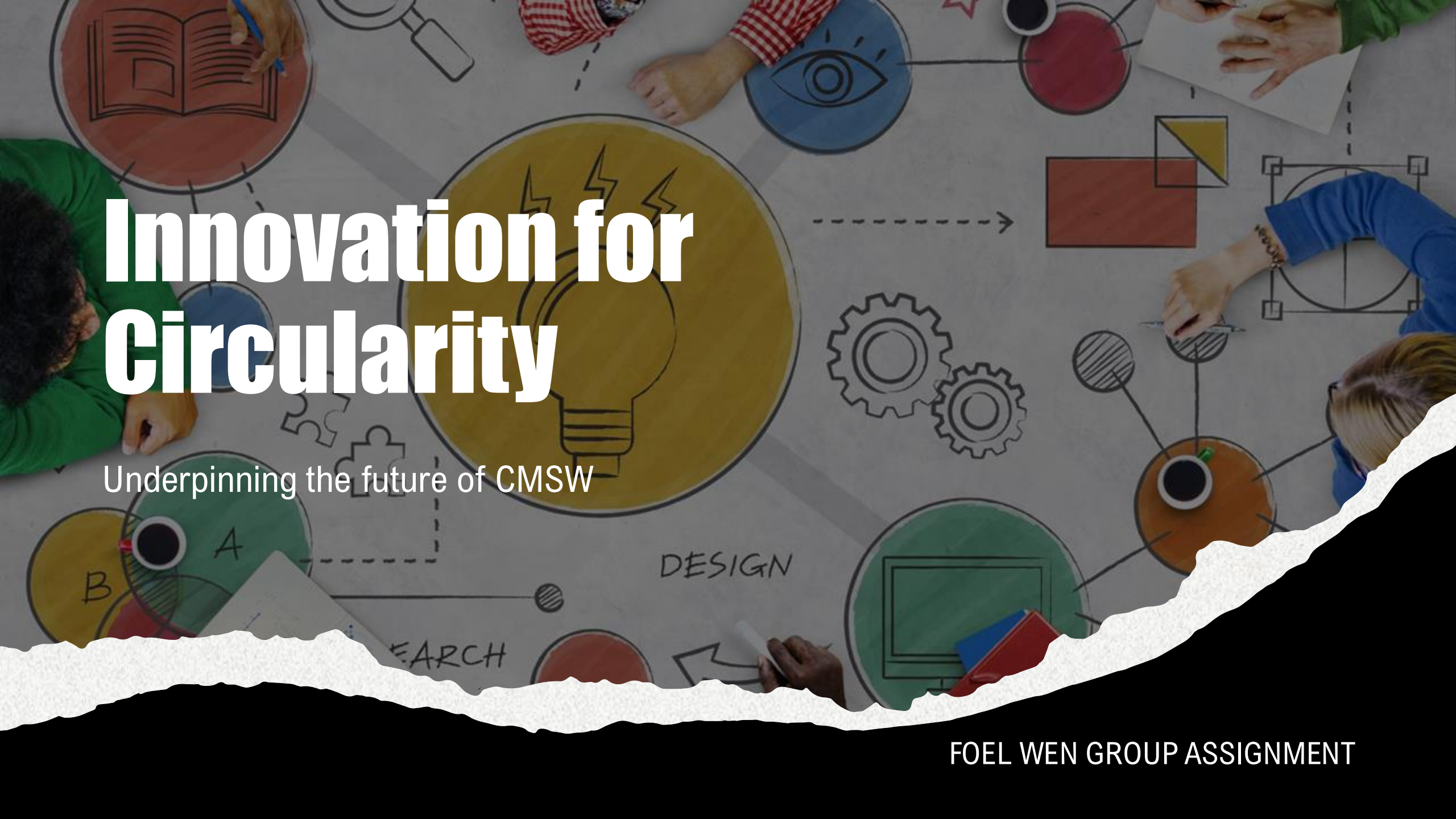




Innovation for Circularity

Underpinning the future of CMSW

FOEL WEN GROUP ASSIGNMENT

A Global Reflective Review of Innovative Undertakings and Activities



A 3D illustration of a multi-helix model. It features several thick, blue, glossy ribbons that twist and loop around each other. Interspersed among these ribbons are numerous green, glossy spheres of varying sizes. The background is a smooth gradient from light yellow at the top to a slightly darker yellow at the bottom. The overall composition is dynamic and suggests a complex, interconnected system.

Innovation Management across different sectors in multi-helix models



Innovation lessons from Global Companies

Symbol	Price	Change	Volume
SPY	145.27	+0.15	102,638
FCHI	26.49	+0.12	101,482
MAN	185.82	+6.25	19,876
C	145.27	+0.15	102,638
THMD	26.49	+0.12	101,482
EA	185.82	+6.25	19,876
UGR	145.27	+0.15	102,638
MMST	26.49	+0.12	101,482
ZUR	185.82	+6.25	19,876
TOLE	145.27	+0.15	102,638
AVG VOL	102,638		

A photograph of an airplane cabin interior, showing rows of dark leather seats and oval windows. The text "Aerospace inspiration from Airbus" is overlaid in white. The lighting is warm and focused on the seats.

Aerospace inspiration from Airbus

Airbus 'Our Purpose'

We pioneer sustainable
aerospace for a safe and united
world

AIRBUS

Airbus collaboration makes innovation fly

Collaborative governance enables stakeholder engagement and high performance.

Collaboration with suppliers is a strategic issue in fostering sustainable growth.

Multifunctional teams enhance the quality of the decision-making process.

Multifunctional teams are a key success factor of open social innovation projects.

Cultural and organizational diversity produces original and disruptive ideas

ALLAL-CHÉRIF, O., GUIJARRO-GARCIA, M. and ULRICH, K., 2022. Fostering sustainable growth in aeronautics: Open social innovation, multifunctional team management, and collaborative governance. *Technological forecasting & social change*, **174**, pp. 121269.



An in-depth study of Airbus - 'Takeaways'

The most important resource to be mobilized in social open innovation is the knowledge of a firm's employees, partners, and stakeholders

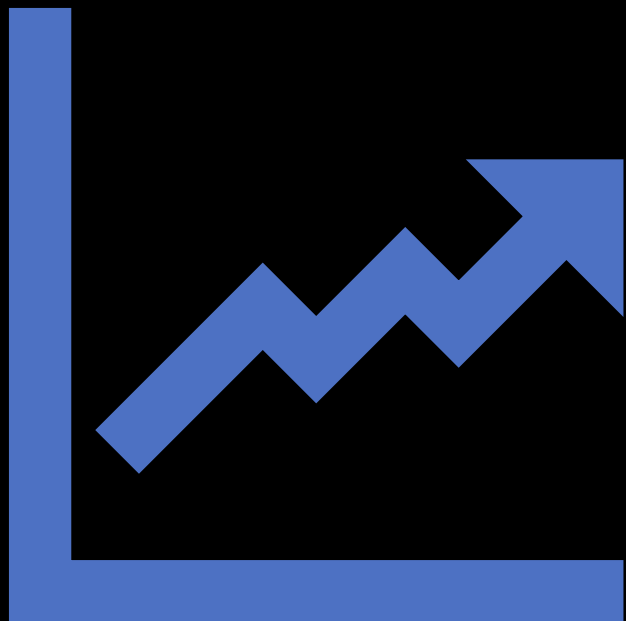
Multifunctional teams require a participatory culture that encourages employees to collaborate and share their ideas

Cross-sector partnerships are evolving to create more public and private value and achieve the United Nation's Sustainable Development Goals

(ALLAL-CHÉRIF, O., GUIJARRO-GARCIA, M. and ULRICH, K., 2022)

An aerial, high-angle photograph of a white Airbus A380-800 aircraft on an asphalt tarmac. The aircraft is oriented diagonally from the bottom left towards the top right. It features two large red engines mounted under the wings. Yellow taxi lines are visible on the ground, including a prominent double yellow line that runs parallel to the aircraft's fuselage. The aircraft's shadow is cast onto the tarmac to its right. The text 'The triple 'A': Airbus, Ansys & Autodesk' is overlaid in a large, bold, white sans-serif font across the center of the image.

The triple 'A': Airbus, Ansys & Autodesk



**Generative
design boosts
productivity**

Airbus uses generative design to reduce CO2 emissions

AUSTIN-MORGAN, T., 2022-last update, Airbus has moved from generative design of components to the factories in which they are built.

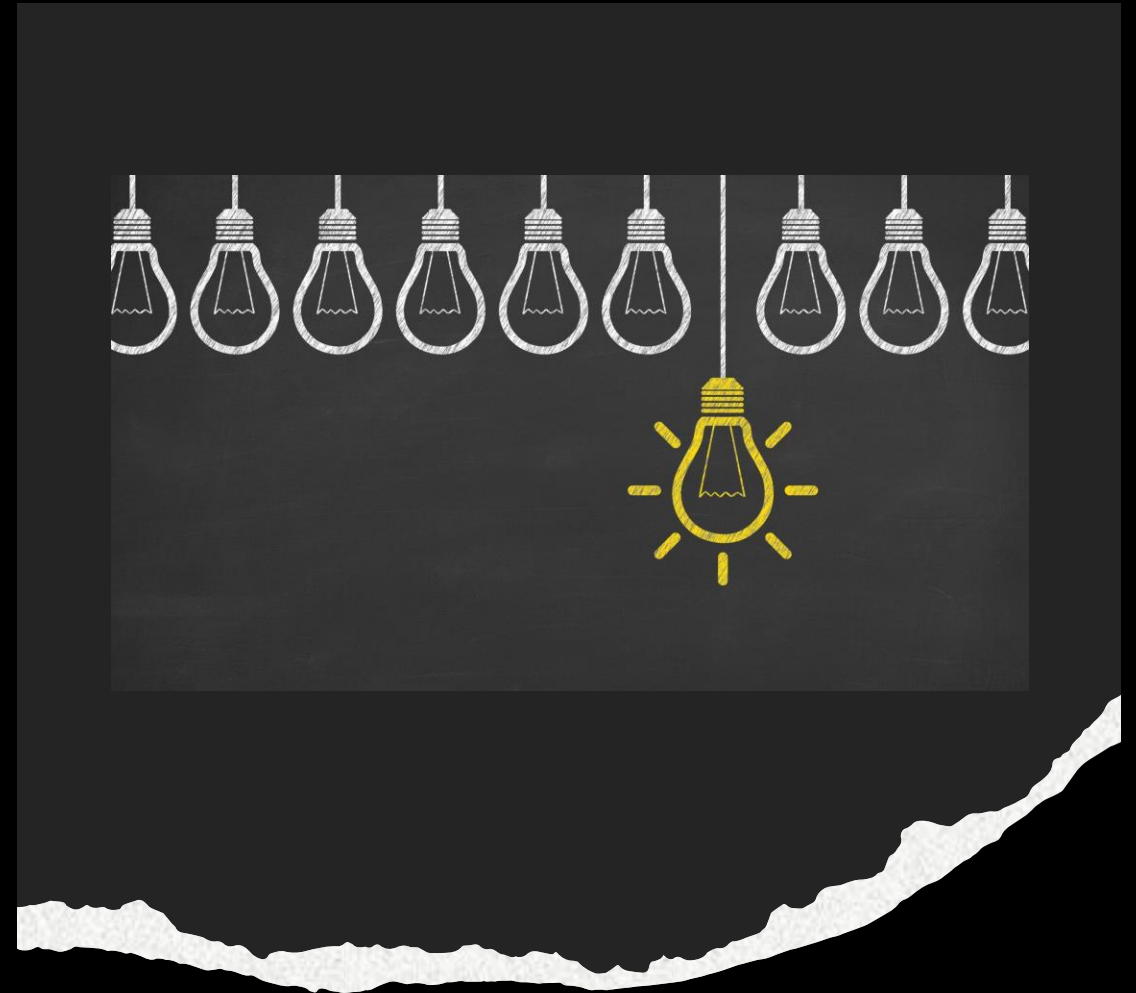
Available: <https://www.eurekamagazine.co.uk/content/technology/airbus-has-moved-from-generatively-designing-components-to-the-factories-in-which-they-are-built/> [20 Nov, 2022].

