IP Wales (1999-2019): an international case study in supporting SME entrepreneurship

*Andrew Beale OBE*

Associate Professor, Hillary Rodham Clinton School of Law, Swansea University, Wales, United Kingdom

*This article offers a reflective twenty-year analytical review capturing the operation of IP Wales as an award-winning SME business support initiative, instrument for law postgraduate curriculum development and catalyst for contemporary legal research into intellectual property law and cybersecurity*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The author would like to express his thanks to Professor Barış Soyer and Professor Andrew Tettenborn for their comments on the working draft, any errors herein remain those of the author

# Introduction

The three distinct yet kindred outputs from higher education institutions (HEIs) in the UK are: research, teaching and - often forgotten - third mission activities[[1]](#footnote-1), sometimes referred to simply as “innovation”. The last of these includes IP Wales, a £4m initiative operating out of what is now the Hillary Rodham Clinton School of Law at Swansea University, in Wales, a part of the United Kingdom. This initiative started life twenty years ago as a third mission activity supporting indigenous small to medium enterprises (SMEs); it has since evolved into an instrument closely involved with developing the postgraduate curriculum to support SMEs, and with the same end has also begun selectively to promote contemporary research into the evolving relationship between intellectual property (IP) law and cybersecurity.

The theoretical underpinning for IP Wales as a SME business support initiative came from the work of the Berkeley academic Professor Henry Chesbrough.[[2]](#footnote-2) His thesis was that large U.S. corporations were moving towards a more open model of innovating new products and services, by licensing-in expertise and technologies from outside of the business to supplement internal research and development activities. At the same time Chesbrough observed those same corporations were increasingly licensing-out their own underutilized intellectual assets to other complementary business partners, or otherwise spinning-out new business entities or their technologies to market sectors not in direct competition. Nobody had experienced the rebuttal of an unsolicited business enquiry to a larger corporation more than the SME, so there was great optimism that this “open innovation” model would help SME driven economies such as Wales, with 99 percent of its businesses within the SME category and 95 percent of those at the micro end of the scale with less than ten employees,[[3]](#footnote-3) offering major new licensing opportunities for the indigenous SME sector.

# Third Mission

In their work, *the third mission of universities: an investigation of the espoused values* Loi and Guardo note, “[A]n invisible revolution, known as the third mission, is claimed to be occurring within universities. Accordingly, the canonical missions associated with research and teaching have been integrated with the one aimed at territorial development. But do all universities conceive the third mission in the same way?”.[[4]](#footnote-4) In recognition of the Welsh Government and European Union being the significant grant providers, the default position adopted by IP Wales was to align itself as an instrument of economic development for the Welsh region.[[5]](#footnote-5) This somewhat limited focus was, however, rightly challenged by the Chairman of IP Wales at its inaugural Board meeting. “Neither governments nor development agencies,” he said, “generate economic prosperity, only businesses can do that”.[[6]](#footnote-6) The immediate impact was notable. Not only were new SME representatives co-opted onto the IP Wales Board, but the awareness raising aim of the initiative was quickly changed from an emphasis on “what intellectual property law ***is***”, to “what IP law can ***do***”for client SMEs. In this regard IP Wales became indebted to the UK Intellectual Property Office (UKIPO) for both seconding full-time staff to the initiative, and also training its business background field officers thoroughly in UK intellectual property law.

During this first phase of European Union funded[[7]](#footnote-7) operation IP Wales’s mission was to provide Welsh SMEs with the knowledge and financial acumen to commercialize their intellectual assets. The aim was to raise levels of awareness and understanding of intellectual assets; to allow businesses to make informed choices about how to protect those assets; and to help Welsh SMEs sustain and grow their businesses, by integrating an intellectual assets strategy into the heart of their business plan. Operating as a web-based initiative IP Wales field officers provided strategic IP advice to over 750 SME clients and helped, through the provision of 50 percent grant assistance, to capture and protect 205 patents[[8]](#footnote-8), 60 trademarks[[9]](#footnote-9) and 12 industrial designs[[10]](#footnote-10) around the world. The expectation had been that member SMEs would use such grants to reduce their filings costs in the UK, Europe and USA; but the IP Wales experience was the financial savings from these territories were used to expand territorial coverage elsewhere. Reflecting Chesbrough’s “open innovation” model, IP Wales was also able to offer additional 50 percent financial support towards the legal costs of 25 licensing deals, supporting both the licensing-in of 12 technologies into Welsh SMEs and the licensing-out of 13 Welsh SME technologies around the world.[[11]](#footnote-11)

Consultants QED Intellectual Property Limited (QED)[[12]](#footnote-12) were commissioned by IP Wales to conduct an independent study into the commercial exploitation potential of the 109 SMEs selected via assessment panel to receive grant assistance. 22 SMEs were identified by QED as having high growth potential; QED then undertook an evaluation and validation of the intellectual property generated by these SMEs. In some respects, the findings of this QED Report[[13]](#footnote-13) makes for pleasing reading. All of the SMEs viewed their IP as useful if not critical for company growth, recognizing the legal validity of their IP to be vital. Many showed a strong willingness, if not intention, to license-out their IP. Of the SMEs selected by QED market differentiation was mostly technology based with the IP being mainly patents, which for the most part was reported to be well aligned with product life cycles.

