

2 Rethinking R&D in the creative industries

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The importance of a sector-specific understanding of R&D

Research and Development (R&D) can be described as a process: the generation and systematic use of new knowledge, leading to innovation. Once done in dedicated laboratories by specialists and supported by large budgets, R&D has become a much more accessible and common practice. It has, over time, evolved from the traditional and linear model of creating innovation (Schumpeter, 1934) to an increasingly multi-faceted process. This has led to the adoption of R&D by different knowledge domains, including, more recently, the creative industries (see Chapter 1).

Despite the increased attention dedicated to R&D from a scientific, industry and policy perspective, the understanding of R&D processes inside the creative industries remains limited. We have only a vague idea about how creative businesses actually understand R&D – what value they attribute to it or how they define it. This limits creative businesses' practical experience in dealing with R&D and the mechanisms underpinning it. This is compounded by the way in which theoretical and practical understandings of the concept tend to be still fuelled by general definitions that use technocratic or STEM-focused language that is often inaccessible to creative businesses.

We need to review R&D processes in ways that come from – and work within – the creative industries, rather than simply transposing generalised or borrowed concepts and practices from other sectors. This chapter addresses the limits of how creative industries businesses understand R&D within their own sector. In doing so, it analyses businesses' perceptions about R&D in terms of value assigned to R&D processes and how these perceptions give rise to specific sector-relevant characteristics of R&D.

To explore these questions, we conducted interviews with 68 freelancers or businesses (from December 2021 – January 2023), funded and supported by Clwstwr to do R&D, as part of the UK's CICP (see Chapter 1). We used a mix of methods, combining quantitative and qualitative

approaches. The quantitative approach assessed three important values determining the perception of R&D for creative businesses: the value of novelty of R&D practices, the time-based value of such practices and go-to-market value. We used qualitative analysis to identify the characteristics that creative businesses assign to R&D within their sector: using inductive thematic analysis to first generate codes for R&D traits, before grouping them under a common theme or concept delimiting a concrete semantic area (see Chapter 1 for more methodological details).

We begin with a literature review of the context fuelling the limited knowledge around the understanding of R&D processes within the creative industries. The findings section then explores the value that creative businesses assign to R&D, before moving on to discuss how from these values emerge specific R&D characteristics. In the conclusion, we discuss how an empirical approach to the understanding of R&D within the creative industries can shape R&D practices and policies in the future.

Towards a practical understanding of R&D

There are two major limits to understanding R&D processes in the creative industries:

- The first emerges from the definitions of R&D that are largely recognised, adopted and circulated by governments and funding bodies and generally developed outside the creative industries.
- The second emerges from the complexity of R&D processes within the creative industries, which often do not operate in the terms and frameworks developed in STEM disciplines and sectors. This complexity also limits the number of available studies on R&D processes.

The most widely recognised and internationally adopted definition of R&D is provided by the *Frascati Manual* (OECD, 2015). Originally published in 1963, the definition has been adjusted over time to match the spread of R&D practices across different knowledge domains. The updated 2015 version of the definition acknowledged R&D as: ‘the creative and systematic work undertaken in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge.’ It further differentiates between three different processes of R&D: basic research, applied research and experimental development. Basic research describes the acquisition of knowledge without any immediate application or use; applied research is directed towards a specific aim or objective; and experimental development works towards a very concrete output such as a product, service, experience or process.

Bakhshi and Lomas (2017) have criticised the *Frascati Manual*'s R&D definitions for not including all possible R&D processes – especially for the creative industries and the arts and cultural sectors. We would agree with this, but would argue that the problem for the creative industries lies less in these basic definitions – since the updated version of the *Frascati Manual* is inclusive of various R&D processes across sectors – but in the customs, practices and assumptions clustered around perceptions of – and policies towards – R&D. These customs and practices are still largely dominated and informed by examples from technology and science.

