

Initial insights from Innovation Strategy Development in Wales

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Abstract: This paper presents insights from emerging work to support the development of a Culture of Innovation in Wales. The region has been subject of much public policy debate, not least for Innovation Policy during the 20 years since a previous Welsh Government Innovation Strategy. This work focuses on how innovation culture intersects with government policy to develop and implement the Innovation Strategy across all sectors of WG responsibility. The co-production approach adopted by WG presents an open approach to public policy, informed through written submissions, public events, and other stakeholder-specific fora. Drawing upon themes from academic literature and those identified and explored through the consultation, the paper explores the level of alignment between stakeholders and the potential actions to enhance conditions for innovation within Wales. The Wellbeing of Future Generations (Wales) Act 2015 provides a unique context for this work, which resonates with the United Nations Sustainable Development Goals. It forms part of a broader and longer-term study intended to support the refinement and delivery of the Innovation Strategy.

Keywords: Innovation, Public policy, Wales, Strategy

1. Introduction

Wales has been transitioning from an economy, and society dominated by coal and steel production. At the turn of the millennium, the Welsh economy was weak, despite its comparatively vibrant and productive manufacturing sector. Since the 1970s, when coal and steel sectors were still significant, Wales' GDP broadly tracked overall UK performance, but at a lower level. This persistent relative gap meant, until Brexit that Wales qualified for the highest level of EU Regional Aid (Objective 1 in 2000, to Convergence funding in 2017). The ending of strong foreign direct investment (1980s/90s) exposed the challenges of deindustrialisation and weak underlying economic performance, including limited home-grown enterprise and low levels of Business investment in Research and Development (BERD) (Mom et al., 2012). The relatively limited indigenous business base limited the scope to capitalise upon Open Innovation (Chesbrough and Appleyard, 2007) and Smart Specialisation (Foray et al., 2009) (Morgan, 2013). Combined with persistently lacking higher-level skills availability this has presented an enduring challenge (RLP, 2013).

Devolution gave Wales responsibility for regional economic policy, leading to strategies (WAG, 2004, WAG, 2005, WAG, 2010), aiming to harness innovation to nurture technology-focused clusters (WAG, 2003). Weak BERD brought focus to the regional science base, consisting primarily of university research output (WAG, 2009). This led to research and policy debate (Salvador and Harding, 2006, Abbey et al., 2008), including comparison with other devolved UK nations (Cooke and Clifton, 2005). It also emphasised the 'triple helix' (Leydesdorff and Etzkowitz, 1998) with the role of government and academia to support innovation and development of a knowledge-based economy. This questioned these connected roles supporting the potential effectuation proposed by Sarasvathy (2001), from state through to firm levels.

Innovation, a central policy thread from Welsh Assembly Government's (WAG) 2001 ten-year economic development plan 'A Winning Wales' (updated 2003), presented a vision of '*a prosperous Welsh economy that is dynamic, inclusive and sustainable, based on successful, innovative businesses with highly skilled, well-motivated people.*' This focus is being revisited, though amidst very different local and global contexts of a post-Brexit Wales following the Covid-19 pandemic and ensuing economic turmoil. An important development since earlier policies has been the Wellbeing of Future Generations (Wales) Act 2015, bringing a new lens to legislation and actions of public bodies. This required longer-term and more integrated actions, with consideration of broader societal and environmental impacts. The role of broader civic society and citizens also extends the helices into the quadruple and n-tuple (Leydesdorff, 2012). It therefore relates to fundamental consideration of modern roles and relationships of the public, private and third sectors, as discussed by Mazzucato (2011) (Mazzucato and Li, 2018).

An enduring challenge for Wales to achieve these ambitions has been the development of an indigenous culture of innovation and enterprise. A broad description of culture as shared values, perspectives and customs (Moussa et al., 2018) resonates with looking across these helices in the shared geography, economy and society in Wales.

This carries importance as the impact and nature of innovation within a country relates to national culture (Waarts and Van Everdingen, 2005) (Taylor and Wilson, 2012) (Efrat, 2014) (Strychalska-Rudzewicz, 2016). This presents the question of understanding how policy may interpret and address the question of innovation culture within Wales, forming the basis of this work.

2. Approach

The open consultation undertaken to support the strategy development offered a unique data collection opportunity to explore innovation culture in Wales. This presents a pragmatic ontological, epistemological and methodological approach. Routed in the pragmatist paradigm, the works reflect 'solving practical problems in the real world' (Yvonne Feilzer, 2010), supporting the translation of insight for policy into programmes and projects. Combined with direct researcher engagement, the work lends itself to Action Research (Stringer, 2013), being embedded in the environment with continuous access to data and participants. Based upon this position, the following phases outline the planned approach to creating a research space and question for exploration;

The strategy aims to create a culture of innovation in Wales, one which collaborates, shares risk, encourages participation and supports the ecosystem to innovate.