However, the Report went on to identify a number of vulnerabilities and weaknesses. Some were recognized by the SMEs themselves, who viewed their own IP awareness to be low or medium at best and accepted they undertook very little formal IP planning. This lack of awareness led to a failure to recognize the commercial importance of their “know-how”, with none viewing it as potentially more important than a patent.[[14]](#footnote-14) Some were linked to the strong emotional attachment many SMEs felt with their technologies. QED was surprised to find that most SMEs believed their technology to represent a major technical advance[[15]](#footnote-15) and none contemplated their IP as a tradable asset. Whilst SME passion in their technologies was to be admired QED warned against a lack of commercial objectivity.

Others were linked to a lack of resource, with most SMEs using a single IP asset to cover a wide market area, which presented a vulnerability if the SME had to engage in litigation. In seeking to address QED’s concerns over a perceived lack of financial resource available to the SMEs to meet the expense of policing and protecting their patent portfolios, IP Wales arranged a special IP Insurance scheme for its members through HSBC Insurance.[[16]](#footnote-16) However, this low-cost scheme proved to be unpopular with the SME membership, in large measure due to an actuarial insistence that the “litigious” USA market be excluded.

In a recent survey[[17]](#footnote-17) of the 109 assisted SMEs, 52 percent[[18]](#footnote-18) were found to be operational after ten years, with the vast majority of those which did fail doing so following the global financial crisis of 2008. This compares favorably with a UK business sector average of an 11.6 percent annual death rate.[[19]](#footnote-19) Of the SMEs identified by QED, 59 percent had been dissolved or were otherwise untraceable, 23 percent remained operational, and 18 percent had been acquired by larger commercial entities, presumably in preference to any licensing arrangement.

In addition to those members taking formal IP coverage a comparable number of SMEs sought to utilize alternative IP strategies, often linked with trade secrets protection. Best illustrative of this latter category of SME was Cryoton (UK) Limited. This enterprise received 50 percent funding under the *Swansea IPR Initiative* pilot project towards patent costs[[20]](#footnote-20) associated with an invention for use in the oil drilling industry,[[21]](#footnote-21) but thereafter decided to rely on trade secrets protection for future technological developments, using amber encasement technology to prevent any “reverse engineering”.

The overall finding from this first phase of operation for IP Wales was this: the main ingredients for the success of knowledge-based business was access to advanced technology and know-how, good management and finance. The IP Wales experience was a better management team will make more commercial use of a poorer technology than a poorer management team will make of a better technology, and that financial providers will ultimately seek out the good management teams.[[22]](#footnote-22)

With plans already well advanced to build upon the “strength and expertise of IP Wales” by integrating its business support element into mainstream Welsh Government services at the conclusion of European grant funding,[[23]](#footnote-23) the focus of IP Wales now shifted to applying the lessons learnt from its first phase of operation.

# Teaching

Recognizing that a high-quality SME management team was of paramount importance (see above), IP Wales began to explore whether, and if so how, the learning and teaching of intellectual property law could benefit from its integration with management theory.

Chesbrough had been skeptical about the claims of some “enthusiasts of IP”. It was all very well, he said, to argue that IP had enormous potential value, if only companies would pay proper attention to it: but such a claim, he pointed out, was incomplete, since it “assumes that technology assets have some inherent value, independent of any business model used to employ them”.[[24]](#footnote-24) In his work *Integrated Intellectual Asset Management: A Guide to Exploiting and Protecting your Organization’s Intellectual Assets*, first published in 2006, Steve Manton recognized this fact, and set himself the task of unifying what he referred to as “the management of knowledge and intellectual property.”[[25]](#footnote-25) He set the goals of integrated intellectual assets management for the IP lawyer as follows: (i) ensuring access and freedom to exploit, with the law being used as a protective shield; (ii) minimizing access by third parties, by using the law like a sword to cut down on competition; and (iii) putting more emphasis on, and ensuring full exploitation of, key intellectual assets, in particular the organization’s IP and IPRs but also all its other intangible assets, such as know-how and reputation.

About the same time there appeared the new edition of a heralded “unique book” about UK intellectual property law offering an insight into how the system actually worked. As the authors of the work put it, “[Y]ou cannot understand chess by merely learning the rules…you also have to know how the game is played: so to with Intellectual Property.”[[26]](#footnote-26)

Combined with the IP Wales experience of SME business support these two texts became the basis for a new LLM module delivered at Swansea University, known as the *Law of Intellectual Assets Management and Transactions*, which has become compulsory for students on the LLM program in Intellectual Property and Commercial Practice. This module recognizes that intellectual property is the area of law SMEs can utilize to help differentiate their products and services in the commercial marketplace by branding/endorsement; new technologies/creations; and new designs/appearance. At the time of writing over 125 masters’ students have now successfully completed their study of this module, and have thus received a thorough grounding in the issue of how IP law can be used for the benefit of SMEs, neatly supplementing the doctrinal study of IP law available in other modules on the program such as International Intellectual Property Law, which offers a public international law perspective.