According to the *R&D in the Creative Industries Survey* (2020), a majority of responding creative businesses in the UK (55%) use the *Frascati* definition when implementing R&D, while a minority (14%) use a tax definition. Nearly a third – 31% – use neither the *Frascati* nor the tax claim definition, suggesting the need for a definition that better aligns with the nature of activities in the creative industries. The study points to a perception of R&D that is more related to investment in projects and content rather than in technologies and process/product innovation.

Bakhshi and Lomas (2017) also see the importance of R&D for the creative industries and shed light on the complexity of understanding R&D processes in these sectors. At present, R&D concepts are still used ambiguously (Bakhshi et al., 2021) and interchangeably with the notion of innovation. R&D represents instead *a potential pathway leading to innovation*, informed by practices like market research, training and design (Nesta, 2006). R&D can also take other forms that are more suitable to the specific ways in which creative industries generate and transfer knowledge. For example, market research that is experimental and methodologically sophisticated could be labelled as R&D (Bakhshi, 2022). Emerging organisational forms such as CreaTech businesses (Kalenjuk & Kuznetsova, 2022) can give rise to specific forms of conceptualising and implementing R&D (Siepel et al., 2022). These observations point to the importance of defining R&D both in terms of various processes and delivery models (sole traders, SMEs, collaborations/networks and large businesses).

While Bakhshi and Lomas (2017) consider the specificities of R&D across the creative industries, other recent studies tend to focus on specific, sub-sector perspectives. In the areas of art and design, practices around experiential and practice-led R&D (Mortensen Steagall et al., 2022; Scholtes & Batorowicz, 2019; Brooker, 2021) have crystallised into a widely adopted approach to innovation. Media research has focused on discussing R&D as a pathway to different typologies of innovation (Bleyen et al., 2014) – e.g. process and product innovation – and emerging concepts such as open innovation (Klaß, 2020). Research has also explored the shifting role of R&D in the film industry and its impact on VFX and animation/games (Gowanlock, 2021; Kultima & Peltoniemi, 2012), as well as the contrasting and specific forms of innovation that question the

role of public intervention (Benghozi et al., 2017), and the link between innovation and productivity (Chen & Amahah, 2016). There are also studies exploring R&D in the book publishing sector (Benghozi & Salvador, 2016) and the museum sector (Chuan et al., 2023).

These studies provide useful evidence of how R&D leads to innovation, with less focus on how R&D processes work in practice. Studies addressing R&D processes across several sectors and countries (UK Innovation Survey, 2021) offer only limited evidence of R&D models and are mainly focused on medium and large companies, rather than micro-businesses and freelancers that form a large share of the creative industries (Easton & Beckett, 2021). The few studies exploring perceptual aspects of R&D in the creative industries tend to adopt a functional lens – i.e. one where the perceptual traits are analysed in function of the impact that they generate at the level of business departments (Tükenmez et al., 2017) and not in terms of how they can shape an overall vision of R&D.

Two main challenges emerge from the literature review. First, despite some progress, mainstream concepts and approaches to R&D remain restrictive and not reflective of the extent and nature of R&D processes in the creative industries. A suitable way of exploring the perception of R&D is by looking at what value is assigned by creative businesses to such processes, i.e. how accumulated knowledge is transformed into perceived benefits. It can cover tangible spillover effects such as returns (Hall et al., 2010), patents (Jaffe, 1986) and productivity (Pappas & Remer, 1985) but also less tangible value that cannot be easily monetised, such as process novelty, time effectiveness and market readiness levels of R&D projects. Furthermore, the complexity of R&D practices in the creative industries complicates the process of identifying typical R&D traits that help us to distinguish it from R&D in other sectors. *Nesta* (Lomas, 2017) specifically calls for further research that develops R&D case studies and sets up frameworks for evaluating such practices. In this context, the five criteria established by the *Frascati Manual* (novel, creative, uncertain, systematic and transferable) need to be further tested against empirical in-depth evidence about R&D process characteristics in the creative industries. Our study takes these two challenges as a point of departure, asking:

- How are R&D processes perceived in the creative industries in terms of the value that businesses assign to the concept and;
- Which perceptual characteristics distinguish these forms of R&D processes?

