

Disruptive Solutions to Problems Associated with the Global Knowledge-Based/Digital Economy

A CULTURAL ECONOMICS ESSAY

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Introduction

As a Canadian I am citizen of a bi-lingual, bi-cultural and bi-juridical Nation-State that is multicultural and, after long last, increasing appreciative of its First Nations and their diverse patrimony. As an economist I am an institutionalist who believes that constrained maximizing behaviour, *a.k.a.*, economic behaviour, takes place in the context of culture and law. Ignore the culture and you end up in the cannibal's cooking pot; ignore the law and you end up in jail. These are not maximizing outcomes.

As a scholar I am concerned with the emerging global knowledge-based economy. In this economy the product 'knowledge' can only be marketed and sold due to artificial intellectual property rights (IPRs) created by the State – copyrights, patents, registered industrial designs and trademarks. It is this intersection of law and economics that will define the future global Knowledge-Based/Digital Economy (KB/DE) together with the new technologies – physical, organizational and design - that underpin it.

In this essay I explore the nature and future of this new economy and the problems associated especially those resulting from the existing Anglosphere IPR regime (English-speaking Nation-States practicing Common Law & Equity especially Australia, Canada, New Zealand, the United Kingdom and the United States).

The Problems

1. The Global Knowledge-Based/Digital Economy

In 1996 the Organization for Economic Cooperation & Development (OECD) published *The Knowledge-Based Economy* (KBE) followed in 1997 by *National Innovation Systems* (NIS). In effect, the OECD advised its members – the advanced industrial democracies of the First World – to shift from an industrial economy of mass production to a post-industrial economy of invention and innovation. As one sage argued: Would you rather your daughter be a seamstress or a fashion designer? The menial job of manufacturing with its attendant externalities like pollution was to shift to low wage emerging 'democracies' of former Second World command economies and the developing Nation-States of the Third World. All were now governed by the World Trade Organization established in 1995. Coincidentally, Microsoft introduced Windows '95 bundled with Internet Explorer in the same year.

Among OECD members Anglosphere countries took the advice most to heart. For them a KBE was to be based on the Natural & Engineering Sciences (NES) fostered through schooling in STEM – Science, Technology, Engineering & Mathematics. These efforts were to be forged into a national innovation system connecting university researchers with the commercial sector enhancing national competitiveness.

With the exception of Finance, the Humanities & Social Sciences (HSS) and the Arts were downgraded as sources of relevant knowledge. Nonetheless, the HSS generate organizational technology like ‘just in time’ inventory systems. The Arts generate design technology, *e.g.*, design patents protecting Apple products and copyrights defending Disney’s Magic Kingdom.

In the following decade the Anglosphere successfully innovated a global KBE driven by mass consumption *and* production of knowledge called, respectively, *Content* and *Big Data*, *e.g.*, the so-called FANGS – Facebook (2005), Amazon (1995), Netflix (2007 streaming) and Google (1998). Psychographic profiles of consumers and voters are but two outputs from data mining social media where consumers *willingly* provide new knowledge to the FANGs and other private and public entities, online with a click. Concern about the protection of such personal information has become a geopolitical issue particularly in the European Union.

The Anglosphere also innovated exotic financial products like Collateral Debt Obligations (CDOs) to further the *securitization* of investment. Financial innovation was seen, by many, as the leading edge of the Anglosphere KBE. Such financial instruments as well as trade in stocks and bonds accelerated with an ever faster and expanding World-Wide-Web (WWW) energized by digital computer algorithms fueling *high speed trading* and associated *flash crashes*. Finance is now one of the largest industries in the Anglosphere. Alas, such financial innovations instead of securing the financial future set off the Great Recession of 2008 or what is now known as the ‘Long Recession’.

The digitization of Finance, Content and Big Data highlights the unique nature of the current knowledge/communication revolution. The shift from manuscript to print to typewriter to word processor, from painting to photography to motion picture to television, from memory to sheet music to sound recordings to radio, were one-to-one transformations upgrading existing media. The digital revolution, however, involves converting all forms of communication – sight,

sound and text as well as computer and genetic code - into one digital format. In future, 6G internet protocols promise conversion of even physical objects into the ‘internet of things’.