# Research

The timely publication of *Intellectual Property and Innovation Management in Small Firms[[27]](#footnote-27)* as the first major collection of UK papers on IP and innovation management in SMEs revealed the desirability of dealing with this topic in a thoroughly interdisciplinary way. It contained contributions from IP lawyers, business and management researchers, sociologists and political scientists. In the course of so doing it featured eight out of the eleven projects funded by the Economic and Social Science Research Council (ESRC) under their *Intellectual Property Initiative*.[[28]](#footnote-28) Four specific recommendations to policy-makers were offered on the basis of this research Initiative.[[29]](#footnote-29) These arose from a finding that SME’s use of the IP system “depends very much on the sector in which they operate, and their size …probably, for most, the patent system has little or no relevance” (although there was a recognition that “patenting can be crucial” for some research-intensive sectors, such as biotechnology).[[30]](#footnote-30)

In the first instance it was recommended that patent databases needed to be more user-friendly. Few can object to anything being more user-friendly, but the IP Wales experience was the PATLIB network[[31]](#footnote-31) was of more practical relevance in supporting SME use of patent databases for legal clearance searches, prior art searches or commercial intelligence searches. This is why IP Wales appointed its own Librarian with expertise not only in searching patent databases but also trademark and design databases.[[32]](#footnote-32)

The second recommendation was an open recognition that patent counts were not of themselves reliable indicators of the pace for innovation.

The third recommendation went further. It began by making the point that the present emphasis in the EU and UK on formal IP actually ignored the practical needs of most SMEs and stated that this had to be remedied. This was clearly correct. The IP Wales experience was its grant funding bodies had required it to operate on a rather artificial basis, in a way which had no practical commercial relevance to its SME clients. In seeking to operate an all Wales project the EU funding body had demanded the bureaucratic recording of two projects run in parallel.[[33]](#footnote-33) Welsh government funding was based upon the political expediency of IP Wales grant allocations being made across all local authority areas, with a heavy emphasis on supporting formal patent and trademark applications.[[34]](#footnote-34) Most artificial of all were the targets demanded for jobs created in high tech and non-high tech industries, together with jobs safeguarded. This often led to SMEs “trading” their employment growth for grant capture, whilst being placed at the risk of grant claw-back if their individual jobs targets remained unrecorded.[[35]](#footnote-35)

The final recommendation was a recognition that HEIs are unlikely to provide SMEs with significant IP assets and accordingly HEIs should concentrate their efforts on producing high-quality graduates. The IP Wales experience was that limiting HEIs to a purely teaching function is likely to be too restrictive. Consultants commissioned to undertake an independent review of the IP Wales business support function concluded, “IP Wales offers high levels of additionality, most SMEs would do nothing about IP issues without the program. Equally, little or no displacement is likely to arise, IP Wales clients would not be contacting Patent Agents or accessing other IP services in significant numbers”.[[36]](#footnote-36) Coming as it did from the university sector, the IP advice function of IP Wales was greatly valued by SME members, for many actually more so than the grant assistance on offer.

IP Wales has always sought to incorporate a vibrant research agenda to provide insight on national and international IP issues and inform policy-making decisions. Branding oneself as a research-led university is a badge of prestige within higher education but in truth UK universities often find their research strategies dictated not so much by usefulness as by the requirements of the research excellence framework (REF).[[37]](#footnote-37)

During its first phase of operation grant capture from the EU and Welsh Government for IP Wales research activities accounted for 99 percent of the Swansea Law School research income for the relevant RAE submission,[[38]](#footnote-38) with the success of that submission playing its part in enabling the University to claim to the UK Parliament that its “research base is now a significant driver of knowledge economy activity”.[[39]](#footnote-39) Moreover, research output from the IP Wales Research Director[[40]](#footnote-40) at the time helped to underpin his co-founding of Inngot, an IP identification and valuation company, which has gone on to undertaken IP policy work for a range of clients, including the UKIPO.

During the course of the next REF 2014 cycle IP Wales was commissioned by the Welsh Government to undertake research into “IP crime and eCrime”.[[41]](#footnote-41) The commissioning of this research was resultant from a presentation delivered by a local firm of solicitors[[42]](#footnote-42), at a WIPO event sponsored by the Welsh Government,[[43]](#footnote-43) which had highlighted the growing online threat of the piracy of software under eCommerce. The Report which emerged noted that “whereas online trademark abuses and copyright infringements are well documented our understanding of the relevance of the linkage between IP crime and eCrime to the SME sector is still in its relative infancy”.[[44]](#footnote-44) This Report was regarded as a success, and it led to a second commission by the Welsh Government. Under this the same author concluded, “the lack of awareness of security risks, such as distributed denial of service attacks, computer hacking, identity theft and phishing attacks is astonishing in a digital age, which boasts a high level of sophisticated IT crime”.[[45]](#footnote-45) The main message taken from the second report by its Commissioner was the paucity of SMEs trading online. This was not to say, however, that SMEs lacked any online presence and the Report went on to warn that of the small number of SMEs who were trading online at this time none viewed their cybersecurity as mission critical. Only one respondent allocated 10 percent or more of even their IT budget for cybersecurity, 80 percent did not scan staff emails for confidential information or have any controls over the use of memory sticks, 70 percent did not encrypt customer payment details and at that time almost 40 percent did not did not consider it necessary to encrypt their wireless network.