The value and characteristics of R&D

Assessing the perception of R&D

As we discussed in Chapter 1, the Clwstwr programme was designed to rethink R&D processes in ways that made them relevant and impactful for

people working in the creative industries. In this section we look at what we can learn from this kind of initiative and assess the extent to which a Clwstwr style innovation ecosystem is perceived as useful and effective. We asked interviewees: how different R&D processes are to their day-to-day business activity; if the time invested in R&D processes was worth their effort; and if their expectations in terms of ‘market readiness’ levels of R&D outputs were met or not. The analysis and interviews led to the exploration of three areas:

- 1 process novelty,
- 2 time effectiveness and
- 3 market readiness.

Process novelty

Novelty is one of the defining traits of R&D. While research has explored the novelty of R&D and innovation outputs (see, e.g., Criscuolo et al., 2017; Janssen et al., 2015), less is known about the novelty that R&D introduces into creative industries’ processes, i.e. how different R&D processes actually are from everyday business activities. We assessed the degree to which R&D undertaken in the frame of each Clwstwr project was different from the day-to-day business activity, coding responses based on a three-point Likert scale – high difference, medium difference and low difference.

Our responses show that 34% of respondents assign a high level of novelty to R&D practices within their businesses (Figure 2.1), 60% of respondents (45 businesses) assign a medium level of novelty and only 6% of respondents assign a low level of novelty to their R&D practices. These results suggest that for most businesses (94%), there is a clear distinction

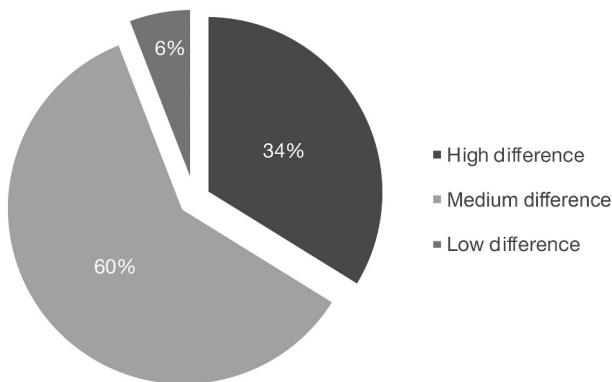


Figure 2.1 Degree of R&D process novelty perceived by creative industries businesses.

between their everyday activities and R&D, with only a small minority seeing R&D as part of business as usual. However, a majority of those who had taken part in R&D projects – the 60% who opted for the medium level of novelty – were able to see connections between their R&D projects and their everyday business activities.

Time effectiveness

R&D performance is traditionally measured through indicators such as productivity levels, financial performance or developed patents. We can also measure R&D performance by looking at the time and resources it absorbs – accomplishing R&D objectives within time and budget (Szakonyi, 1994), but also the extent to which time and resources devoted to R&D are seen as time well spent. This is complicated by the fact that the economic impact of R&D processes on businesses is not immediately visible and needs time and effort to materialise: a form of deferred gratification that will be important in shaping the perception of R&D for creative companies used to moving from one commission to the next.

We assessed how time-effective R&D processes are for creative businesses. The analysis reveals that (Figure 2.2) 93% of respondents responded positively asked whether R&D processes were worth the effort and time, with only 7% (5 out of 68 companies) replying more speculatively (with ‘maybe’), and none of the respondents saying that they didn’t consider invested time to be worth their effort. For the 7% less sure about the effectiveness of R&D, their uncertainty often came from the time lag between research, development and commercialisation. But in most cases,