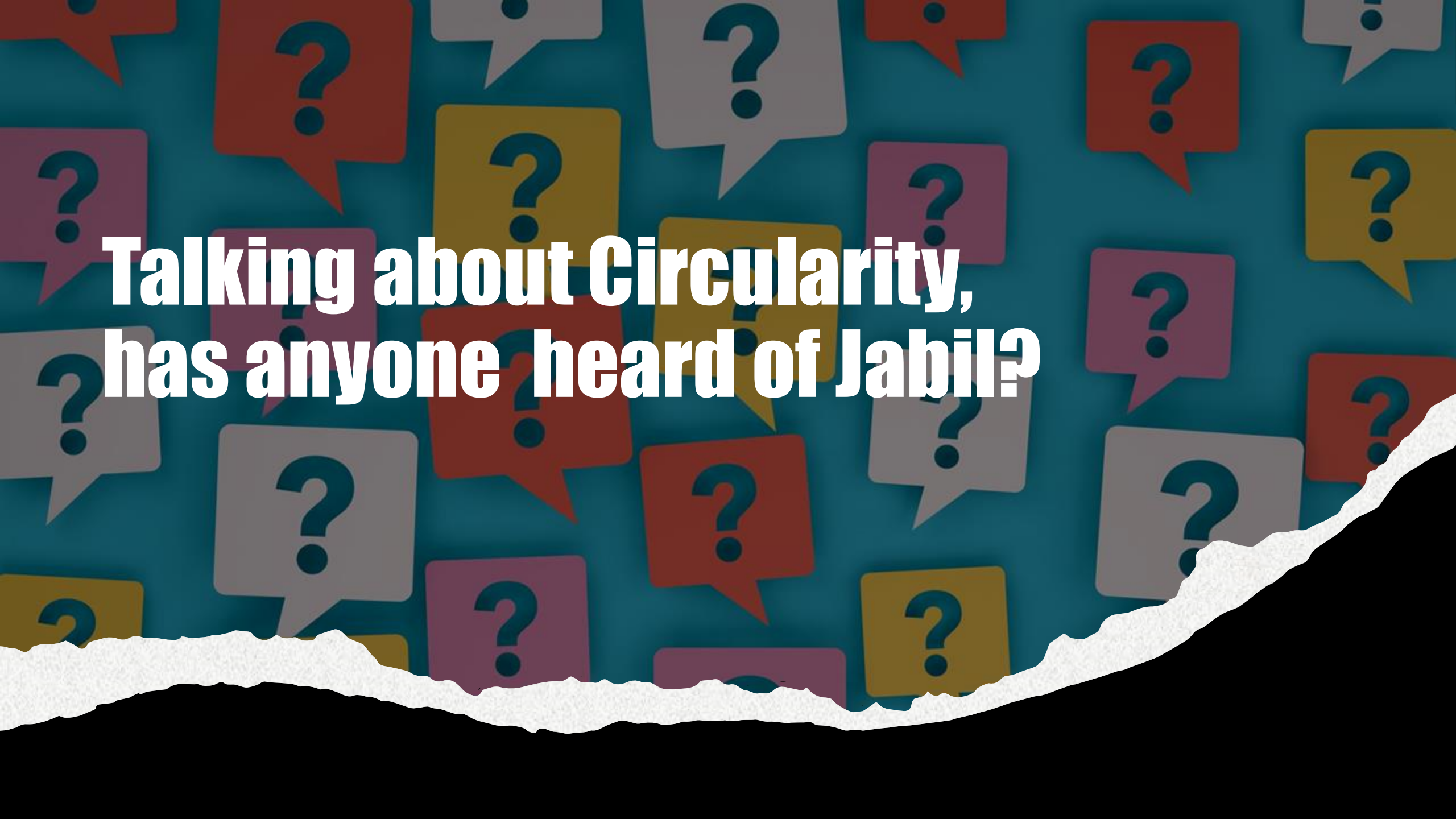


Airbus open source Why?

- The aviation industry is considered one of the highest polluting sectors within the modern world
- Airbus has suffered with cash flow as a result of Covid 19 pandemic So how do we fix this without investing more and more cash flow
- Open-source innovation supports the reduction of pollution caused by aviation industry this in turn has attracted investment and support of the European Union
- New innovations that can help reduce the carbon output that is to the benefit of all companies within the EU. This innovation system allows for improved carbon neutral timing

ALLAL-CHÉRIF, O., GUIJARRO-GARCIA, M. and ULRICH, K., 2022. Fostering sustainable growth in aeronautics: Open social innovation, multifunctional team management, and collaborative governance. Technological forecasting & social change, 174, pp. 121269.





**Talking about Circularity,
has anyone heard of Jabil?**



Tell us about Jabil then...

Global, SDG focused, >260,000 talented people, diversified, innovators.....

JABIL, 2022-last update, What Does Jabil Do.

Available: <https://www.jabil.com/about-us/what-does-jabil-do.html#809c369d-e7e0-45e3-a197-5961d58825b0> [20 Nov, 2022].

A close-up photograph of a person's hands holding a large, round, woven bag. The bag is covered in intricate beadwork, featuring a central panel of horizontal stripes in orange, yellow, and red, and a lower section of green and blue. The background shows a patterned fabric with geometric shapes in yellow, red, and black. The text "Jabil – a Global Vision and Purpose" is overlaid in white, bold, sans-serif font across the center of the image.

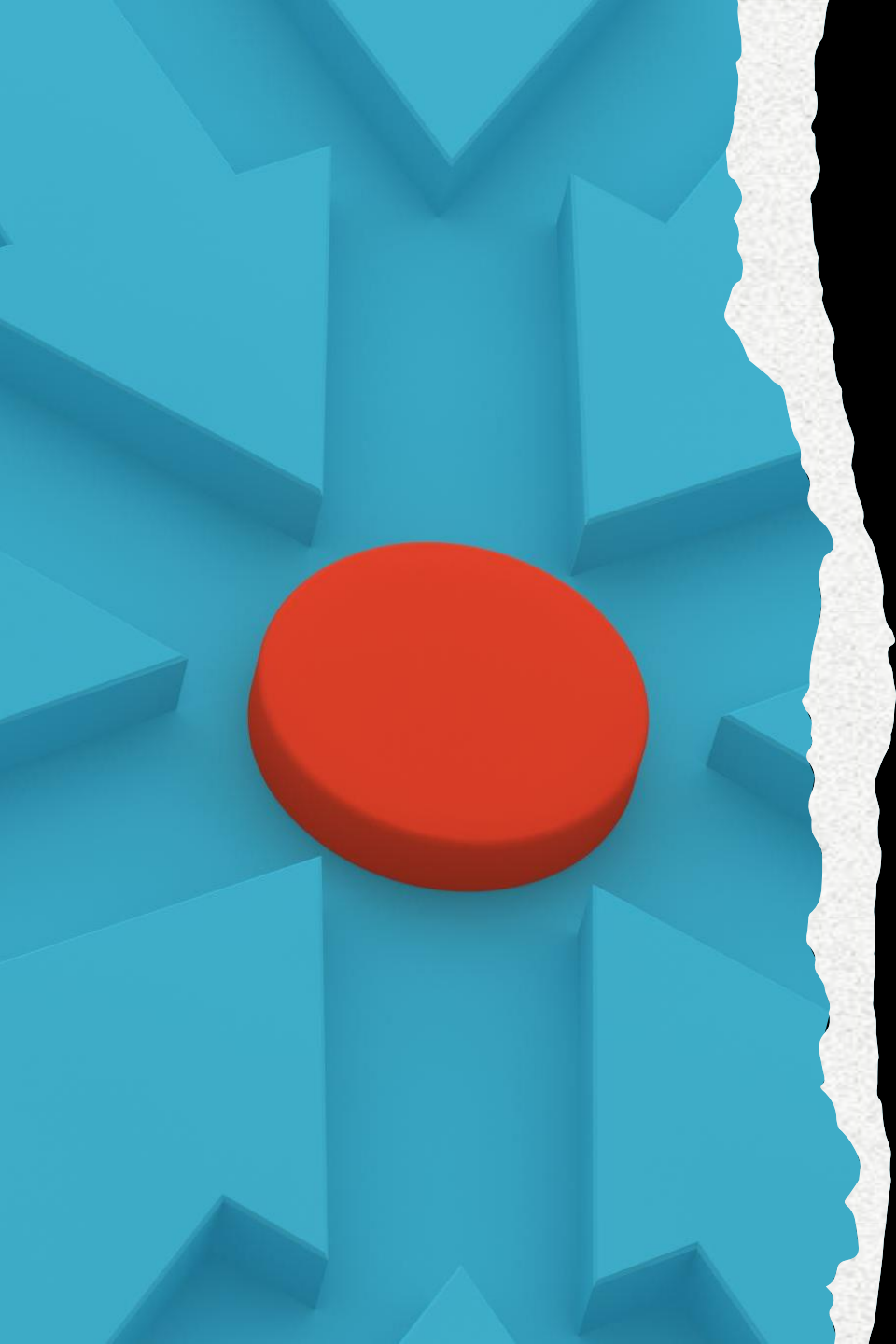
Jabil – a Global Vision and Purpose

Global Purpose – Enabling Success for the world's leading brands

At Jabil we strive to make ANYTHING POSSIBLE and EVERYTHING BETTER. With over 260,000 diverse, talented and dedicated employees across 100 locations in 30 countries, our vision is to be the most technologically advanced and trusted manufacturing solutions provider. We combine an unmatched breadth and depth of end-market experience, technical and design capabilities, manufacturing know-how, supply chain insights and global product management expertise to enable success for the world's leading brands. We are driven by a common purpose to make a positive impact for each other, our communities, and the environment.