Using these reports as a foundation, IP Wales has since begun working with the IP service community[[46]](#footnote-46) in the current REF 2021 cycle to promote the impact of new research into the online protection of undisclosed information,[[47]](#footnote-47) by encouraging SMEs to adopt new methodologies and processes to protect their online commercial activities.

The UK Trade Secrets (Enforcement, etc.) Regulations 2018[[48]](#footnote-48) brought into force EU Directive 2016/943 *on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure*. When introducing this Directive the EU Commission recognized that, whereas large businesses may value trade secrets as much as patents and other forms of intellectual property, SMEs value and rely on trade secrets even more. The 537 firms surveyed by the EU Commission counted commercial bid documents and contracts as their most valuable trade secrets data.[[49]](#footnote-49) However, research out of the USA has identified technical information and know-how, internal business information and customer lists as the most likely trade secrets to be stolen (furthermore, in over 90 percent of trade secrets cases analyzed in the USA the defendant was an employee, or former employee or otherwise a business partner).[[50]](#footnote-50)

# Insights for the academic lawyer

## A – Business Support

IP Wales has been a unique business support project for any law school to manage. The challenge has lain not only in supervising IP Wales’s own activity but also in ensuring that SMEs outside of Wales can benefit from its insights.[[51]](#footnote-51) When seconding the Director of IP Wales to work at the (then) SME Division at the World Intellectual Property Organization (WIPO), the head of the Division observed that with a population of circa. 3 million Wales was big enough to count, yet small enough to manage as an observatory on SME use of the IP system.[[52]](#footnote-52)

Given their significance to the UK national infrastructure, the recently created UK National Cyber Security Centre (NCSC) has, not unnaturally perhaps, focused its efforts to date on the 0.1 percent of larger UK businesses. SMEs are nevertheless serviced via a Guide heralded by its Chief Executive as “one of the first in the world specifically for SMEs”.[[53]](#footnote-53) Yet one insight IP Wales is able to offer from its current work with the IP service community and cybersecurity specialist firms is the urgent need to raise awareness and understanding amongst IP active SMEs about the importance of cyber risk management and the preservation of trade secrets, as a function of board level corporate governance.[[54]](#footnote-54)

Whilst raising awareness of cyber risk management is recognized by the UK Government to be “a really challenging area”, its policy of “catalytic” intervention to promote cyber resilience within UK innovative businesses is considered to be a ”tier one priority”.[[55]](#footnote-55) Trade Secrets are recognized by the UK Government as constituting valuable business assets which can be used alongside, or as an alternative to formal intellectual property such as trademarks, patents, industrial designs, copyright etc..[[56]](#footnote-56)

In this connection the Trade Secrets (Enforcement, etc.) Regulations 2018have implemented an EU common framework definition for a “trade secret” and, in the view of the UK government, are well placed to provide a benefit to UK SMEs by clarifying how to protect their trade secrets when misappropriated.[[57]](#footnote-57)

The UK government takes the view that the EU Directive is broadly reflective of existing common law rules appertaining to confidential information.[[58]](#footnote-58) In *Gurry on Breach of Confidence* it is noted that the UK courts have tended to use the term “trade secret” in one of two ways, either for post-employment restraints legitimately imposed on former employees or (rather more relevantly here) “as a synonym for commercial or industrial confidential information…(with) two classes of trade secrets: technical secrets and business secrets”.[[59]](#footnote-59) Nevertheless, the implementation of the Directive does allow for some important potential changes in the immediate future, with SMEs forced to fall back upon the uncertainties and likely greater expense of the common law[[60]](#footnote-60) if they cannot satisfy the civil courts that they have taken ***reasonable steps under the circumstances to protect their trade secrets***.[[61]](#footnote-61)

Whilst UK jurisprudence under the Regulation remains to be developed, case law from the USA based upon the same or similar wording[[62]](#footnote-62) has already seen courts assessing the “reasonableness” of a businesses’ cybersecurity in terms of, identity and access management (password protection, “need to know” access, secure server storage), data security measures (USB use restrictions, distribution controls), perimeter and network defenses (firewalls, data encryption, online use restrictions), communication (pop-up warnings) and email monitoring.[[63]](#footnote-63)

Writing for the UK National Cyber Security Strategy 2016-2021 , the then Director of the Government Communications Headquarters (GCHQ) warned of the “industrial scale theft of intellectual property from our companies and universities”.[[64]](#footnote-64) Yet section 4.8 of the Strategy makes clear that “businesses and organizations must also understand that, if they are the victim of a cyber-attack, they (alone) are liable for the consequences.” Alec Ross, once Senior Advisor for Innovation to Hillary Clinton when she was U.S. Secretary of State, notes that, “small businesses cannot pay for the type of expensive cybersecurity protection that governments and major corporations can…there is an as yet unmet obligation by government to define its responsibilities...”.[[65]](#footnote-65) The author would suggest that a government-led IP cybersecurity communications campaigns targeted at SMEs making applications for patents, trademarks and registered designs would help to meet such an obligation. SMEs are by definition risk-takers and such a communications campaign would, in the experience of IP Wales, ensure that they become better informed risk-takers, when it comes to their digital resilience.

## B - Teaching

The fraught negotiations leading to TRIPs demonstrated the differing international approaches to intellectual property law within member states of the World Trade Organization (WTO). Current academic debate centers upon continuing tensions between states seeking to implement the Agreement’s “one size fits all” and now challenged philosophy of baseline IP laws, with differing perspectives from developed economy states and developing economy states highlighted.