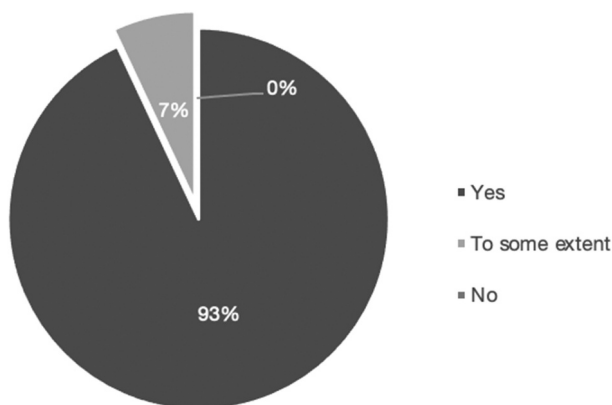


Figure 2.2 Degree of time effectiveness of R&D processes perceived by creative industries businesses.

these results vindicate efforts (like Clwstwr and the CICIP programme) to find ways to develop R&D support structures for the creative industries.

Market readiness

Market readiness of R&D process outcomes is a routine process for measuring R&D value. A universally deployed tool for measuring the market readiness of products, services and experiences are Technology Readiness Levels (TRLs) scale (EC, 2014). Although conceived for the technology-based sectors, TRLs can be conceptually redeployed for other sectors (Van Cauwenbergh et al., 2022). For the creative industries, TRLs can be used to measure how far companies were able to travel on their R&D projects (to, e.g., the production of a proof of concept, prototypes or market-ready solutions).

While TRLs are common in the tech industry to measure the maturity of innovative technologies, many of the companies involved were focused on less technical forms of innovation – in areas like storytelling or business models – so we asked businesses to consider the readiness levels of their projects more broadly. Indeed, we would suggest that while TRLs are useful as indicators of R&D journeys, replacing the word technology with a broader term – such as outputs – might be more useful. We assessed perceptions of R&D through the lens of their expectations (in terms of market readiness of R&D), measuring how mature their R&D outputs were perceived to be. Once we redefined the meaning of ‘technology’ – to include any creative output – we were able to use a traditional TRL (or Output Readiness Level) structure, with respondents assessing their solutions from a scale from 1 to 9 (1–3: proof of concept; 4–6: prototype; 7–9 fully marketable solution). We asked them to assess which TRL/ORL level they set out to achieve at the start of their projects and compared this to the level they reached at the end of their project. Only five projects could not ascribe their projects to a level of maturity, as the nature of their solution was too difficult to align to the TRL scale. Most projects, once the TRL terminology was translated to include the range of creative industries outputs, were able to assess where their projects fitted on the TRL scale.

Results show a fairly even spread between the number of projects falling within each of the three development stages, with the last development stage (TRL 7–9) slightly larger than the others (Figure 2.3). Given the comparatively modest levels of funding for R&D projects and the speculative nature of many projects involved in the Clwstwr programme, this suggests that many companies were able to move through the stages fairly quickly. It also indicates a fairly high degree of success for the programme as a whole, with companies embracing R&D as a viable route to innovation.

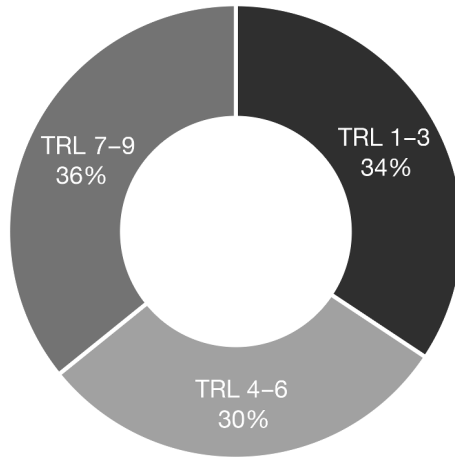


Figure 2.3 Degree of TRL levels outcome of R&D processes as perceived by creative industries businesses.

When we compared this against prior expectations, our analysis shows that over half of the companies achieved the stage they set out to, indicating – given the inherently speculative nature of R&D – a strong level of performance against objectives. Only 21% of respondents failed to reach their expected levels of market readiness – a surprisingly low failure rate for such an experimental initiative (Figure 2.4).