JABIL, 2022-last update, What Does Jabil Do. Available: <https://www.jabil.com/about-us/what-does-jabil-do.html#809c369d-e7e0-45e3-a197-5961d58825b0> [20 Nov, 2022].





By intentionally designing for circularity from the beginning and throughout the production process, we reduce contaminants and avoid materials that are difficult to remove for reuse and recycling, such as screws, bolts and glue. Instead, we help our customers rethink their assembly processes to include materials like shape-memory resins for lighter, stronger and infinitely more sustainable products. Additionally, we help our customers design with modularity in mind so a product's individual materials and components can be upgraded as newer technologies are developed and the complete product can be easily disassembled at the end of its life.

JABIL, 2022-last update, Circular Economy Solutions.

Available: <https://www.jabil.com/solutions/circular-economy-solutions.html> [20 Nov, 2022].

Jabil - Circular Economy

What might CMSW learn from Jabil?

Manufacturer Capabilities	Jabil	CMSW	Notes
Polymers	Yes	Yes	JABIL, 2022-last update, Custom Engineered Materials. Available: https://www.jabil.com/services/additive-manufacturing/engineered-materials.html [20 Nov, 2022].
Metals	Yes	Yes	JABIL, 2022-last update, Misgav. Available: https://www.jabil.com/contact/locations/misgav.html [20 Nov, 2022].
Fabrics/Textiles	Yes	Yes	JABIL, 2022-last update, RECOVERY FORCE. Available: https://www.jabil.com/dam/jcr:79c352d9-0094-4c94-af0e-39a0b2393850/jabil-recovery-force-case-study.pdf [20 Nov, 2022].
Composites	Yes	Yes	JABIL, 2022-last update, JABIL ENGINEERED MATERIALS. Available: https://www.jabil.com/dam/jcr:eea3efb9-e1c2-4db6-8d68-57627d9a68ff/475937846-JEM%20Brochure.pdf [20 Nov, 2022].
Flexible Hybrid Electronics	Yes	???	JABIL, 2022-last update, Printed and Flexible Hybrid Electronics. Available: https://www.jabil.com/solutions/printed-electronics.html [20 Nov, 2022].
Develop and certify new materials	Yes	???	What opportunities might result from this capability?
Digital Twins	Yes	???	GAMOTA, D., 2022-last update, Digital Twins [Homepage of JABIL], [Online]. Available: https://www.jabil.com/blog/how-digital-twins-lead-to-manufacturing-profitability.html [20 Nov, 2022].



Are we seeking to leverage CMSW's strong National Brand Internationally?

WHY ASK?

BECAUSE: THERE IS AN 'ADJACENT POSSIBILITY'

Jabil combine an unmatched breadth and depth of end-market experience, technical and design capabilities, manufacturing know-how, supply chain insights and global product management expertise to enable success for the world's leading brands.



**What might
collaboration with a
Global partner like
Jabil lead to?**

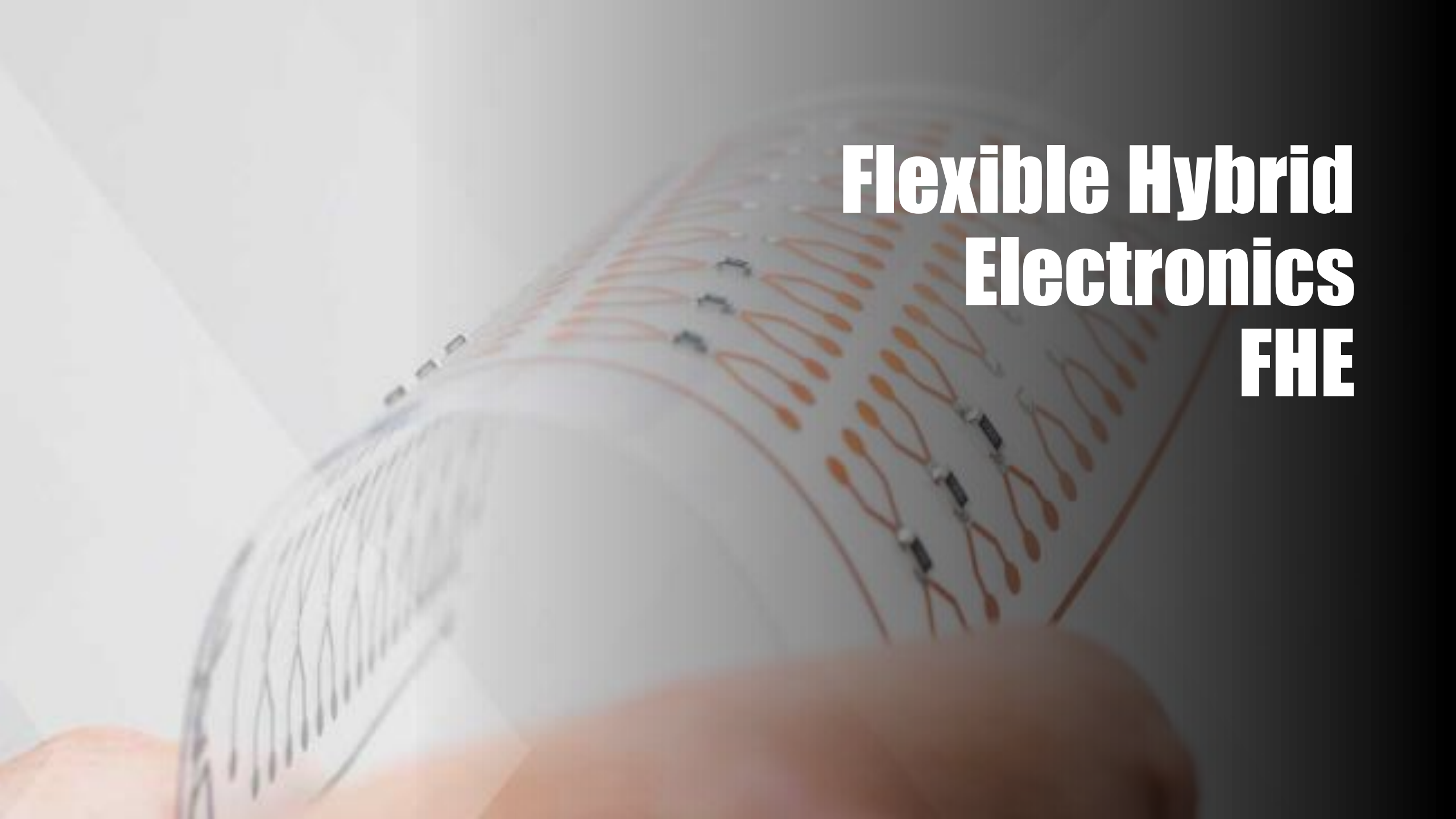
Key Questions include:

Could Jabil help CMSW to leverage its valuable brand internationally?

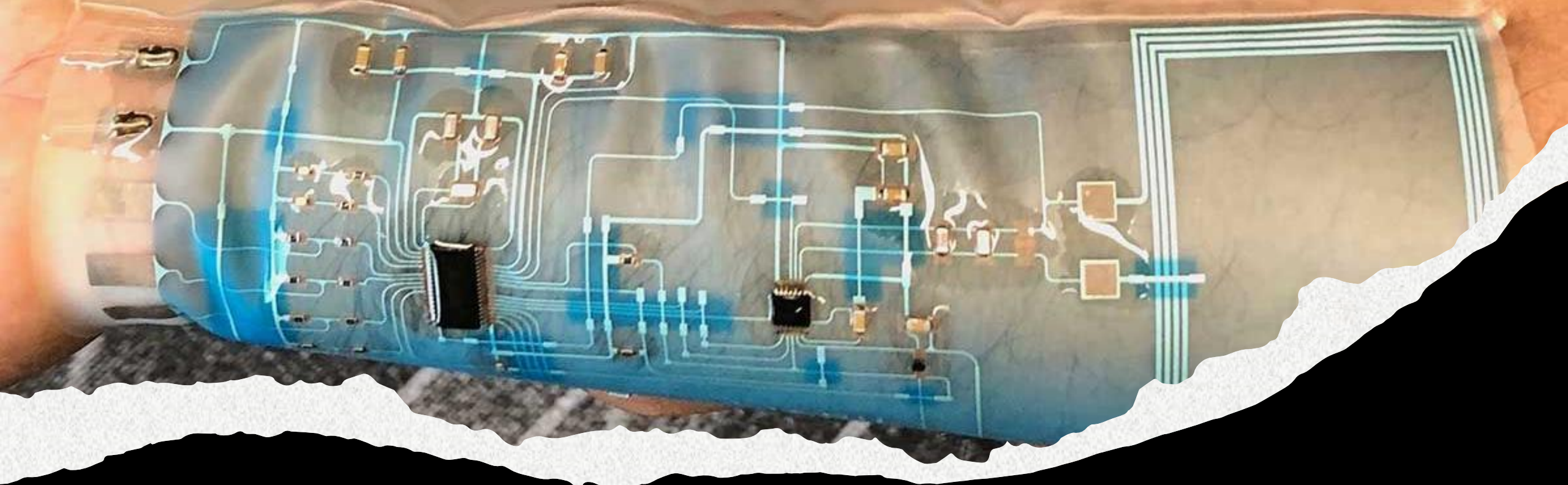
Is there scope for two-way collaboration with CMSW providing Jabil with manufacturing capacity in Wales?

What technologies could Jabil **add to** CMSW's '**innovation pallet**' enabling immediate added value generation?

What new materials might be generated to enhance CMSW's customer offering?

A close-up photograph of a flexible hybrid electronics strip. The strip is white and curved, showing a dense array of small, dark electronic components (likely transistors or diodes) and intricate orange and black circuit traces. A person's fingers are visible at the bottom, bending the strip to demonstrate its flexibility. The background is a soft, out-of-focus grey.