The IP Wales experience is that differences in perspective due to economic standing are not only limited to what IP law ***is*** but also extend to what it can ***do*** when managed by SMEs, as compared to larger commercial entities. By way of illustration, IP Wales grant recipients undertaking PCT applications were typically seeking to commercially exploit this intellectual asset by way of licensing. Yet no SME member possessed the financial means to acquire, let alone police and enforce, patents in more than a handful of territories when reaching the time limit for entering the national/regional phase under PCT chapters I and II, a fact well known by the larger commercial entity with whom they were negotiating licensing terms. Moreover, this lack of resource is not only limited to finance. The small number of employees in a typical SME often means that its staff have to perform a multiplication of roles for which they may lack adequate training. One IP Wales grant recipient expressed bewilderment at the maintenance schedule and costs associated with the patent portfolio under their immediate supervision, whilst at the same able to recite a comprehensive understanding of the maintenance schedule and costs associated with a recently purchased piece of capital equipment.

Early concerns over potential friction developing between the IP Wales field officers and the IP service community proved to be unfounded, even when IP Wales field officers spent as much time illustrating to SMEs why the IP system might not be best suited to deliver their commercial objectives. Patent Attorney’s came to value the clear instructions SMEs were now able to provide under an already articulated intellectual assets strategy,

We have already seen that understanding how SMEs do manage and could manage their intangible assets requires a multi-disciplinary approach and that, unlike larger firms, left to their own devices most SMEs will not employ an IP strategy.[[66]](#footnote-66) Whereas the IP Wales experience ultimately led to the integration of management theory into intellectual property law for the purpose of postgraduate curriculum development, is there any evidence to support the reverse?

If a Master of Business Administration (MBA) is the “gold standard” in management and leadership education, then a review of the top 5 MBA programs within the UK[[67]](#footnote-67) offers some limited evidence to support this proposition. Based upon the IP Wales experience the question might now evolve into what extent, if any, does the teaching of management theory allow for a differentiation in use of intellectual property law by SMEs?

If one adopts a more international perspective, then Professor Leong[[68]](#footnote-68) offers the observation in “*Teaching IP in a Business School*” that business students are trained to be generalists. “Intellectual property law is not a core discipline in the business curriculum and may be offered only as an elective…the main learning objective is to provide them with adequate legal knowledge so that they are able to appreciate the implications of the law when making business decision. This is the challenge”.[[69]](#footnote-69) Based upon the IP Wales experience, such an approach reveals the need for contemporary research into how SMEs manage their intellectual assets in difference to larger entities.

## C - Research

With the staff census date for REF 2021 fast approaching,[[70]](#footnote-70) the thoughts of the UK academic community are already starting to turn towards future individual research plans for the next REF cycle. For the academic lawyer a number of rich potential seams of research present themselves for future exploration, one such being Article 39.2 of TRIPs.

The patent centric standpoint adopted by Chesbrough may well be reflective of large U.S. Corporations, but it does not accord with the IP Wales experience of SMEs, for whom trade secrets are proportionately a great deal more important.[[71]](#footnote-71) Recent support for this viewpoint has come from U.S. Trade Representative Michael Froman, announcing the adoption by his government as best practice a recognition that, “trade secrets may constitute the ***most*** critical intellectual assets…effective protection of trade secrets is especially important for mSMEs, which may be disproportionately affected by and less able to recover from a misappropriation compared to larger enterprises” (*emphasis added*).[[72]](#footnote-72)

An area of primary concern for the USA, as highlighted by Secretary of State Hillary Rodham Clinton in 2012, is “emerging powers are putting economics at the center of their foreign policies”[[73]](#footnote-73) and making commercial cyber espionage a central part of their policy toolbox.

Accordingly, it has been said that, “the threat of trade secrets theft to U.S. corporations conducting business internationally is a well-recognized and extensively documented phenomenon” and “top intellectual property priority” for investigation by the FBI.[[74]](#footnote-74) It was for this reason that the U.S. government reported it had been, “extremely active in Brussels in support of the EU trade secrets directive”, using its co-chairmanship of the Transatlantic IPR Working Group to push ”this topic to the forefront on EU action on intellectual property matters”,[[75]](#footnote-75) albeit this legislative initiative became ultimately only limited to the civil law domain.

It is sobering to note that according to the Director of the European Centre for International Political Economy (ECIPE), “there is no evidence or indication that cyber espionage against European firms is any lesser in scale than against other countries,” offering an estimation of “the cost of cyber espionage to Europe as 55 billion euros annually and 289,000 jobs at risk”.[[76]](#footnote-76)