Thus the KBE and the Digital Economy are effectively becoming one. The merging of the two is highlighted by five developments. First, in 1995, under pressure from the US, the *Trade Related Intellectual Property and Services Agreement* (TRIPS), part of the WTO, successfully pressed for inclusion of computer software as ‘literary and artistic property’ for purposes of the 1886 *Berne Convention on the Protection of Literary & Artistic Property*. Software, of course, is the foundation of the Digital Economy. The inclusion means software became the only intellectual property protected three ways: by copyright, patent and trade secrets.

Second, in 1996 the World Intellectual Property Organizations’ (WIPO) Copyright and Performance & Phonogram Treaties (WCT and WPPT, respectively) recognized a new form of intellectual property, ‘digital management rights’ (DMRs), protecting Content at the global level.

Third, the 2001 bankruptcy of a major American firm, Global Crossing, allowed, for the first time, non-American companies to take ownership of one of the hardware backbones of the WWW specifically in South-East Asia. This facilitated, among other things, growth of India as a software powerhouse and development of its off-shore call centres as well as establishing China, through a digital supply chain, as the post-industrial factory of the world.

Fourth, there is the growing cyber threat in the guise of foreign and industrial espionage as well as criminal activity including piracy and *bribe-ware*: Nice knowledge base. Shame if something were to happen to it!

Fifth, as recently noted by the former CEO of IBM, Sam Palmisano, in his article “The Global Enterprise” of October 14, 2016 in *Foreign Affairs*, there has been:

... an explosion of data, and with it a re-calculation of economic value - asset values - affiliated with this data-rich environment.

Tangible assets, which are characteristic of the physical world, are being subjected to the economic headwinds of slow global growth. But intangible assets, which are characteristic of the digital world,

are finding their value increasing and economic wind at their back.

Today the entire global economy is based on a digital web of knowledge not just in a formal sense but also defining who one is, where one lives, one's bank balance, what books one reads, what channels and sites one surfs – Big Data. The concept of privacy in a KB/DE is problematic, the protection of private digital information even more so.

A KBE, however, can only exist through State intervention. In economic theory such an economy is a contradiction in terms - an oxymoron. Knowledge is a public good, a good for which a natural market does not and cannot exist. How can there be a market if the good sold can be easily appropriated and its appropriation does not reduce inventory? It is only through Law enforced by the coercive power of the State. Put another way, without Government there can be no KBE.

Such Law takes the form of intellectual property rights (IPRs) including statutory copyright, patent, registered industrial design (design patent in the US) and trademark as well as contract law governing confidentiality, non-disclosure and non-compete provisions of employment and other business agreements. IPRs provide the legal foundation for the industrial organization of the KBE. IPRs are, however, more a *privilege* granted by the State than an inherent *right*.

Furthermore IPRs protect only new knowledge. They are time limited monopolies granted and enforced by the State. Once they expire such knowledge is *intended* to flow into the public domain where it may be used freely by one and all to encourage learning.

The legal foundation of the KBE is legislated by Government setting the rules of the game and, in the Anglosphere, by Common Law courts on a case-by-case basis. They set precedents that often overturn existing legislation. Thus it was Common Law courts in the United States that first recognized patents and copyrights for software and patents for biotech organisms overturning decisions of the Patent and Copyright Offices.

With the exception of a few new IPRs like DMRs, the IPR regime evolved before and during the Industrial Age. Arguably it served well then but not so much in the emerging post-industrial KBE. Originally intended to provide an incentive for new knowledge the current regime has, according to many observers, become an

impediment stifling competition and innovation. Impediments include, among other things: patent thickets as defensive and aggressive weapons in patent wars (think Apple and Samsung); copyright and patent abuse by rights holders; and, cyber-trolling of individual consumers and producers. Some observers suggest that high tech American firms today spend more on legal defense of existing intellectual property than on research & development.

In 1992 this antiquated IPR regime was called *a panda's thumb* by economist Paul David: “a striking example of evolutionary improvisation yielding an appendage that is inelegant yet serviceable”. Arguably by 2016 it is far less serviceable and generates unintended consequences including growing income inequality especially in the Anglosphere.

2. *Income Inequality*

A decade before the OECD published *The Knowledge-Based Economy* the effects of what was then called the Information Economy began to be felt in the Anglosphere especially in the United States. Improved information technology contributed to the flattening of the corporate pyramid with middle management being squeezed out. At the same time the ratio of income earned by workers on the shop floor compared to the Chief Executive Officer (CEO) of major corporations shifted from about 1:30 to today's 1:300+ in the US and the Anglosphere generally. In Western Europe and Japan the ratio remains much lower.