Flexible Hybrid Electronics FHE



Wearable Sensors = New Possibilities

FHE creates a new category of electronics by combining the flexibility and low cost of printed traces and devices on plastic film substrates, which are stretchable and conformable, with the high performance of low-profile semiconductor chips. As such, they offer creative options for integrating electronics into everything from products that capture data on an individual's physiological condition to embedded systems that perform continuous monitoring or “structural health checks” on planes, trains, automobiles, roads, bridges and buildings.

GAMOTA, D., Jun 14, 2022-last update, Council Post: Designing Products For A Circular Economy With Digital Twins. Available: <https://www.forbes.com/sites/forbestechcouncil/2022/06/14/designing-products-for-a-circular-economy-with-digital-twins/> [Nov 20, 2022].

Circling back to Airbus

According to [the Alan Turing Institute](#), next-generation digital twins are advancing the field of aeronautics by supporting research in aerodynamics, applied mathematics and computational science. The results are significant improvements in the development of electric propulsion, more fuel-efficient aircrafts for commercial travel and the exploration of urban aerial taxis. In all these cases, the use of lightweight FHE is critical in producing more accurate digital twins that empower engineers to identify potential issues and modify product designs before any flight risks emerge.

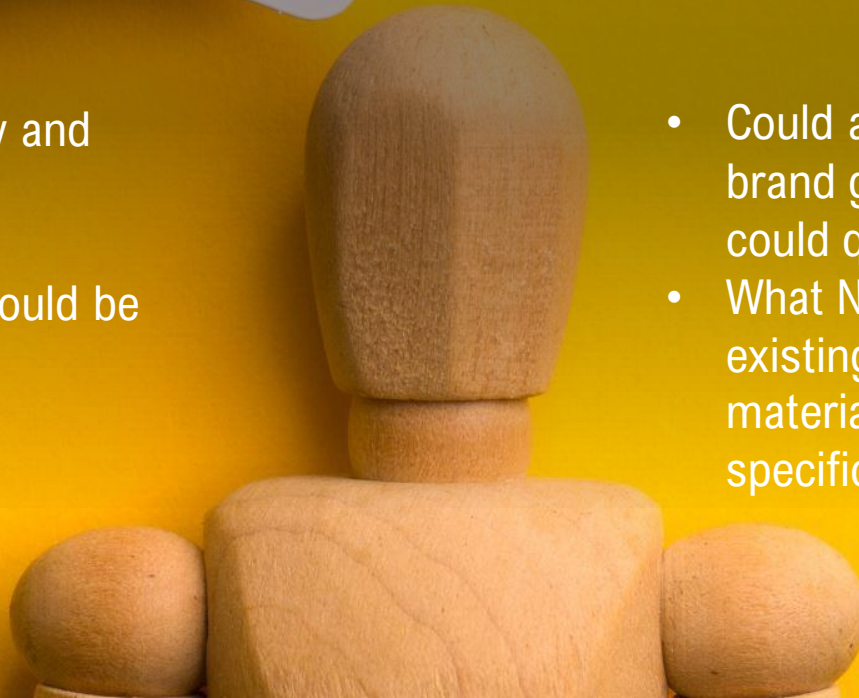
GAMOTA, D., Jun 14, 2022-last update, Council Post: Designing Products For A Circular Economy With Digital Twins. Available: <https://www.forbes.com/sites/forbestechcouncil/2022/06/14/designing-products-for-a-circular-economy-with-digital-twins/> [Nov 20, 2022].





What does all this mean for CMSW? A quick recap

- Collaboration offers new and unique possibilities
- Airbus style open social innovation could and should be carefully considered
- Could a company such as Jabil leverage CMSW's brand globally? With a presence in 30 countries this could quickly open doors
- What NPD opportunities exist within CMSW's existing customer base for introducing new materials which are developed and certified for specific applications and carry the CMSW brand?



**Keeping things more
local - is this an
option?**





About CPI

From innovation to commercialization

CPI acts as a catalyst bringing together academia, businesses, government and investors to translate bright ideas and research into the marketplace. We do this by giving our customers access to the right experts, equipment, networks, funding and more – connecting the dots for effective innovation.

CENTRE FOR PROCESS INNOVATION, 2022-last update, CPI. Available: <https://www.uk-cpi.com/about> [20 Nov, 2022].



What local resources are available?

Innovation support is available via government programs such as:

- SMART Cymru - Innovation RD&I Team, Welsh Government (BUSINESS WALES, 2022-last update, SMARTCymru. Available: <https://businesswales.gov.wales/expertisewales/support-and-funding-businesses/smartcymru> [20 Nov, 2022].)
- AMRC – AMRC CYMRU, 2022-last update, AMRC Cymru. Available: <https://www.amrc.co.uk/facilities/amrc-cymru-wales> [20 Nov, 2022].
- Digital Manufacturing Innovation Hub Wales - DMIW, 2022-last update, Digital Manufacturing Innovation Hub Wales. Available: <https://www.dmiw.co.uk/about-dmiw/> [20 Nov, 2022].
- UK Research and Innovation (UKRI) - UKRI, 2022-last update, UKRI Home Page. Available: <https://www.ukri.org/> [20 Nov, 2022].
- Innovation Funding Service (Competitions) – INNOVATION FUNDING SERVICE - UK GOVERNMENT, 2022-last update, Innovation Funding Competitions. Available: https://apply-for-innovation-funding.service.gov.uk/competition/search?_ga=2.184323942.150238581.1668972769-567521751.1668972769 [20 Nov, 2022].
- MADE Cymru UWTSD - MADE CYMRU, 2022-last update, MADE Cymru. Available: <https://www.madecymru.co.uk/> [20 Nov, 2022].



Using what you have to innovate??

With Covid stalling the aviation market most aerospace companies mothballed their operations until they were able to resume operations But not Rolls Royce

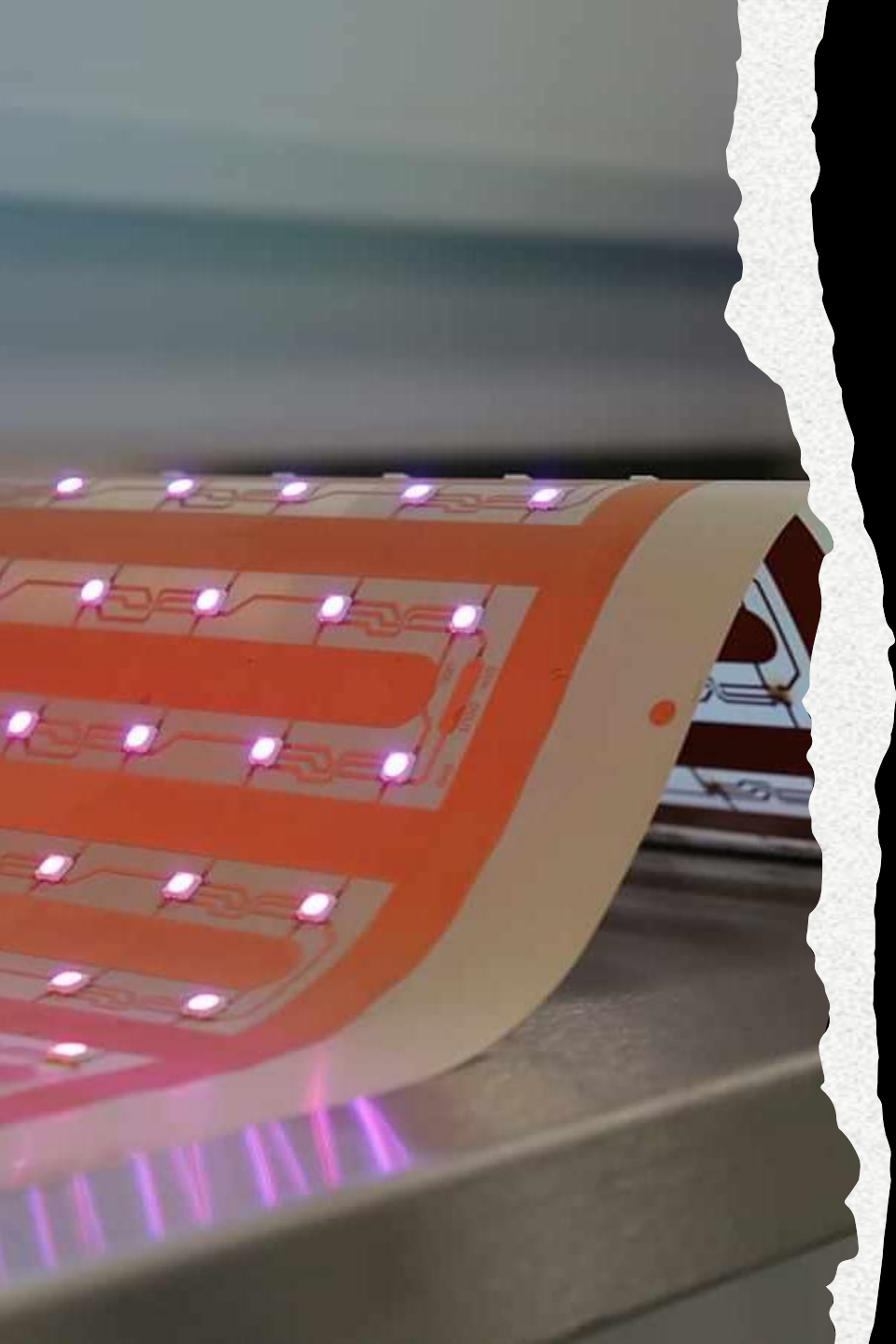
Senior management commissioned a review of the employees' skills and development capabilities

This revealed several parallel markets, and this led senior management to look at..... Nuclear

Rolls Royce utilised the engineers who were now available to develop a nuclear power plant

ROLLS ROYCE, 2022-last update, Small Modular Reactors.

Available: <https://www.rolls-royce.com/innovation/small-modular-reactors.aspx#/> [22 Nov, 2022].



Flexible Hybrid Electronics

End-to-end capabilities

Our world-class, unique capabilities allow us to offer end-to-end support for your project, from design right through to prototyping and scale up of your electronics products. By bringing you complementary resources, we ensure you have everything you need to produce new products or bring flexibility to your electronic application. Additionally, we can support you with applications such as sub-systems for integration into wearables or distributed sensor systems for the IoT. We can also design and manufacture, at scale, products such as smart labels, smart tags, and smart cards for use in applications such as smart packaging.