In *the Protection of Data in our Digital Age* the authors note,

“in large measure the existing legal protection of trade secrets data is limited due to a low level of legal protection,[[77]](#footnote-77) issues of legal fragmentation both across and within differing legal jurisdictions around the world and problems associated with poor civil redress and criminal enforcement, including a failure to protect the confidentiality of trade secrets during legal proceedings. Difficulties in finding an agreed understanding of “trade secrets” and “know-how” resulted in TRIPS adopting the more neutral term “undisclosed information”, whilst at the same time refusing to offer any legal definition as to its meaning. In consequence, a recent study by the World Trade Organization has found that legal protection of confidential information in member states today derives from over 25 different fields of law.[[78]](#footnote-78) Moreover, TRIPS was negotiated at a time when the usage and storage of digital data was in its infancy, a global economy underpinned by employee mobility was still in creation and the notion of globally dispersed research and development driven by what was to become known as “open innovation” remained still to be discovered by the boards of most large multi-national corporations”.[[79]](#footnote-79)

With TRIPS now nearing its first quarter century of operation there are reassuring signs[[80]](#footnote-80) that the USA, Japan and EU are starting to form a “coalition of the willing”[[81]](#footnote-81) to work together on the margins of the TRIPS Council to elaborate upon the nature of the legal protection to be afforded under Article 39.2 for trade secret data, with a special emphasis on SMEs and emerging economies.