Overall, these results suggest that:

- 1 R&D is still far from becoming common practice in the creative industries, with only 6% of those taking part in the Clwstwr programme seeing its structure and mechanisms as part of their day-to-day activities. Nonetheless, most of those involved – 60% – were able to relate their R&D activity to their day-to-day business.
- 2 There is a strong affirmation of the importance of R&D for creative businesses, despite the high risks involved and the – sometimes – slow return on investment. Given that the creative industries are often a project-based, freelance domain, in high need of stable income, this result enforces the potential value and long-term effects that creative businesses see in implementing R&D.

Characteristics of R&D

Building on these findings, we set out to assess if a unified, conceptual model of understanding R&D processes in the creative industries is

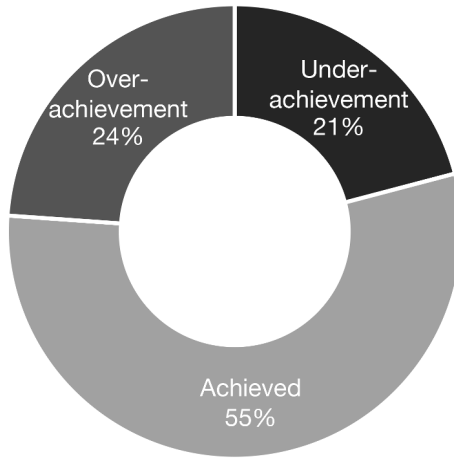


Figure 2.4 Achievement of market readiness levels.

possible and, if so, outline its defining traits. We conducted a qualitative analysis of our interview transcripts to explore how value assessment can create new insights into R&D traits that are typical for the creative industries. We coded the responses of all interviews, extracting data that referred to the perceived nature and mechanisms of R&D processes. Together, the analysis of value assignment and typical characteristics of R&D provides a more complete overview of how R&D is understood and practised within the creative industries. The qualitative findings presented below allowed us to identify seven distinct characteristics of creative industries R&D. These are grouped into two categories: core traits (commonly identified characteristics) and secondary traits (present, but less commonly identified characteristics) (Figure 2.5).

1 *An iterative process*

This characteristic refers to the experience of R&D processes as cyclic – and often repetitive – rather than linear. This favours small, explorative steps rather than larger, bolder moves, as they enable creative businesses to test the ground and take fewer risks. While the standard approach to conducting research sees first a phase of methodological definition, followed by a data collection phase and data analysis, creative businesses see the R&D process as more fragmented and cyclical (in line with the classic ‘double diamond’ approach used on User-Centred Design). Methodologies and research tools were often adjusted after initial tests and trials, reflecting the needs and complexity of the R&D, as well as shifting context and conditions. A good