CPI, 2022-last update, Flexible Hybrid Electronics | CPI. Available: <https://www.uk-cpi.com/capabilities/flexible-hybrid-electronics> [Nov 20, 2022].

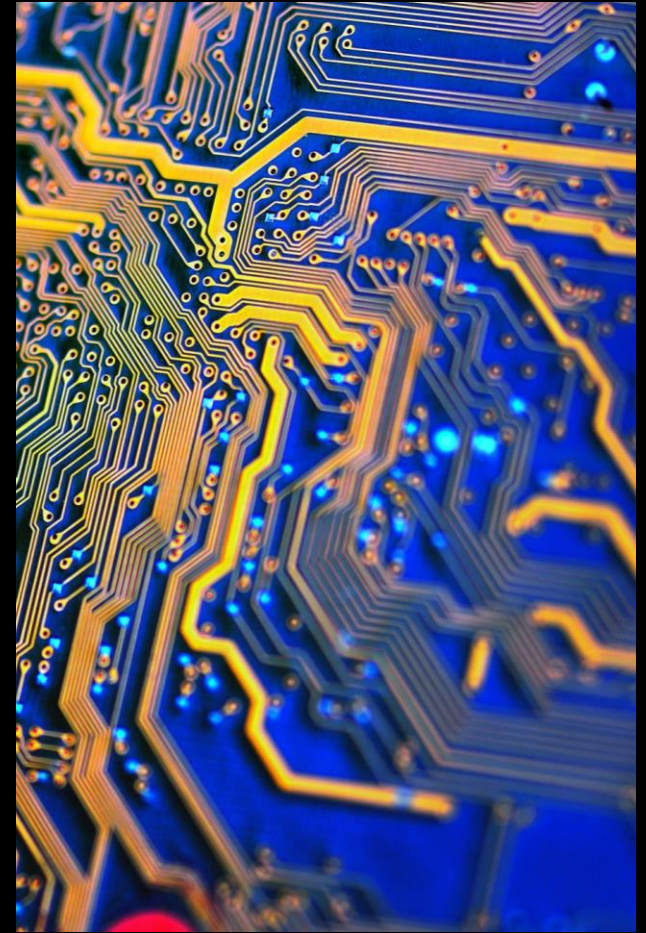
Innovation Lessons from organizations such as the OECD



OECD Review of Innovation Policy – Germany 2022

.....a new more agile and experimental approach to STI policy is needed. This Review outlines how to develop such an approach and what STI policies need to focus on: create markets for future innovations, more significant and more risk-tolerant finance for innovation, inter-disciplinary knowledge exchange, improved data infrastructure and capabilities. Given the internationally shared challenges of dealing with transitions, the insights presented in the review will be of interest to policymakers, stakeholders and analysts from Germany and across the OECD.

OECD, 2022-last update, OECD Reviews of Innovation Policy: Germany 2022: Building Agility for Successful Transitions | READ online. Available: https://read.oecd-ilibrary.org/science-and-technology/oecd-reviews-of-innovation-policy-germany-2022_50b32331-en [Nov 21, 2022].



OECD aims to highlight the value of Social Innovation



Innovation lessons from Academia University of Birmingham in Dubai

Business Engagement

We are driving innovation through collaborative research partnerships with business. The University of Birmingham collaborates with organisations of all sizes, from global corporates to local SMEs. We are ready to form partnerships with business, to work on transformative projects and make important things happen.



University of Birmingham in Dubai - Catalyzing and Driving Collaboration

Our support for business varies depending on the industry collaborator, academic or project - there are no standard approaches. For organizations new to collaborating with the University, we establish industry visits, create detailed briefings and develop a holistic understanding of the business's challenge. We then translate academic concepts into industry-ready ideas.

UNIVERSITY OF BIRMINGHAM, 2022-last update, Our Services.

Available: <https://www.birmingham.ac.uk/dubai/business/collaborate-with-us.aspx> [Nov 20, 2022].



Reaping the rewards of innovation??

Despite Government led projects and ambitious targets for innovation the UAE has moved from 35th position on the Global innovation index in 2017 to 36th in 2019.

How do UAE improve this?

Investing in free zones for trade

Non-national ownerships

Allow net profit to move outside the UAE

Does all Innovation work??

- Expo city built for 25 million people
- Show ended 31st March
- Area vacant 1st April
- Huge infrastructure and investment without a long-term plan for occupation

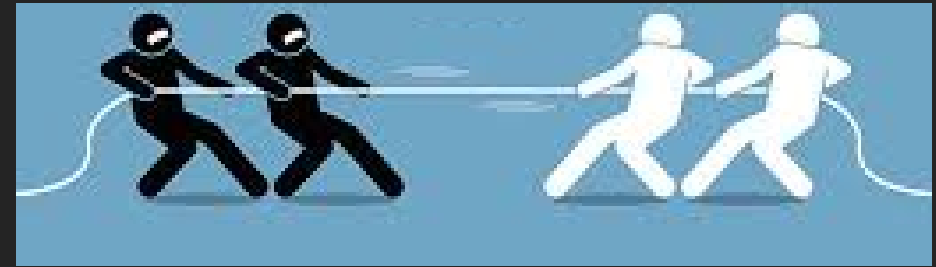


Conflict within innovation

Using the UAE as an example we can see a strong government led innovation strategy however, conflicting targets hinder the overall vision and success.

Sustainability goals while trying to increase tourism to 25 million people / year

Circular economy and environmental targets while growing autonomous technology.



Understanding Cultural Factors – University of Birmingham in Dubai

Understanding societal and cultural differences is a precursor to building sustainable collaborative partnerships

Some countries may have laws and traditions that cut across the 17 sustainable development goals (SDGs)

Understanding potential compromises is essential before launching into new international markets which require a local presence

Lessons from a Development Agency?

- The Canadian State of Alberta has a population of 4.2 million and benefits from a dedicated Innovation Development Agency
- Looking at how this Agency functions provides some insight into who are the key innovation actors and catalysers in Wales



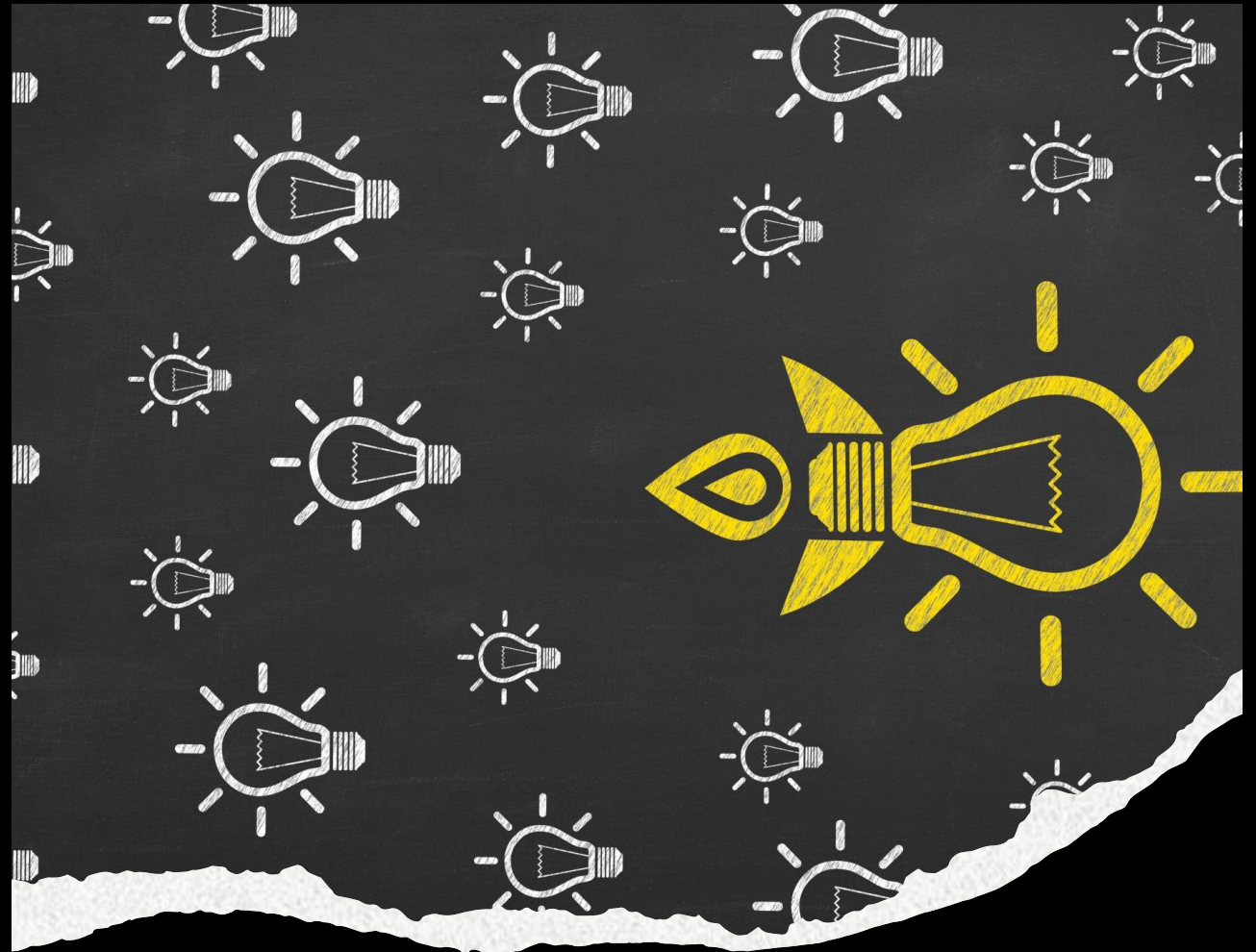
Innovation in action

"Alberta Innovates is the province's largest research and innovation agency. From funding to commercialization, we are Alberta's innovation engine.

We are working to solve today's challenges, create new opportunities and forge a healthy, sustainable and prosperous future for Albertans today and for generations to come.

We are where innovation happens, and we touch every corner of the province for the benefit of all Albertans."

ALBERTA INNOVATES, 2022-last update, Alberta Innovates - the province's full-service innovation engine.
Available: <https://albertainnovates.ca/> [Nov 20, 2022].





Our Purpose?



**We will prosper when we are
passionate about our Purpose**

Forbes Under 30s

OECD, 2022-last update, OECD Reviews of Innovation Policy: Germany 2022: Building Agility for Successful Transitions | READ online. Available: https://read.oecd-ilibrary.org/science-and-technology/oecd-reviews-of-innovation-policy-germany-2022_50b32331-en [Nov 21, 2022].