What does an innovation culture mean to you? What is needed to develop an innovation culture in Wales?

The following section presents a high-level examination of responses across the stakeholder groups, which are being fed into further analysis to inform strategy and delivery plan development.

3. Responses/Findings

The consultation attracted 153 unique responses from across Wales and generated discussion notes from five focus groups. Of these responses, 101 submissions included contributions relating to the Innovation Culture questions. These data were extracted and analysed using NVivo. Of the relevant submissions and focus group notes, there were 684 comments linked to culture. The comments were coded using an inductive coding method, against topics identified from the literature and relating to WG policy development. Focus group discussion data were coded, though presented separately as they could not be attributed to specific stakeholder groups, for sessions were openly promoted through a range of channels.

Table 1: Consultation Responses by Group

Type of respondent	Number of responses
Citizens	4
Advisory/Lobbying Organisations	6
Private Sector	14
Third Sector	10
Academic/Research Organisations	20
Public Sector	31
Unknown	16

As shown in Table.1 above, the consultation attracted responses from a broad range of stakeholders. Public sector organisations provided the largest proportion of responses, although this is perhaps unsurprising because of their propensity to engage in the policy agenda. However, private sector organisations and advocacy groups (e.g. industry sector fora) provided significant contributions, helping ensure effective consultation.

From the data collected, Figure 1 shows that at a high level, across all stakeholders, the most frequently noted topics were Skills and Training, followed by Funding & Finance. There was a notable range of topics, suggesting a level of complexity in unpicking innovation culture.

The frequency of issues being raised offered a level of insight, although becoming more nuanced at the level of stakeholder groups. Tables 2 and 3, following, show how the comments from each theme are grouped by sector, or stakeholder group, reflecting the proportion of comments from each theme originating from respondents identified within a sector or stakeholder group. The 'unknown' group represents those written responses that opted not to include this information with their response, while focus groups involved diverse respondents, and hence are considered separately.