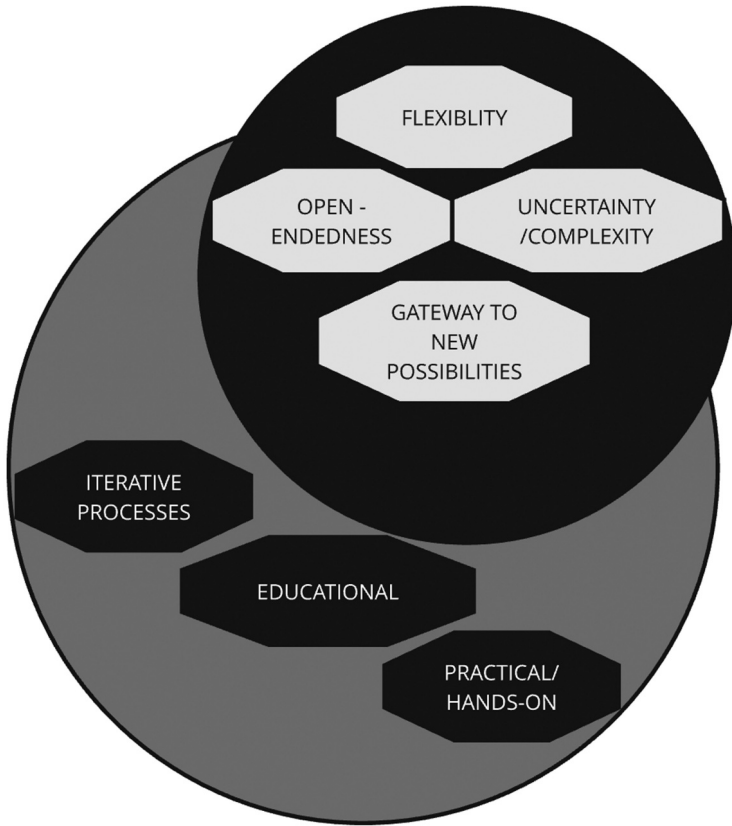


Figure 2.5 Conceptual model highlighting characteristics of R&D processes in the creative industries.

example is the pathway followed by the company *Bombastic*, which was exploring digital learning solutions for schools:

We started our user tests, developing the tech in quite a positive way, but of course reasonably after a few months, of course, we hit low because of the pandemic. (...) We actually really had the opportunity to reimagine our product for remote learning situations because of the pandemic. (...) Through the early months of the pandemic we reformulated our objectives and ideas to actually transpose our interactive platform for an online teaching experience. So that was very positive. And we saw that meant we could still continue researching and developing our project.

The cyclical approach is designed to allow progressive development towards an appropriate solution to a challenge, with each phase bringing improvements before the next phase. This approach benefits from close monitoring, evaluation and reflection on each stage. *Lewnah* – a company aiming to develop an engaging news programme for children – describes how this introduces layers of uncertainty into the process:

It was difficult to keep on track because an R&D process inevitably will change as you go on; your final budget will almost certainly look very different to what you predicted at the start.

Several companies stressed the iterative nature of R&D processes during their interview. For example, *Little Bird*, aiming to improve the environmental sustainability of production companies, stressed the importance of conducting research iteratively and in small steps – a way of working that contrasts sharply with project/content development for most production companies. Similarly, *Monnow Media* – focussing on reimaging news journalism – saw the value of R&D as an investigative, iterative process, which requires a specific framework but allows flexibility. The manager of *For Cardiff* explained how, for them, different iterations were necessary to find working solutions when reaching dead-ends, with methods and tools changing to reflect new iterations.

2 *Uncertainty/complexity*

R&D processes are often complex and always uncertain with many unknown variables (external and company-based) that can change during the course of the exploration. Speaking about their research process for developing an immersive news programme for children, *Lewnah* described how

The R&D experience is never smooth from A to B; you sort of take ten steps forward, and then two steps back. It was very much like that for us.

For *Rescape* – exploring how VR technology can be developed in healthcare – the uncertainty and complexity of R&D required the integration of different perspectives. *Voice Wales Photo Agency* – aiming to research and develop a new kind of photo agency for the Welsh news industry – a major challenge of R&D is ‘*managing the days when you feel you’re not getting anywhere*’, but also the ‘*patience (required) in seeing the results emerge*’. Another interviewee explained that they had to adapt their normal working rhythm to another, slower one, fitting with the pace of R&D processes, while ‘*dealing with research outcomes that were not expected*’ (*Caerphilly Observer*).

While uncertainty was undoubtedly challenging, some respondents – such as the project manager of *Edge21* – welcomed it:

The uncertainty was really exciting. I quite liked the unknown and I dived straight into the unknown and embraced it (...), because Clwstwr and the R&D experience has been a massive turning point for me in my career.

The manager of *Goggleminds* – another project exploring the use of immersive technology in healthcare – describes how their capacity to deal with uncertainty and complexity grew as they moved from a Seed project to a second-phase development project:

The second project was a lot more complex, because there was a lot more uncertainty, I would say. It was definitely more challenging but we've learned a lot from the first project, the team was growing so we were less reliant on contractors and we were much better placed. If we would have done the second project at the start, I think it would have been a different journey, not necessarily a different outcome, but a different journey.