Purpose – the pathway to prosperity



The Entrepreneur Who Built
Electric Vehicle Company
Millions Before Age 30



To Modernize America's Freight Industry, This Entrepreneur Took An Untraditional Approach

Forbes Under 30s

FORBES, 2022-last update, To Modernize America's Freight Industry, This Entrepreneur Took An Untraditional Approach.

Available: <https://www.forbes.com/video/6284569667001/to-modernize-americas-freight-industry-this-entrepreneur-took-an-untraditional-approach/> [Nov 21, 2022].

Understanding the problem is the key to finding a solution



A Simple Idea Can Be Transformational

"Don't seek perfection. Seek balance. Seek consistence. Seek justice. Seek passion. Seek a cause for humanity, and your life shall have meaning"

HANSEN, K., Sep 21, 2022-last update, Wednesday Keynote Derreck Kayongo: A Simple Idea Can Be Transformational. Available: <https://icma.org/articles/article/wednesday-keynote-derreck-kayongo-simple-idea-can-be-transformational> [Oct 29, 2022].

What's occurring?

Future thinking leaders





**What might be
possible?
Keep watching,
listening and
learning**

Data-centric engineering.....

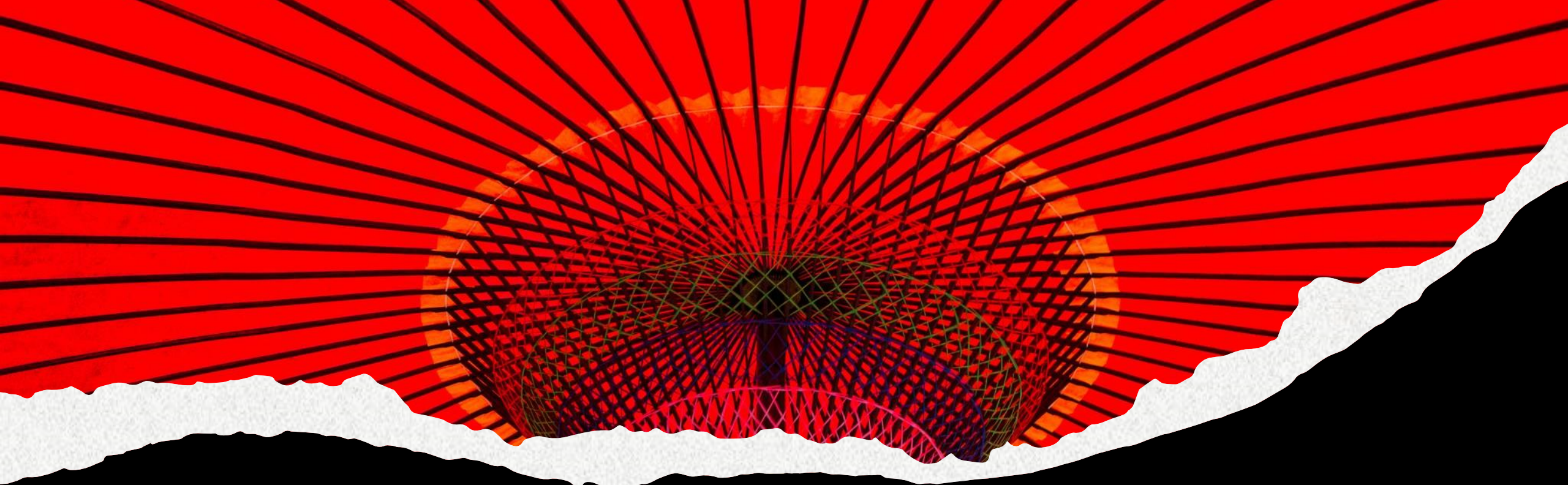
THE ALAN TURING INSTITUTE, 2022-last update, Digital twins in aeronautics.
Available: <https://www.turing.ac.uk/research/research-projects/digital-twins-aeronautics> [Nov 3, 2022]



Internet of Things - Trends to be aware of



<https://youtu.be/d7Rd6UgcrWo>



If necessity is the mother of invention

.....then perhaps we should consider what is
necessary

Given energy price rises, how resilient is our
supply chain and how will our customers cope?

What can be done to support our business
ecosystem?



Or is empathy the mother of invention?

"When given the opportunity to use and talk about emotions and see other people's perspectives, the creative process becomes more complete"

DEMETRIOU, H. and NICHOLL, B., 2022. Empathy is the mother of invention: Emotion and cognition for creativity in the classroom. *Improving schools*, 25(1), pp. 4-21.

Global cultural and political differences



Global business challenges

- Language Barrier
- Currency and inflation
- Cultural variations
- Geopolitics and foreign policies
- Compliance issues
- New market competition
- Environmental issues
- Managing a global team
- Supply chain risk
- Time zone challenges



Cultural factors positively affecting Innovation

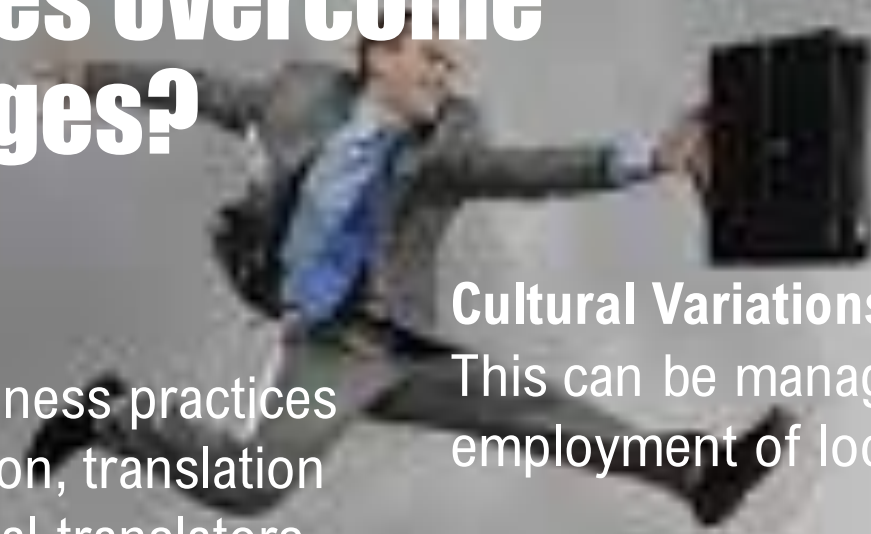
- Low power distance, for it increases access to communication and knowledge among hierarchical levels, enabling more innovations;
- Individuals who are not intimidated by creating and executing ideas in front of a group;
- Environments that provide collaboration instead of competition, in order to gather knowledge and, consequently, generate innovations;
- Individuals with stronger entrepreneurial character to face uncertainties and to take risks when implementing innovative ideas;
- Long-term mindset, i.e. preparing citizens through education for a promising future;
- An environment free from pressure and oppression and prioritizing life quality, only then individuals will be more willing to innovate. ESPIG, A., MAZZINI, I.T., ZIMMERMANN, C. and DE, C.L.C., 2021. National culture and innovation: a multidimensional analysis. *Innovation & Management Review*, ahead-of-print(ahead-of-print),.



The background is a complex, abstract fractal pattern in shades of teal, blue, and black. It features intricate, branching, and swirling lines that create a sense of depth and movement. A bright, glowing light source is visible on the right side, casting a strong beam of light across the scene and illuminating the fractal structures. The overall effect is one of dynamic energy and complexity.

**Today's universal
challenges
facing
businesses**

How do businesses overcome common challenges?

A man in a business suit is running across a large gap, holding a briefcase. The background is a misty, mountainous landscape, suggesting a challenging journey or overcoming obstacles.

Language Barrier

With the changing of global business practices typical solutions include education, translation software, employment of bilingual translators.

Cultural Variations

This can be managed via education, and the employment of local personnel.

Currency and inflation

Global currency and inflation is typically managed via pricing adjustments and contracts. Risks can further be reduced via local purchasing and manufacturing.

Geopolitics and foreign policies

This can include such issues as trade embargo's, import taxation, limitation of sales (such as ITAR) etc. Mitigation via careful research and close relationship with the perspective governing bodies

How do businesses overcome common challenges?

A person in a business suit is shown in mid-air, jumping over a cliff. They are holding a briefcase in their right hand. The background is a misty, mountainous landscape.

Compliance Issues

Each global area has its own standards (BS, ISO, ANSI etc). Consideration for compliance is needed

Environmental Issues

Each country have different environmental standards. While typical countries in the EU are working towards net 0 emerging markets don't have the same limitations

Managing a global team

Ensuring clear company objectives are communicated to all teams. This can further be improved by regular communications across all teams

Supply chain risk

Using globally sourced parts can often benefit from improved pricing however, recent events have exposed failings in the supply chain. (War, natural disaster, plague, distribution routes, political issues)

The background is a complex fractal pattern. It features a dark blue base with intricate, branching structures in a vibrant orange and lighter blue. These structures resemble stylized, swirling flames or perhaps a microscopic view of a mineral formation. The overall effect is one of dynamic energy and organic complexity.

Innovation lessons learned

CMSW's strategy has resulted in a successful brand that boasts customers confidants and commercial success to date So why change anything?

As toys r us learned innovation isn't always child's play!

At its peak Toys-r-us boasted a turnover of \$11.5 billion / year!

Seeing such success from this business model senior management refused to embrace any new innovations however, their competition (Amazon, Ebay, etc) were. This lack of innovation resulted in bankruptcy in 2017.



Mott Macdonald Innovation Management

- Act on data not speculation
- Targeted market analysis
- Market analysis displaying obvious but hidden facts
- Reveal unforeseen consequences to plan such as social impacts etc..
- In short “work smarter not harder”



Why we're here

Our purpose is to improve society by considering social outcomes in all we do, relentlessly focusing on excellence and digital innovation, transforming our clients' businesses, our communities and employee opportunities.

Engineering. Management. Development.

