COLLABORATION AND KNOWLEDGE SHARING

VITAL CONDITIONS FOR ACCELERATING MULTI-SECTOR ADOPTION OF INDUSTRY 4.0 TECHNOLOGY IN WALES

RESEARCH PROPOSAL QUESTION

The research question is:

How can Welsh Government forge strategic collaborative partnerships with Global Industry 4.0 Trailblazers (GIFTs), thereby creating the best conditions for driving multi-sector adoption of I4.0 technologies in Wales?

POLICY IS NOT ENOUGH IN ITSELF

WELL RESEARCHED POLICIES FOR DIGITAL TRANSFORMATION HAVE BEEN PUBLISHED IN WALES 4.0 WHICH STRESSED THE URGENCY FOR CROSS-SECTOR ADOPTION OF THE LATEST I.40 TECHNOLOGIES

…….attention will need to be given to thought leadership and capacity building within the Welsh Government to deliver smarter and more collaborative ways of transforming the Welsh economy so that people can live meaningful and productive lives." (Welsh Government 2019)

SO, WHAT DEFINES A GIFT ?

- GLOBAL INDUSTRY 4.0 TRAILBLAZER
- COLLABORATORS – INNOVATORS – NETWORKERS – PROJECT PARTNERS – KNOWLEDGE SHARERS – BEST PRACTICE SEEKERS – SDG EMBRACERS
- SIEMENS, FOR EXAMPLE, INVESTS £5 BILLION ANNUALLY (Reuters 2022) ON RESEARCH AND DEVELOPMENT AND HAS VAST EXPERIENCE OF A WIDE RANGE OF GLOBAL I4.0 TECHNOLOGY APPLICATIONS AND USE CASES
- SIEMENS IS ABLE TO WORK AT NATIONAL GOVERNMENT LEVEL AND IN 2016 SIGNED A MOU WITH THE STATE OF ALBERTA (Siemens Canada Collaboration 2016)

WHO ARE THE WELSH GOVERNMENT ACTORS?

- (OECD 2020) SUGGESTS THAT A REGIONAL DEVELOPMENT AGENCY COULD BE APPROPRIATE, CITING THE FORMER WDA AS AN EXAMPLE
- 'ALBERTA INNOVATES' IS A MODEL FOR FURTHER RESEARCH AND CONSIDERATION (ALBERTA INNOVATES, 2022)
- OTHER GOVERNMENT SUPPORTED ACTORS ARE SUGGESTED IN WALES 4.0 SUCH AS DIGITAL INNOVATION HUBS AND INDUSTRIAL INNOVATION CLUSTERS
- WILL THESE PROPOSED ACTORS HAVE THE REQUIRED ATTRIBUTES TO CREATE THE CONDITIONS PRECEDENT FOR ACCELERATING CROSS-SECTOR ADOPTION OF I4.O IN WALES? WILL THEY BE COLLABORATORS, NETWORKERS, INCLUSIVE, MENTORS, KNOWLEDGE SHARERS, WHO REACH OUT ACROSS SECTORS AND BEYOND THEIR DEFINED DOMAINS?

WHAT ABOUT DIGITAL INNOVATION HUBS?

- IN EUROPE DIHs ARE THRIVING BUT WE ONLY HAVE ONE IN WALES (Digital Manufacturing Innovation Hub Wales 2022)
- THE EUPROPEAN DIH NETWORK IS GENERATING A COLLABORATIVE, KNOWLEDGE SHARING, CO-OPERATIVE CULTURE, OFFERING SMEs THE OPPORTUNITY TO ACCESS LOCAL EXPERIENTIAL LEARNING CENTRES
- Digital Innovation Hubs (DIHs), as highlighted in (Cotrino, Sebastián et al. 2021) have the potential to create networking opportunities for SMEs to access and transfer knowledge WHICH BEGS THE QUESTION: ARE WE MISSING SOMETHING HERE?

THE TAPESTRY NEEDED FOR I.40 ADOPTION

- A TAPESRTY REQUIRES HORIZONTAL AND VERTICAL THREADS KNOWN RESPECTIVELY AS THE WARP AND WEFT THREADS
- Digital Transformation is like a tapestry containing ‘warp’ and ‘weft’ threads. In our analogy the warp (vertical threads) can be likened to the I4.0 technologies that are introduced into a business or manufacturing process whereas the weft (horizontal threads) can be likened to the conditions in which the technologies are introduced
- You can’t have one without the other and authenticity of the ‘conditions’ is essential

A GOVERNMENT & A GIFT?