At the same time middle management was being squeezed out industrial unions in the United States went into steep decline from representing as much as 30% of the workforce to today's roughly 7% or less. As collective bargaining declined as a force to maintain the income of workers it was replaced by increasing contract, part-time and self-employment often without supplementary benefits like health care. This occurred even in the ivory tower of universities and colleges where adjunct or sessional employment increasing displaced tenured professors.

With establishment of the World Trade Organization in 1995 the Anglosphere experienced the greatest de-industrialization relative to the Nordic Countries, Germany, Japan, Taiwan and South Korea. Former industrial centres became *rust belts* of decaying factories. This resulted primarily from increasing automation displacing labour by

capital equipment as well as shifting production off shore to the low wage countries of the former Second and Third Worlds.

The structure of working life also changed. Life-long employment was replaced by life-long learning with today's college and university students expected to have four careers, not jobs, in one's life time. Retirement was replaced by retreading and going back to school, again and again and again as pensions shifted from fixed to variable benefits dependent on the performance of the stock market and financial instruments in general. In fact the benefits of the KBE went overwhelmingly to the top 1% and even 0.1% of income earners. These include hedge fund managers using financial innovations to earn billions of dollars a year and the founders of high tech firms like the FANGs relying on IPRs that saw Bill Gates, Mark Zuckerberg and others become the richest persons on the planet. Meanwhile the middle class shrank and continues to shrink with those left behind by globalization expressing their discontent in populist movements across the First World ranging from Brexit in the UK to the National Front in France to Donald Trump and Bernie Sanders in the United States.

3. Liberal Social Order

The Liberal Social Order arose out of four revolutions beginning with Cromwell's Commonwealth beheading of the divine right of kings in 1649. It expanded with the Glorious Revolution of 1686 establishing a constitutional monarchy subject to what Jeremy Bentham called 'legislative omnicompetence' of the Houses of Parliament – the House of Commons elected by the people and the House of Lords Spiritual & Temporal.

The American Revolution of 1776 overturned the ancient regime of subordination by birth and separated Church from State. Those born above stairs ruled; those born below stairs served. Lords and Ladies were no more only *We the People*. Initially, of course, the People included only white males or what Canadian journalist Richard Gwyn once called 'the pale penis people'. Similarly while the Revolution rejected a national church it was nonetheless Deist basing individual rights on the will of a generic God. Subsequently the American dollar would carry the motto: *In God We Trust*.

Furthermore, while the American Revolution overthrew the ancient regime it adopted Common Law & Equity that evolved in England beginning with the reign of Henry II in the 12th century. Common Law essentially deals with questions of guilt or innocence,

right or wrong based on precedent according to the principle of *stare decisis*. Equity deals with questions of fairness based on concepts like horizontal and vertical equity, *i.e.*, unlike treatment of unlike *vs.* like treatment of like.

The French Revolution of 1789 took things further. Not only did it overthrow the ancient regime of subordination by birth, it banned religion from civic affairs replacing it with ideology (a term coined by Condillac, a contemporary of Adam Smith) meaning ‘the science of ideas’. This took the form of an extreme secularism subsequently called *Laïcité* that prohibits religious influence in government policies. The Revolution also based the rights of the individual not on the will of a god but on Natural Rights that were imprescriptible (cannot be signed away) and applied to all the People – male, female, black, white, *etc.* The Revolution also overthrew French common law and replaced it with the Napoleonic Code (subsequently the Civil Code) based on Natural Rights. They made a clear separation of the rights of the Natural Person or Citizen and the rights of bodies corporate or Legal Persons.

By contrast Anglo-American Common Law retained legal traditions and precedents from the feudal past including business law. Thus for one hundred years after the *Statute of Monopolies* of 1624 prohibited royal grants of industrial privilege, business law evolved through a process of Common Law courts converting customary bargains and business practices of guilds and corporations into a common law of property and liberty. However, as noted by John R. Commons in his seminal 1923 *The Legal Foundations of Capitalism* while “the monopoly, the closed shop, and the private jurisdiction were gone ... the economics and ethics remained”.

One implication was ongoing conflation of the rights of Natural and Legal Persons. Under Common Law & Equity, Legal and Natural Persons essentially enjoy the same rights. In the constitutional monarchies of the British Commonwealth this legal fiction flows from the concept of the Crown. The State is thus fictionally represented as the monarch, a human personality.