Mott MacDonald 'Our Purpose'

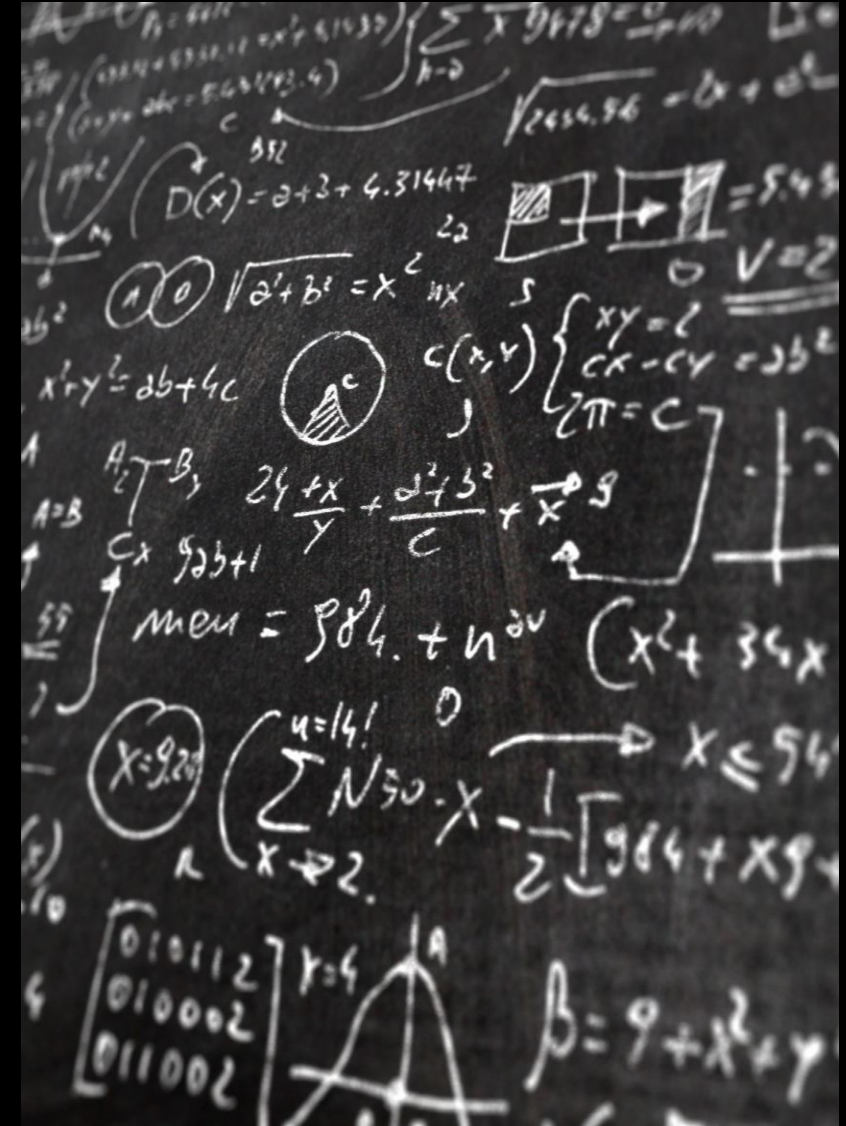
mottmac.digital

We deliver social, economic and environmental value by connecting innovation to outcomes. All powered by our technology platform Moata.

Future Focused Leaders Mathematical Corporation

We are at a once-in-a-decade breaking point, similar to the quality revolution of the 1980s and the dawn of the internet age in the 1990s, where leaders must transform how they run their organizations, or competitors will bring them crashing to earth, and, in many cases, almost overnight. Mathematical corporations – the organizations that will master the future – will outcompete high-flying rivals by merging the best of human ingenuity with machine intelligence. While smart machines are weapon number one for organizations, leaders are still the drivers of breakthroughs. Only they can ask crucial questions to capitalize on business opportunities newly discovered in oceans of data. This dynamic combination will make possible the fulfillment of missions that once seemed out of reach, even impossible to attain.

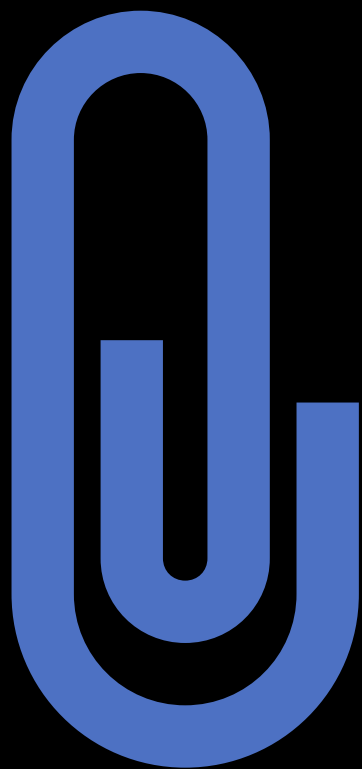
Benraouane, Sid Ahmed, and H. James Harrington. *Using the ISO 56002 Innovation Management System : A Practical Guide for Implementation and Building a Culture of Innovation*, Productivity Press, 2021. ProQuest Ebook Central, <http://ebookcentral.proquest.com/lib/trinity/detail.action?docID=6610875>.