1. A. Zomer & P. Benneworth, The Rise of the University’s Third Mission, Reform of Higher Education in Europe, 82 (2011). [↑](#footnote-ref-1)
2. Henry William Chesbrough, Open Innovation the New Imperative for Creating and Profiting from Technology, (2003). [↑](#footnote-ref-2)
3. In 2002 SMEs accounted for all but 130 of the total 71,870 enterprises registered above the £55,000 turnover threshold for value added tax (VAT) in Wales. [↑](#footnote-ref-3)
4. Michela Loi & Maria Chiara Di Guardo, The Third Mission of Universities: An Investigation of the Espoused Values, 42 Science and Public Policy 855 (2015). [↑](#footnote-ref-4)
5. This was well expressed by the Deputy Chairman of IP Wales, Professor Andrew Davies AM (then Minister Economic Development and Transport, Welsh Assembly Government), “I was made aware of our need in Wales for this Business Support Initiative when judging the Finals of the ‘One2One’ Business Awards in 2000. Proper use of intellectual property assets is essential in order to create the ‘Dragon Economy’, a value-added, knowledge-based economy for Wales and the winning of the Award by the Swansea Pilot Project set the foundations for IP Wales.” Our First Year of Achievement,IP Wales Annual Report, 5 (2003). Professor Davies went on to describe IP Wales as a “**joint** business support and research initiative…recognized by the World Intellectual Property Organization (WIPO) as a ‘world-class’ example of best practice in business support”, Answer to National Assembly for Wales question OAQ33666, (Mar. 31, 2004). (*emphasis added*) [↑](#footnote-ref-5)
6. Lord Griffiths (Vice Chairman Goldman Sachs International), Our First Year of Achievement, IP Wales Annual Report, 4 (2003). [↑](#footnote-ref-6)
7. European Union funding of £1,065,021under ERDF Project ID 53611 approved 13 June 2002 (see Welsh European Funding Office (WEFO), Europe and Wales: Investing in your Future). [↑](#footnote-ref-7)
8. 53 x GB, 45 x PCT, 34 x EP, 31 x US, 10 x CA, 5 x AU, 4 x DE, 2 x CN/FR/IT/JP/NZ/NO/PL/ES, 1 x BR/HK/IN/IE/IL/SG/ZA, Making a Difference to the Dragon Economy, IP Wales Annual Report, 5 (2005). [↑](#footnote-ref-8)
9. 23 x GB, 20 x CTM (now EM), 13 x US, 2 x CA, 1 x AU/NZ, Making a Difference to the Dragon Economy, IP Wales Annual Report, 6 (2005). [↑](#footnote-ref-9)
10. 3 x GB/US, 2 x CDR (now EM), 1 x AU/CA/FR/DE, Making a Difference to the Dragon Economy, IP Wales Annual Report, 6 (2005). [↑](#footnote-ref-10)
11. In recognition of which IP Wales was the recipient of the Judges Special Award at the WORLDleaders European Intellectual Property Awards (2004). [↑](#footnote-ref-11)
12. QED became a subsidiary of Innovation Development on 13 May 2004, which in turn became part of Novagraaf Ltd. on 1 February 2008. [↑](#footnote-ref-12)
13. QED Intellectual Property a scipher company, Evaluation and Validation of Intellectual Property by IP Wales Grant Award Candidates, (2004). [↑](#footnote-ref-13)
14. Whereas the QED experience was “know-how” is often the most valuable element of any SME invention. [↑](#footnote-ref-14)
15. Whereas the QED experience was most inventions present only minor technical advances. [↑](#footnote-ref-15)
16. Jane Lambert, IP Insurance, nipc inventors club, (Aug. 7, 2018, 3:31 PM), <http://nipcinvention.blogspot.com/2005/09/ip-insurance.html>. [↑](#footnote-ref-16)
17. Andrew Beale, The Challenges of a Dynamic Digital World, 5th Annual MarkMonitor Anti-Piracy Conference (2016). [↑](#footnote-ref-17)
18. This figure is comparable with the UK average for businesses only surviving into their fourth year of operation (see UK Office for National Statistics, Business demography, UK:2016). [↑](#footnote-ref-18)
19. Merchant Savvy, UK SME Data, Statistics and Charts, (Aug. 9, 2019, 10:30 AM), <https://www.merchantsavvy.co.uk/uk-sme-data-stats-charts/>. [↑](#footnote-ref-19)
20. EP, GB, JP, US, CA. [↑](#footnote-ref-20)
21. Namely, a Superconducting Quantum Interference Device (SQUID). [↑](#footnote-ref-21)
22. Andrew Beale, New and Improved Programs and Services of IP Offices and Innovation Institutions for Supporting the Business Use of IP Assets, 6th Annual World Intellectual Property Organization (WIPO) Forum on intellectual property and small and medium-sized enterprises for Intellectual Property offices and other relevant institutions in the Organization for Economic Co-operation and Development (OECD) countries (2008). [↑](#footnote-ref-22)
23. Welsh Assembly Government Economic Development and Transport Committee, Review of Wales Science Policy, 2 (2006). [↑](#footnote-ref-23)
24. Chesbrough, supra, 156. Illustrative perhaps of this viewpoint is M.J.R. Blackman, Rembrandts in the Attic: Unlocking the Hidden Value of Patents, (2000) . [↑](#footnote-ref-24)
25. Steve Manton, Integrated Intellectual Asset Management, (eBook ed. 2017). [↑](#footnote-ref-25)
26. Robin Jacob et al., Guidebook to Intellectual Property, (6th ed. 2013). [↑](#footnote-ref-26)
27. Intellectual Property and Innovation Management in Small Firms, (Robert A. Blackburn, 2003). [↑](#footnote-ref-27)
28. The Economic and Social Science Research Council (ESRC) held a one-day workshop by invitation hosted by the UKIPO leading to an “Intellectual Property Initiative” funded research program. [↑](#footnote-ref-28)
29. Blackburn, supra, 3. [↑](#footnote-ref-29)
30. Id., at 1. [↑](#footnote-ref-30)
31. IP Wales was awarded PATLIB status by the European Patent Office in 2003, the first such center for Wales. [↑](#footnote-ref-31)
32. Under a Trademark awareness project, the IP Wales Librarian carried out a trademark search for each SME member based upon their trading name and brand name(s). Out of the 1,456 SME members at that time, 99 owned trademarks protecting their trading name and brand name(s), 125 owned a trademark protecting their trading name only. The reminder had no trademark protection, with 265 SMEs alerted that they risked infringing a third party’s trademark registration. [↑](#footnote-ref-32)
33. Objective One Region co-funded via grant by the EU and the Welsh Development Agency (WDA- now subsumed into the Welsh Government), Non-Objective One Region grant funded by the WDA. [↑](#footnote-ref-33)
34. IP Wales targets of 100 patent applications and 66 trademark applications, were apportioned by population to the Objective One Region and Non-Objective One Region. [↑](#footnote-ref-34)
35. The artificial nature of the process is perhaps best illustrated by the SME grant applicant who responded to an IP Wales request to review their business plan, “yes of course, which one would you like to see?”. [↑](#footnote-ref-35)
36. CRG Research, An Evaluation of IP Wales (Phase 1) Final Report, 17 (2003). [↑](#footnote-ref-36)