In the US similar treatment of Legal and Natural Persons began with the 1886 decision in *Santa Clara County vs. the Southern Pacific Railway*. Until then corporations were limited to the functions and States for which and in which they were chartered. In this case the railway successfully invoked the 14th Amendment of the US Constitution intended to protect former slaves from discrimination.

Subsequent Common Law court rulings followed including *Citizens United* in which the Supreme Court in 2010 extended freedom of expression guaranteed by the 1st Amendment to corporations as ‘persons’. This decision squashed federal limitations on political fund raising by corporations. In 2013, in *Hobby Lobby*, a privately owned corporation using the *Citizens United* decision successfully argued before the Court of Appeals and then the Supreme Court that freedom of religious expression of a corporation is similarly protected under the 1st Amendment.

Furthermore, the 1624 *Statute of Monopolies* exempted intellectual property from the prohibition against monopolies granted by royal prerogative. Thus what today is known as copyright remained vested by the Crown (and subsequently by Cromwell) in the Stationer’s Company of London until 1710. All rights were assumed by the printer, *i.e.*, copyright was a printer’s right not an author’s right. With passage of the *Statute of Queen Anne* in 1710 the author was for the first time noted as the initial owner but continuing the practice of Common Law courts the customary bargains and business practices of the guilds, in this case the Stationer’s Company of London, were retained and all of an author’s rights remained assignable to the publisher. The first Copyright Act in the United States of 1790 essentially adopted the *Statute of Queen Anne* as well as the customary practice of allowing assignment of all rights to a publisher. Subsequent court cases in both the US and UK confirmed that the author had no imprescriptible rights after publication. Furthermore, in the case of a work authored by an employee or contract writer the author had no rights, not even the paternity right to claim authorship. Copyright is claimed in the name of the employer usually a body corporate, a Legal Person.

Similarly in the UK patents of invention remained subject to the royal prerogative until the first Patent Act of 1852. In the US the first Patent Act was passed in 1790 and subsequent American bureaucratic experience provided the foundation for the first multilateral intellectual property rights treaty, the 1883 *Paris Convention for the Protection of Industrial Property*. In contrast to copyright, a US patent can be granted only in the name of a Natural Person, the inventor. Thus while an employee may assign all economic rights to the employer the employee retains the right of paternity, *i.e.*, to claim the work as one’s own.

In France, however, the overthrow of the common law of precedent permitted a distinction to be made between the rights of

Natural and Legal Persons and a re-think of author's rights. In France, at the time of the British *Statute of Monopolies* (1624), a manuscript was submitted to the chancellor's examiners to decide its appropriateness for publication. If approved, a 'privilege' was granted to the printer, perpetual at the pleasure of the Crown. The Community of Sellers and Printers of Paris, founded in 1618, cooperated, like the Stationer's Company in London, with examiners and police in investigating foreign works. Furthermore, by assisting royal agents on raids, officers of the Paris community made certain that provincial sellers and printers complied with the regulations.

The *Code de la librairie* (the Publisher's Code) established regulations for Parisian publishing in 1723 and was extended to the entire nation in 1744. It contained no legal recognition of the author. Rather it stated ideas were a gift from God revealed through the writer. They could not be owned or sold by the author. The power to determine what was truly God's knowledge belonged not to the author but to God's representative on earth, the king who had the exclusive right to determine what could be printed, by whom and for how long it would be protected.

In 1777 things changed. Royal degrees were issued breaking the printing monopoly. They recognized the author for the first time and granted *privilèges d'auteur* or author's privilege in perpetuity to one's heirs. Publishers' privileges (*privilèges en librairie*), by contrast, were limited to the lifetime of the author and non-renewable. In effect, the publisher became an agent of the author.

During the French Revolution, however, perpetual author's rights were sacrificed in favour of the public domain. Copyright was limited to the life of the author plus ten years because the revolutionaries wanted to convert the author, seen as a creature of royal privilege, into a public servant, the model citizen. The focus was the public good – the public domain (a term that did not enter the Anglosphere lexicon until the 1886 *Berne Convention on the Protection of Literary and Artistic Property*).

The French revolutionaries also drew on the theory of Natural Rights to recognize the imprescriptible moral rights of the author. Such rights are separate and distinct from economic rights associated with a work. In this they drew heavily on Immanuel Kant who considered an author's work not an object but an extension of a human personality and subject to protection as such. It was a fundamental imprescriptible human right.