In 2016 The State of Alberta and Siemens entered a MOU to deliver the following:

- improve energy efficiency and reduce emissions, helping manage the transition from coal to renewables;
- improve the performance and reliability of Alberta's energy infrastructure;
- support the creation of sustainable infrastructure including in the transportation, energy, and buildings sectors;
- enable the diversification of Alberta's economy, including the transfer of key elements of Industry 4.0 in the manufacturing sector;
- increase effectiveness and efficiency of the healthcare system;
- realize a strategy to create work-integrated learning opportunities (NEWS, E.I.N., 2016)

A WORD FROM THE CEO OF SIEMENS CANADA

Siemens has a solid footprint in Alberta and a long history of implementing sustainable solutions in the province. We're excited to continue our collaborative efforts with the government, bringing best practices from around the world to the table and looking at how technology can advance the agenda around key opportunities and challenges in Alberta," said Robert Hardt, CEO, Siemens Canada Limited (NEWS, E.I.N., 2016)

..KNOWING WHAT OTHERS DO BETTER

According to Carl Ennis, CEO of Siemens UK, “knowing what others do better” is a key ingredient to stimulate collaborative partnerships. When a GIFT’s goals are in close alignment with a National Government’s policy objectives, possibilities can quickly become realities….(SIEMENS, 2022)

WHAT WERE SOME OF THE WILP OUTCOMES FOR CANADA ?

- Canada is better able to compete globally - *Helping to deliver a globally competitive workforce*
- Eliminates current and future skill gaps - *An ongoing program that identifies and addresses skills gaps keeps Canada adaptable for whatever new competencies are required*
- Enhances innovation through collaboration - *Students and partner schools create powerful platforms for collaborative research and innovation*
- Enhances productivity - *Students graduating post-secondary schools will have the training needed to be productive quickly. This will advance companies time to market*

WALES 4.0 SAID....

"The fourth industrial revolution will not inevitably lead to more equitable outcomes or better jobs. Leaving things to the market will result in Wales being in a technological race to the bottom. Technologies will only contribute to creating better jobs if employers (both in the private and public sector) commit to a policy focus on improving job quality and skill augmentation"(Welsh Government 2019)

DELIVERING POLICY OBJECTIVES

When a Government delegates authority, responsibility and accountability to an Industry 4.0 delivery actor, that actor has an opportunity to engage in:

- Cross-sector networking with Industry, Universities, Government, SMEs and GIFTs
- Collaborative cross-sector partnerships, attracting organisations with closely aligned policies and objectives, including GIFTs
- Knowledge sharing & Mentoring
- Promoting inclusion
- Investing in experiential learning centres

REACHING THE UNREACHED?

Gash Bhullar, a Technology Developer, Industrial Entrepreneur and leader of the SME Cluster Network said "It's clear that there are a number of hugely successful mechanisms across the UK for engaging with and supporting SMEs who are keen to adopt and exploit technology, but also apparent that there are many gaps in the current provision for those who are less easy to reach or, those who are positioned closer to the 'coal face' and cannot bring their challenges easily into the research domain." (SMECLUSTER NETWORK LIMITED, 2022)

"It's up to us to form a Task Group as representatives of our local industries, RTOs and academic institutions and find a way to level the playing field to ensure that our national approach is consistent and accessible to all." (SMECLUSTER NETWORK LIMITED, 2022)

RESEARCH METHODS

Ethnographic survey to be conducted in a manner which invites actors from Government, Industry, SME sector, Universities, DMIW, AMRC, Industrial Innovation Clusters and GIFTs to share their views on the current extent of:

- Cross-sector collaboration and knowledge sharing
- Networking propensity and outreach capability (resource and attitudes)
- Willingness to embrace cultural change versus legacy attitudes held
- Discernible changes or action needed to accelerate multi-sector adoption of I4.0 in Wales

CONCLUSION

This RP intends to understand where WALES 4.0 has reached and where it has not. It seeks to explore the 'adjacent possible' by looking at what might be possible if Welsh Government can embrace and adopt a culture change that releases actors (possibly including a new development agency) to ACT and DELIVER WALES 4.0.

This might mean actively identifying, exploring and pursuing potential collaborative partnerships with GIFTs (and gifted actors)

The widespread cross-sector adoption of I4.0 can't be left to 'Party Politics' because it's too important for that! Recognition of what others do better is essential

No Political Party has a monopoly on doing the right thing and failing to deliver on a well-crafted WALES 4.0 policy because of politically weighted prejudice is simply not an option

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