37. REF was first carried out in 2014, replacing the previous research assessment exercise (RAE). It is undertaken by the four UK higher education funding bodies for England, Scotland, Wales and Northern Ireland with the purpose of: providing accountability for public investment in research along with producing evidence of the benefits of such investment, providing benchmark information and establishing a reputational yardstick and informing the selective allocation of public funding for research. [↑](#footnote-ref-37)
38. Placing it within the top 20 of UK Law Schools for grant capture. [↑](#footnote-ref-38)
39. Welsh Affairs Commons Select Committee, Written evidence submitted by Swansea University, 1.2 (HC 854). [↑](#footnote-ref-39)
40. Professor Iwan Davies, appointed as Vice Chancellor, Bangor University 2019 (see I. R. Davies, Secured Financing of Intellectual Property Assets and the Reform of English Personal Property Security Law, 26 Oxford Journal of Legal Studies 559 (2006). [↑](#footnote-ref-40)
41. Jane Foulser-Mcfarlane, Report prepared for the Welsh Assembly Government on IP Crime and eCrime, (2009). [↑](#footnote-ref-41)
42. Clarke & Hartland, now CJCH Solicitors. [↑](#footnote-ref-42)
43. See Beale, supra, (2008). [↑](#footnote-ref-43)
44. Foulser-Mcfarlane, supra, 3. [↑](#footnote-ref-44)
45. Jane Foulser-Mcfarlane, Intellectual Property Rights: Infringement and Enforcement Issues in IP Wales funded businesses, Conclusion (2011). [↑](#footnote-ref-45)
46. IP active solicitors and patent attorneys (see Volume 47, Chartered Institute of Patent Attorneys Journal, Cybercrime: Welsh Initiative should be a wake-up call across the UK 14 (2018)). [↑](#footnote-ref-46)
47. Andrew Beale et al., The Protection of Data in our Digital Age, 6 Journal of Business Law, 461 (2017). [↑](#footnote-ref-47)
48. SI 2018/597. [↑](#footnote-ref-48)
49. Report prepared for the EU Commission contract number MARKT/2011/128D, Study on Trade Secrets and Confidential Business Information in the Internal Market 12 (2013). [↑](#footnote-ref-49)
50. Id., at 107 (see Almeling et al. (2010) and (2011). [↑](#footnote-ref-50)
51. Merchant Savvy, supra, (2019) – of the 5.7 million businesses in the UK at the start of 2018, 99 percent are SMEs and 96 percent employ fewer than ten people. [↑](#footnote-ref-51)
52. Dr. Guriqbal Singh Jaiya, Director SME Division WIPO during the two years secondment period 2007-8. [↑](#footnote-ref-52)
53. Public Accounts Committee of the House of Commons, Cybersecurity in the UK (Oral evidence of Witnesses: Sir Mark Sedwill, Cabinet Secretary and Head of the UK Civil Service, and UK National Security Advisor, Madeleine Alessandri, Deputy National Security Advisor, Cabinet Office, and Ciaran Martin, Chief Executive, National Cyber Security Centre) HC 1745, at Q.123. [↑](#footnote-ref-53)
54. See www.ipcybersecurity.co.uk. [↑](#footnote-ref-54)
55. Public Accounts Committee of the House of Commons, supra, Q.99. [↑](#footnote-ref-55)
56. Explanatory Memorandum to the Trade Secrets (Enforcement etc.) Regulations 2018 No.597 at section 7.1. [↑](#footnote-ref-56)
57. Id., at 11.2. [↑](#footnote-ref-57)
58. UK Intellectual Property Office, Consultation on draft regulations concerning trade secrets, 10 (2018). [↑](#footnote-ref-58)
59. Tanya Aplin et al., Gurry on Breach of Confidence 6.06 (2nd ed. 2012). [↑](#footnote-ref-59)
60. Section 3 of the Trade Secrets (Enforcement, etc.) Regulations 2018 provides for “wider protection” under the common law for breach of confidence in confidential information. [↑](#footnote-ref-60)
61. Article 2 Definitions: “For the purposes of this Directive the following definitions apply: (1) ‘trade secret’ means information which meets all of the following requirements: a) it is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question; (b) it has commercial value because it is secret; (c) it has been subject to **reasonable steps under the circumstances**, by the person lawfully in control of the information, to keep it secret; (*emphasis added*). [↑](#footnote-ref-61)
62. Article 39.2 of the Agreement on Trade-Related Aspects of Intellectual Property Rights is based upon the provisions of the U.S. Uniform Trade Secrets Act of 1985. [↑](#footnote-ref-62)
63. Center for Responsible Enterprise and Trade, The Importance of Cybersecurity for Trade Secret Protection: Developments in trade secrets cases and the growing role of the NIST Framework (2016). [↑](#footnote-ref-63)
64. Robert Hannigan, UK National Cyber Security Strategy 2016-2021, 28 (2016). [↑](#footnote-ref-64)
65. A Ross, Industries of the Future, 150 (2016). [↑](#footnote-ref-65)
66. Blackburn, supra, 35. [↑](#footnote-ref-66)
67. The UK Complete University Guide 2019 ranks 1. London Business School 2. Cambridge Judge Business School 3. Said Business School 4. Alliance Manchester Business School 5. Cass Business School. [↑](#footnote-ref-67)
68. (then) academic director of the National University of Singapore (NUS)/PKU International MBA program. [↑](#footnote-ref-68)
69. Susanna Leong, Teaching of Intellectual Property Principles and Methods: Teaching IP in a Business School, 198 (Yo Takagi et al., 2008). [↑](#footnote-ref-69)
70. 31July 2020. [↑](#footnote-ref-70)
71. Chesbrough, supra, - the author makes over two hundred references to patent(s) during the course of his deliberations, as compared to a mere three references to trade secrets. [↑](#footnote-ref-71)
72. Mike Palmedo, APEC Ministers Endorse Best Practices in Trade Secret Protection and Enforcement Against Misappropriation , infojustice.org, (Aug. 8, 2019, 12:30 PM), <http://infojustice.org/archives/37372>. [↑](#footnote-ref-72)
73. Hillary Rodham Clinton, Delivering on the Promise of Economic Statecraft, U.S. Department of State: Diplomacy in Action (Aug. 16, 2019, 3:30 PM), <https://2009-2017.state.gov/secretary/20092013clinton/rm/2012/11/200664.htm>. [↑](#footnote-ref-73)
74. Department of Justice, Report to Congress Pursuant to the Defend Trade Secrets Act, 2, 6, (2018). [↑](#footnote-ref-74)
75. Id., at 20. [↑](#footnote-ref-75)
76. Hosuk Lee-Makiyama, Stealing Thunder, (2018), <https://ecipe.org/publications/stealing-thunder/>. [↑](#footnote-ref-76)
77. Jacob, supra, 205 – “Trade secrets are non-exclusive, so it is not a misappropriation to independently discover the secret information or otherwise reverse engineer it from a properly obtained source. Moreover, trade secrets have been described as ‘too slippery’ for any higher legal protection because information is not treated in law as property”. [↑](#footnote-ref-77)
78. World Intellectual Property Organization, Survey on Technology Transfer Agreements and Antitrust, (2013). [↑](#footnote-ref-78)
79. Beale et al., supra, 466. [↑](#footnote-ref-79)
80. Department of Justice, supra, 19. [↑](#footnote-ref-80)
81. Public Accounts Committee of the House of Commons, supra, Q.93. [↑](#footnote-ref-81)