Like the modern concept of author's rights and the public domain, the concept of cultural property also arose during the French Revolution. Until then the overthrow of a regime was followed by the wholesale destruction of its signs and symbols. Abbe Grégoire, who coined the term 'Vandalism', successfully argued before the National Assembly that such works were not symbols of the old regime but rather reflected the genius of French artists, artisans and craftpersons and, using Kant's argument, they were extensions of human personality deserving of protection.

The Liberal Social Order emerged from these four republican revolutions. It is an order based on the primacy of the Natural Person. The Anglosphere, however, retains feudal practices two of which are critical to the evolution of the KBE. First, it continues to conflate the rights of Natural and Legal Persons. Second, it treats creations of the mind like physical commodities, so many pork bellies, to be bought and sold with little consideration for their creator. A recent example concerns the estate of Bob Marley. Inspired by revolutionary anti-capitalist ideals his song book was, after his death, used, figuratively speaking, to sell everything from toilet paper to peanuts. When his family objected an American court found in favour of Island Records because legally Marley was an employee with no copyright let alone moral rights to his works.

The waters are further muddied given the contrast between US treatment of patents that can only be granted in the name of a Natural Person, employee or not. Such differential treatment is arguably not consistent with the American Constitution, Article I, Section 8 which states:

The Congress shall have Power . . . To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries;

Disruptive Solutions

To deal with problems associated with the KB/DE I propose seven highly disruptive solutions.

1. Social Change Insurance

First, it is clear from rising populist protests that programs intended to transition workers dislocated by the global KBE to new jobs have failed. Existing programs must be strengthened and future trade

agreements take greater account of and compensate for negative effects on the existing and future workforce. More generally a system of social change insurance is required to compensate those damaged, through no fault of their own, by necessary social change including not only the effects of globalization but also forces such as automation and climate change, *e.g.*, compensating homeowners to move away from flood plains to minimize social costs. Change is the future. Those damaged by change will resist unless fairly compensated.

2. *Three-Legged KBE*

Second, in the Anglosphere the national innovation system underpinning the KBE is arguably too focused on the NES and STEM education. Physical technology emerges from the NES but organization technology emerging from the HSS is required to successfully innovate (bring to market) inventions. Similarly, design technology emerging from the Arts (think Apple and Disney) is required to make innovations consumer friendly. Think of a three-legged KBE stool: NES, HSS & the Arts. In this regard some observers recommend an educational shift to STEAM – Science, Technology, Engineering, Art & Mathematics.

Realistically, how many can become rocket scientists? There are other important ways of knowing that can employ vastly larger numbers of workers trained in the HSS and Arts. Furthermore, many observers believe that increasing automation of *all* repetitive activities means it is inter-personal human skills that will be required of the future workforce, *i.e.*, skills learned through the HSS and the Arts.

3. *Big Data, User Content & Personal Information*

Third, a new knowledge component has been added for which the OECD's 1996 *The Knowledge-Based Economy* could not take account – social media and Big Data. Accordingly, it could not foresee protection of personal information becoming a geopolitical issue. The scale of the problem is highlighted in Jacob Weisberg's "They've Got You, Wherever You Are", *New York Review of Books*, October 27, 2016 where he notes:

Facebook's vast trove of voluntarily surrendered personal information would allow it to resell segmented attention with unparalleled specificity, enabling marketers to target not just the location and demographic characteristics of its users, but practically any conceivable taste, interest, or affinity.

And with ad products displayed on smartphones, Facebook has ensured that targeted advertising travels with its users everywhere.

This brings us to the current EU/US dispute about safe harbour of personal information. Basically under Common Law & Equity personal information given through an electronic check-box contract to a corporation is like any other piece of corporate property to be bought and sold according to corporate interest at any point in time subject only to national law. Under the European Civil Code, however, personal information is an extension of a human personality and subject to “inalienable, unattachable, imprescriptible and unrenounceable” moral rights. That moral rights is an inherent principle of the Civil Code is demonstrated by the fact that in France no statutory requirement existed until 1957, arguably due to US pressure to formalize the principle.

The recent clash of legal philosophies arguably made its first public appearance when the European Court recognized (2012) the ‘right to be forgotten’ on all internet search engines. There is no doubt that European e-envy of the ‘American Big Five’- Amazon, Apple, Facebook, Google and Microsoft – adds fuel to the fire. The reality, however, is that personal information in the EU is subject to moral rights currently alien to Anglosphere Common Law and Equity.