Whether seen as a challenge or an obstacle, the degree of uncertainty and complexity of doing R&D processes pushed companies outside their normal business routines. Nonetheless, it was, for most, an intrinsic part of the experience.

3 *Learning new skills*

Many projects saw learning as an important part of the process of addressing the specific problems or questions that framed their R&D. Several of the interviewed businesses confirmed that they learnt a great deal about the new field of exploration or discovered new methods and approaches for addressing their research questions. For example, the manager of *Goggleminds* discussed the accelerated learning curve for staff, which led to doubling the level of productivity and completing the second project in half the time. He also stressed the layered learning process involving different steps and approaches:

A lot of the research we've done indoor endorsed in a way, and consolidated our thinking, from the outset. Before we thought we had done the research we sort of had to do the research to find out if we were heading in the right direction, so it was a real learning curve.

Other companies like *Ie Ie Productions* (*Candylion project*) reflected upon the need for a focused approach when performing R&D and acquiring new skills and knowledge:

Learning about interactive film and gaming definitely opened up those worlds. It also gave us an opportunity to explore that, and also to do some work on the characters, to get the team back together to get them focused in a workshop and talking through a very long process. And those benefits of time to think and explore opportunities, and then decide actually 'no, we clearly need to stick to one thing', that's invaluable at the end of the day, instead of trying to go off trying to do too many things.

Learning also happens at different levels, as explained by managers of the *Laku Neg*, a project aiming to tell indigenous stories on screen:

It's this whole idea of learning new software and learning new things, learning new pathways to do things, and I know that it was a learning journey for us in regards to that whole idea of how to go through the process, how to administer the process.

All the testimonials collected from funded R&D projects, in different ways, highlight the multiplicity of learning avenues and levels, as well as personal forms of defining learning outcomes.

4 Practicality

Interviewees stressed the need for practical R&D processes to obtain hands-on, applicable results. The project manager of the *Voice Wales Photo Agency* project reflected on the difference between fundamental and applied research. From her perspective, the first is theoretical, strongly framed by academic contexts, while the second has a practical finality and applicability for the development of creative solutions:

I've got a bit distracted with other avenues which I don't know how relevant they were at that point in the process. I was looking at what photos mean to people and what it means to be Welsh and that kind of line of thought, but that was a lot academic kind of journals and stuff and I just didn't really know if I was on the right track with it, so I went to one of the like market research workshops. The workshop speaker was talking a lot about questionnaires and how you word your research question and I started thinking a lot about my question. And it was really useful actually because she kind of like got me back on track, because she told me that the pure academic side of things in this case, probably wasn't the most relevant and most useful use of my time and I should be looking if the market demand exists, and I could do this by doing compared searches between how many Welsh identity photos come up, based in Wales on certain topics and comparing it with a search on England and so doing those kind of research really helped me to get back on track.

The manager of *Lewnah* also made a distinction between R&D as a more theoretical and conceptual practice aimed at developing knowledge, and development as a concrete process aimed to deliver concrete results in the form of solutions. For her, this was articulated as moving from R&D to D&R:

We were still conducting R&D, but it was more like instead of doing research and development, we were doing development and then research. So, the second stage of the project funding was very much about trying to develop a prototype, a tangible thing. And this is like: Let's actually produce a thing, a pilot that we can then go and do research and test on the market. So, it felt a little bit more straightforward Again, it was just having to interpret R&D for our own purposes.

5 *Flexibility*

This trait is closely aligned to the iterative, uncertain nature of the process, and the need to adjust resources, focus and approaches during the R&D, based on progress instead of following a pre-established itinerary. This aspect is highlighted by the managers of *Agile Kinetic*:

If you're doing real R&D and you learn things as you go along, when you need to be able to change the plan and Clwstwr let us do that. With Clwstwr it was more flexible, so we were able to kind of go where the research took us a lot more easily, which was great.

Flexibility is also among the identified traits of R&D processes identified by companies implementing such projects for the first time. For example, the manager of *Mapped Out* – a news journalism project targeting neurodivergent audiences – told us that

R&D offers more time to think, to explore, to follow instincts and trial things; it is an open and flexible process.