Essential Ingredients

8 Principles



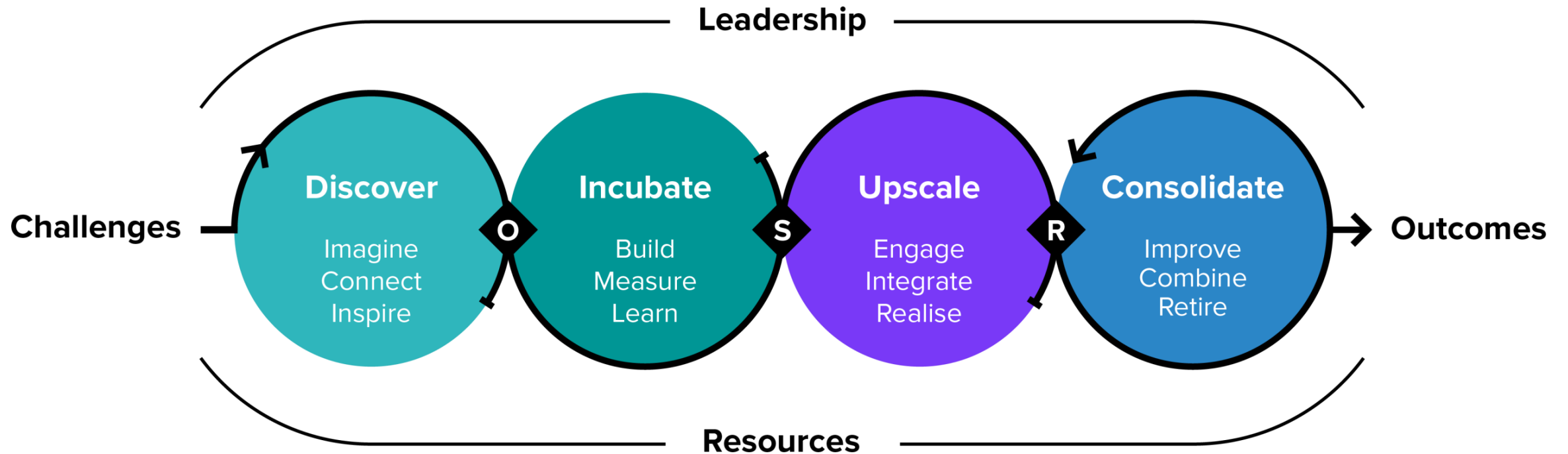


Appendices

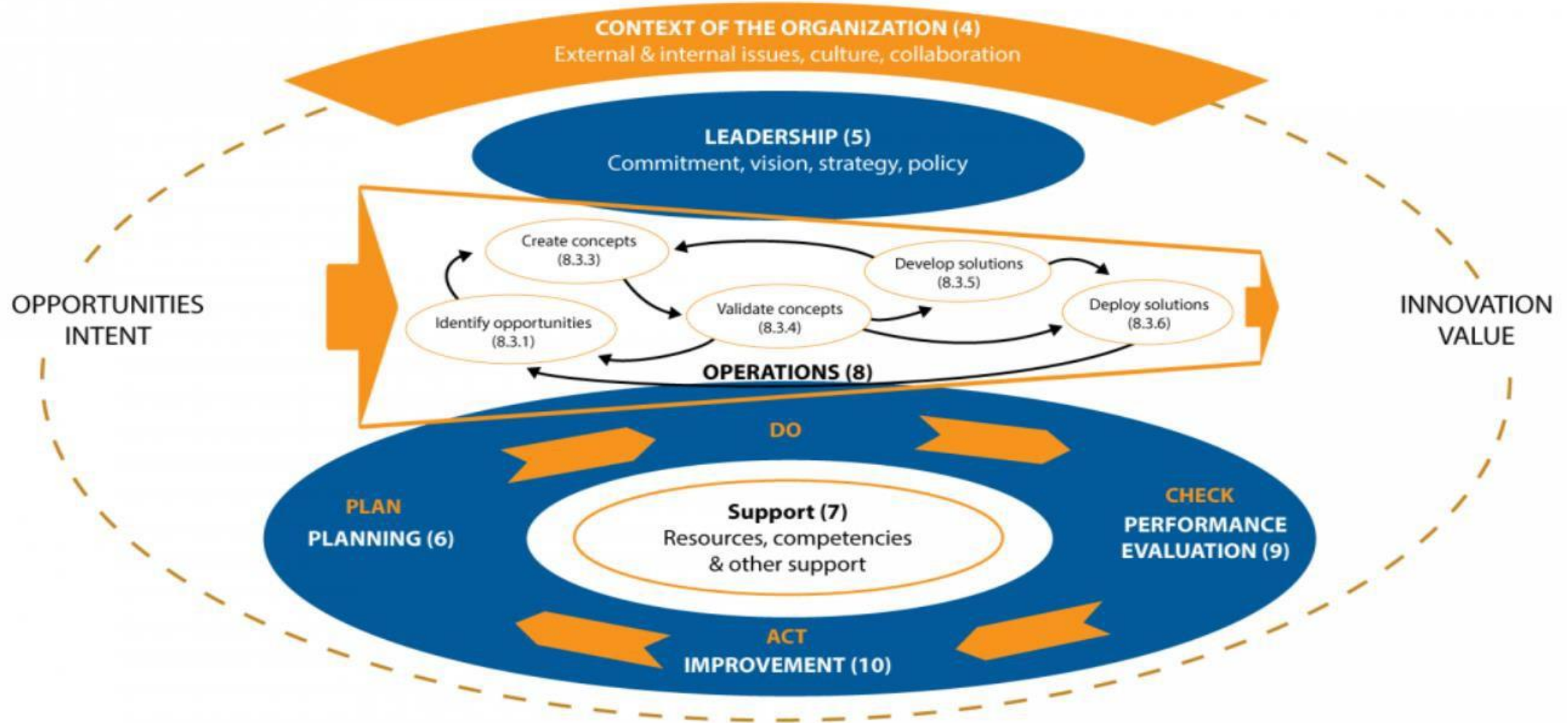
Innovation framework

The application of new ideas to realise value

◊ Opportunity gate ◊ Solution gate ◊ Review gate



ISO 56002 & IMS Framework with PDCA Cycle



Source: <https://www.iso.org/obp/ui/#iso:std:iso:56002:ed-1:v1:en>

Outcomes for Mott MacDonald

Profitable projects



Delighted customers



Industry leading reputation



Engaged staff



Outcomes for clients

Value for money



Effective production



Certainty of outputs



Safe stakeholders



Outcomes for society

Accessibility



Inclusion



Empowerment



Resilience



Wellbeing



Purpose and
Performance
– Solving
Society's
Challenges



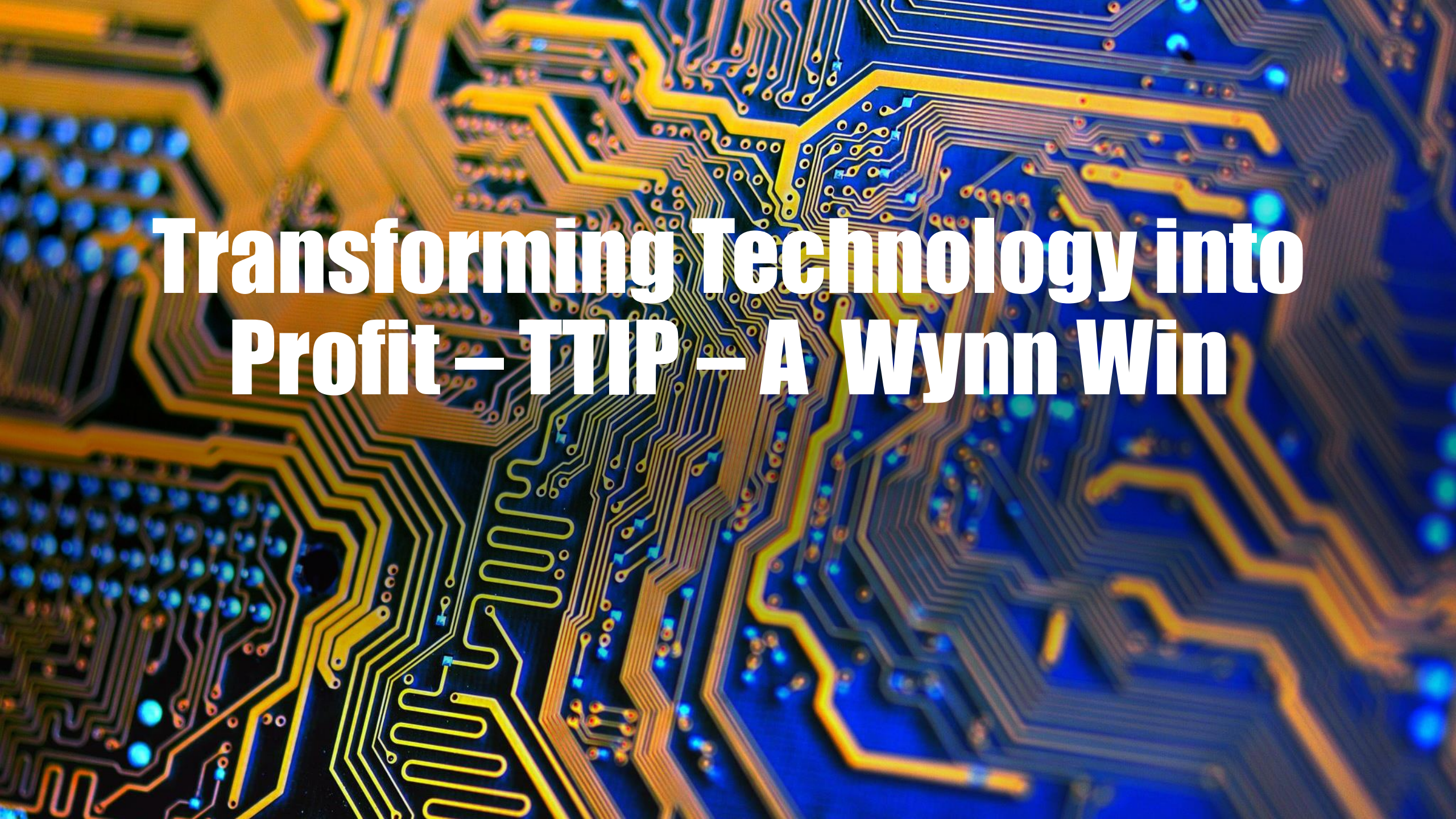
Corporate Venture Capital
Mott MacDonald Ventures



Jon Rains
Mott MacDonald Ventures



Andrew
Gaule

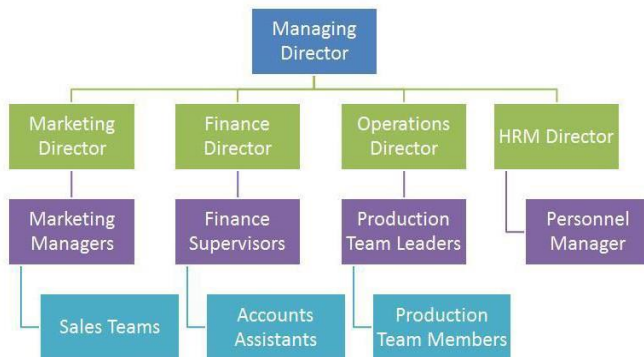


Transforming Technology into Profit – TTIP – A Wynn Win

Two Competing Organisations within any business

Day-to-Day Organisation

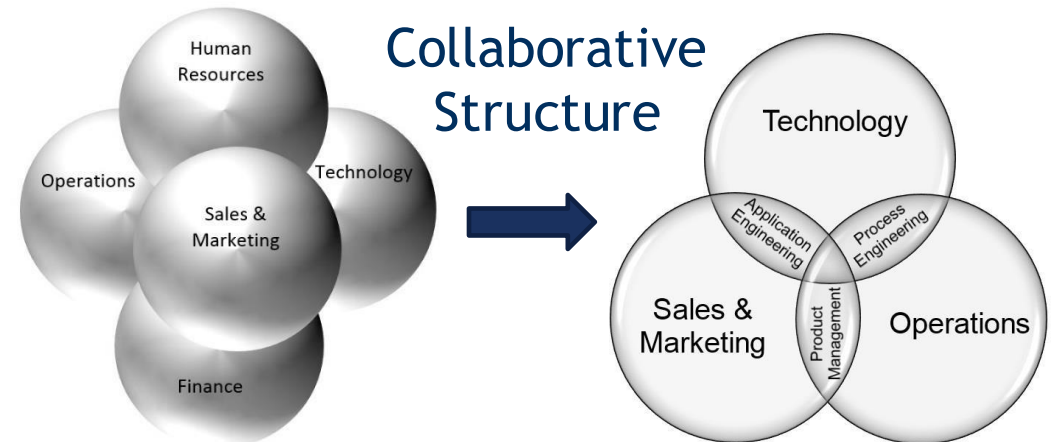
Delivering the day to day business;
Make Product > Sell Product > Ship
Product > Collect Money > Repeat



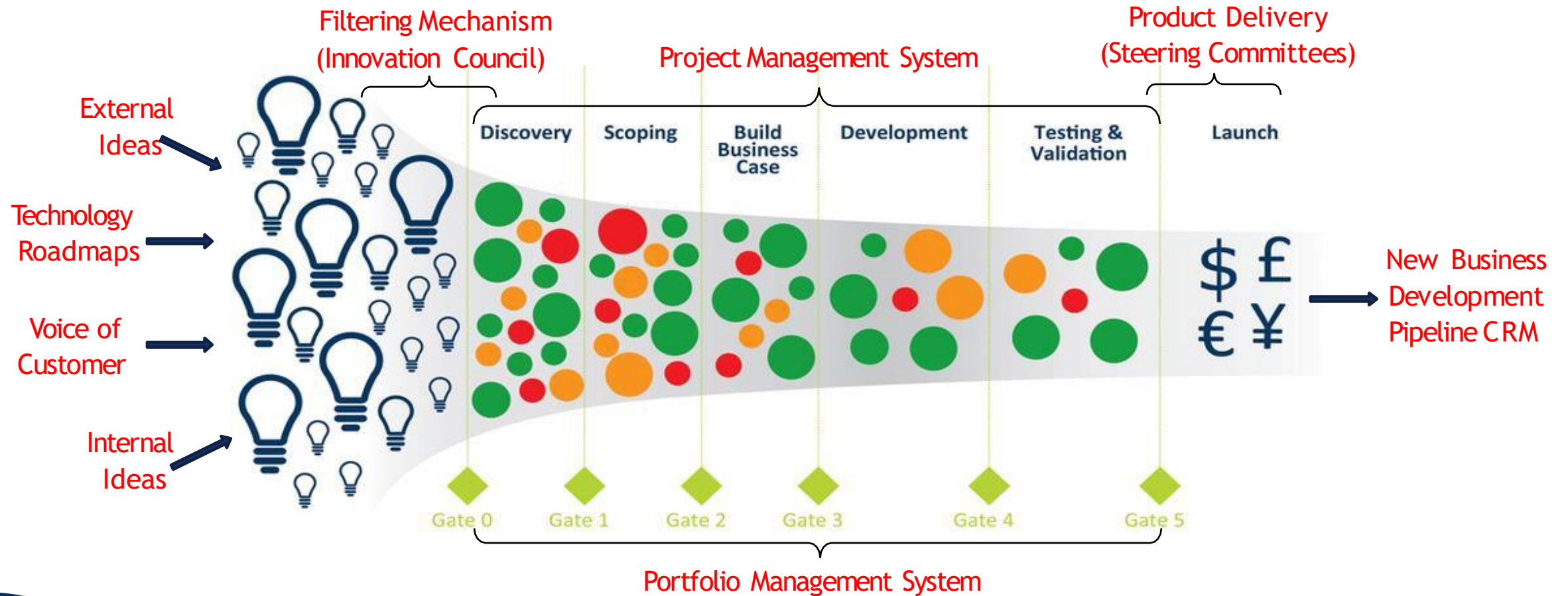
Hierarchical Structure

Innovation Organisation

Delivering growth through new products; managing free thinking, handling ambiguity, dealing with risk



Full Innovation Process with all Stages & Tools



My Top 5 approach to Managing an International Innovation Portfolio for Business Growth

- 1) Create a Common Vision & Strategy
- 2) Establish a common Innovation Process
- 3) Understand the Global Structure, play the Politics, manage the teams
- 4) Focus down the Project Portfolio
- 5) Have a Relentless Discipline in Execution