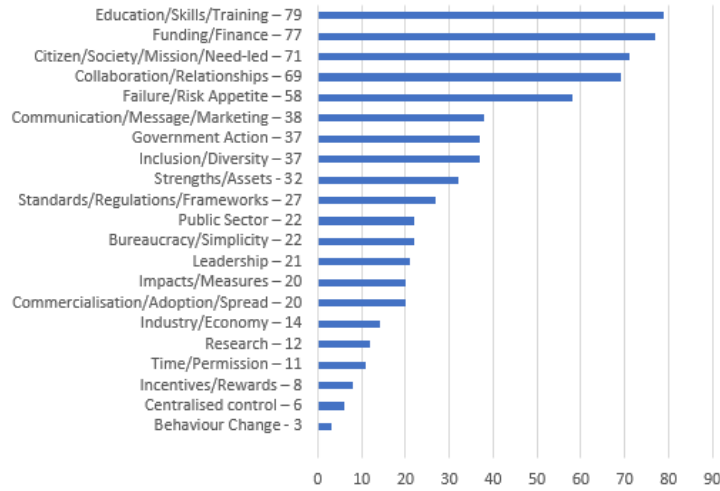


Figure 1: Frequency of responses by topic

Table 2: Balance of responses by topic and stakeholder group

Topic/Code	Citizens	Advisory/ Lobbying	Private Sector	Third Sector	Academic/ Research Org	Public Sector	Unknown	Focus Groups
Education/ Skills/ Training	0	6.30%	6.30%	10.10%	29.10%	24%	14%	10.10%
Funding/ Finance	0	3.90%	10.40%	14.30%	32.50%	19.50%	5.20%	14.30%
Citizen/Society/ Mission-led	0	2.80%	2.80%	16.90%	18.30%	16.90%	9.80%	32.40%
Collaboration/ Relationships	1.40%	7.20%	13%	4.30%	33.30%	16%	11.60%	13%
Failure/Risk Appetite	1.70%	1.70%	5.20%	0	12.10%	32.70%	10.30%	36.20%
Communication / Message	0	0	5.30%	10.50%	15.80%	21.10%	13.20%	34.20%
Government Action	0	2.70%	10.80%	5.40%	32.40%	27%	0	21.60%
Inclusion/ Diversity	0	2.70%	8.10%	16.20%	24.30%	10.80%	2.70%	35.10%
Strengths/Assets	0	9.40%	0	3.10%	28.10%	25%	18.80%	15.60%
Standards/ Regulation	0	18.50%	3.70%	7.40%	11.10%	29.60%	7.40%	22.20%
Public Sector Action	0	0	13.60%	13.60%	4.50%	59.10%	4.50%	4.50%
Bureaucracy	0	0	0	0	18.20%	27.30%	9.10%	45.50%
Leadership	0	4.80%	14.30%	4.80%	4.80%	47.60%	9.50%	14.30%
Impact/ Measures	0	10%	15%	5%	25%	20%	15%	10%
Translation	0	20%	10%	5%	20%	40%	0	5%
Industry/ Economy	0	0	21.40%	0	28.60%	21.40%	21.40%	7.10%
Research	0	25%	8.30%	25%	41.70%	0	0	0
Time/ Permission	0	9.10%	0	0	18.20%	36.40%	9.10%	27.30%
Incentives/ Rewards	0	25%	12.50%	0	12.50%	25%	12.50%	12.50%
Centralised Control/Body	0	0	0	16.70%	83.30%	0	0	0
Behaviour Change	0	0	0	33.30%	0	0	0	66.70%

Table 3: Normalised balance of responses by topic and stakeholder group

Topic/Code	Citizens	Advisory/ Lobbying	Private Sector	Third Sector	Academic/ Research Org	Public Sector	Unknown	Focus Groups
Education/ Skills/ Training	-	1.11	0.48	1.07	1.54	0.82	0.93	2.14
Funding/ Finance	-	0.69	0.79	1.52	1.72	0.67	0.34	3.03
Citizen/Society/ Mission-led	-	0.49	0.21	1.79	0.97	0.58	0.65	6.87
Collaboration/ Relationships	0.371	1.27	0.98	0.46	1.76	0.55	0.77	2.76
Failure/Risk Appetite	0.45	0.30	0.39	-	0.64	1.12	0.68	7.67
Communication/ Message	-	-	0.40	1.11	0.84	0.72	0.87	7.25
Government Action	-	0.48	0.82	0.57	1.72	0.92	-	4.58
Inclusion/ Diversity	-	0.48	0.61	1.72	1.29	0.37	0.18	7.44
Strengths/Assets	-	1.66	-	0.33	1.49	0.85	1.25	3.31
Standards/ Regulation	-	3.27	0.28	0.78	0.59	1.01	0.49	4.71
Public Sector Action	-	-	1.03	1.44	0.24	2.02	0.30	0.95
Bureaucracy	-	-	-	-	0.96	0.93	0.60	9.65
Leadership	-	0.85	1.08	0.51	0.25	1.63	0.63	3.03
Impact/ Measures	-	1.77	1.14	0.53	1.33	0.68	0.99	2.12
Translation	-	3.53	0.76	0.53	1.06	1.37	-	1.06
Industry/ Economy	-	-	1.62	-	1.52	0.73	1.42	1.51
Research	-	4.42	0.63	2.65	2.21	-	-	-
Time/ Permission	-	1.61	-	-	0.96	1.24	0.60	5.79
Incentives/ Rewards	-	4.42	0.95	-	0.66	0.85	0.83	2.65
Centralised Control/Body	-	-	-	1.77	4.41	-	-	-
Behaviour Change	-	-	-	3.53	-	-	-	14.14

Public Sector and Academia stakeholder groups contributed the largest proportion of commentary across most codes. Across stakeholder groups, there was discussion of aspects such as Funding/Finance. Further common areas include collaboration, relationships, and leadership, where government policy may also foster innovation culture without requiring significant investment during particularly challenged times for public expenditure. However, certain considerations, such as centralised functions or standards and incentives, were more focused

amongst from specific groups. This suggests some misalignment in at least some priorities, if not approach, for fostering an innovation culture.

4. Integration and Implications

The helix models, from triple though to n-tuple (Leydesdorff, 2012) highlight the interconnection of stakeholders. Therefore, this presents a complex challenge across the broad range of identified topics and differing emphasis across the groups presents. This complexity reflects in considering how effectuation (Sarasvathy, 2001) can be realised, including specifically for the desired innovation culture.

5. Next Steps for Research and Practice

Initial review of the consultation responses has shown a complex picture amongst relatively diverse stakeholders involving a range of issues. However, deeper review of the data will be undertaken to examine the issues in greater detail.

This will include reflection against academic literature and practice from other regions to identify behaviour and actions supporting positive culture development. This will allow subsequent stages of policy formulation and delivery actions to be defined.

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