6 *Open-endedness*

Often used in conjunction with flexibility, the concept of open-endedness identifies the lack of rigid boundaries of R&D processes. It also marks the possibility of future changes, as well as the broadness and unrestricted nature of such processes. The broad variety of associations of the concept with benefits or challenges was identified by respondents in different ways throughout the interviews. Positive reflections on open-endedness were linked with freedom and the ability to explore new avenues:

The R&D was incredibly freeing because you could just play with the possibilities. It wasn't: you have to deliver X, it was sort of there's going to be an x but we don't know what that's going to look like. Compared to any other work, it was probably the most freeing experience for me as a practitioner.

(Edge21)

Other respondents saw open-endedness as a form of empowerment. The manager of the *Tredboy* project, who was using R&D for the first time, told us that

The core difference was that instead of being results-based or product-based R&D is more open-ended and therefore empowering.

Respondents who were more familiar with R&D processes, such as the manager of the *Object Matrix* project – saw this as simply built-in to the process:

R&D is a more open-ended and flexible process, informed by findings rather than pre-established.

But this open-endedness was, for many, a real challenge. The manager of the *Candylicon* project told us that R&D

offered time and space to explore opportunities and do the necessary research but (is) also challenging because it is so open-ended.

For some, the concept of open-endedness stands in contrast to everyday business operations. *Martha Stone Productions*, who were exploring online interactive training possibilities, explained how they

had to go through a completely new process that is not similar to producing a TV documentary, but open-ended.

7 *Gateway to new possibilities*

For some of our respondents, applying R&D processes in the creative industries is seen as a *gateway to new possibilities*. These change during the course of a project, a point made by the project manager of *Nimble Productions*, a company aiming to develop content for women's football:

Doing this process, what none of us had anticipated, was that it moved away from our initial idea. Having a co-investigator and a

producer, thus an extra level of support enabled us to get the initial desk research done, to hold the focus groups, to get access to two schools and just checking that we were pitching things at the right level of wording, and made us actually change the direction of the project which none of us were anticipating at the start.

In the same vein, *Monnow Media*, a company exploring modular journalism, explained that the time dedicated to R&D led to developing new ideas and exploring different avenues for radically new ways of doing journalism. The new possibilities opened up by R&D could cross domains, enriching and providing novel and surprising outcomes, as the manager of *The Democracy Box* project explains:

The R&D project allowed me to take my work into a different sector. I can't quite explain the impact of it. I didn't even know there was a democracy sector. It allowed me to research that, map it and create a bridge from the arts & cultural sector to democracy.

However, the broad range of exploration possibilities offered by R&D processes comes with constraints and costs. The project manager of *Martha Stone*, speaking about the way that R&D provides new avenues to develop products, was also aware of the need to extend funding streams to be able to explore new, previously unanticipated possibilities.

Conclusions

Our purpose, in this chapter, is not to substitute but to complement existing instruments and studies to provide more granularity in the way we understand R&D processes in the creative industries. Our findings show that

- A clear majority – 93% of respondents – believe that R&D is worth the investment of time and resources. Despite the built-in uncertainty, most Clwstwr projects achieved a (TRL) level of progress that met their expectations, with over a third reaching the later stages of readiness levels.
- R&D is still a novel and unfamiliar process for most creative companies – 94% of respondents assign a high or medium level of novelty to the R&D process. This is reflected in our qualitative analysis of interviews with project leads, with many commenting on various ways in which novelty and uncertainty were an inherent part of their R&D experience.

We have identified 7 R&D traits that emerge from our interviews with creative businesses and freelancers (both core and secondary). Many of these – uncertainty, open-endedness, the need for learning, the discovery of new possibilities – require the kind of time and resources that most creative businesses have typically had little access to, pointing to the need for both external funding and support systems to guide companies through the complex terrain of R&D. Our interviews suggest that the potential rewards show that investment in creative industries R&D can become a routine part of innovation policy and practice.

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