How is such a fundamental clash of legal philosophies to be resolved? One solution proposed by two US lawyers, Jack M. Balkin and Jonathan Zittrain, in their article “A Grand Bargain to Make Tech Companies Trustworthy”, *The Atlantic*, Oct. 3, 2016, is a public official called *an information fiduciary* appointed to oversee corporate use of personal information of consumers, employees and other members of society. An alternative solution is for Common Law through Equity to recognize moral rights attached to personal information.

4. Software: A Sui Generis Right

Fourth, the ongoing deterioration of the existing IPR regime can, at least in part, be attributed to the inclusion of software as ‘a literary or artistic property’ for purposes of copyright. As previously noted software is the only form of intellectual property protected by copyright, patent and trade secret (think the kernel to the Windows operating system).

Copyright lasts 50 years in Canada and 70 years in the United States. How many generations of software will have passed? Patents

last about 20 years and industrial designs about 15 years. The typical computer operating system has a shelf life of about 5 years.

Given increasing ‘object based programming’ which uses snippets of pre-existing base code, overtime such objects may need editing to work with new code. One writer describes the job of doing so as a *computer diplomat*. As the sheer size of future software programs grow many such objects may become junk genes, leftovers of a distant generational past. Protected by copyright and/or patent, however, editing may constitute infringement. Case law will determine the question but on an evolving case-by-case basis often set by precedent in Common Law countries especially the United States.

Given the unholy trinity of protection it will be a long drawn out and costly process as indicated by the increasing number of software patents and copyrights granted and infringement law suits lodged in the US. Inevitably this will stifle development of the Digital Economy. For the KB/DE to fully flower software should be protected by a *sui generis* or one-of-a-kind set of rights as is the case with integrated circuit topographies. The terms and conditions of such a new more progressive right would grandfather past grants of privilege until they expired. This has been the custom in the US in extending the duration of copyright for two centuries.

5. Anglosphere IPRs: Feudal Fruit of a Poisoned Tree

Fifth, as noted by economist Paul David, the IPR regime was not designed “by any rational, consistent, social welfare-maximizing public agency” rather it evolved over centuries. Thus in England patents began as import patents in the 15th century granting an immigrant expert exclusive rights for the term of two apprenticeships or 14 years after which the knowledge became available to English journeymen who thereby became masters. Only later were patents of invention granted to domestic inventors. As noted above, in the UK patents of invention continued to be granted by royal prerogative until 1852.

As also noted above, American patent experience since 1790 informed and shaped the 1883 *Paris Convention on the Protection of Industrial Property*. This success led one American observer to call it “the most perfect example of a multilateral convention affecting economic matters”. Ironically, after Germany acceded to the Convention in 1901 (the last major industrial power to do so) it engaged in ‘patent pooling’ with the United States in key industries especially chemicals and pharmaceuticals dividing world markets between them.

While American experience gave birth to a global patent system suitable for the Industrial Age this was not the case with copyright. The 1886 *Berne Convention for the Protection of Literary and Artistic Property* was inspired by Victor Hugo and the International Literary & Artistic Association (*Association Littéraire et Artistique Internationale*). Recognized rights included imprescriptible moral rights such as paternity, *i.e.*, the right to claim authorship even by an employee. Of its original signatories only the United Kingdom rejected moral rights by exercising the Convention's provision allowing national treatment, *e.g.*, authors of foreign works published in the UK receive the same protection as UK authors in the UK.

The United States was not a signatory. It did not join the Berne Convention until 1989. It did so only after giving up on the so-called Pan American Copyright Convention (1946) and UNESCO's *Universal Copyright Convention* (1952). The US follows the Common Law of precedent and the precedent is printer's rights of the 16th century, not author's rights of the 18th century Enlightenment. In fact from its beginning the US used copyright as a weapon in industrial warfare against the printing industry of its parent country, the UK.

In the UK registered industrial designs began as a variation of copyright with the Textile Design Act of 1787, formally titled *An Act for the Encouragement of the Arts of designing and printing Linens, Cottons, Calicos, and Muslins, by vesting the properties thereof in the Designers, Printers and Proprietors for a limited time*. In the US, the first Design Patent Act was passed in 1842 granting patents for the original design of: a manufactured good; printing on fabrics; a bust or statue; impression placed on or the shape of a manufactured article.

The existing Anglosphere IPR regime is the feudal fruit of a poisoned tree. It emerged from the feudal age with Common Law courts converting customary bargains and business practices of guilds and corporations into a common law of property but while "the monopoly, the closed shop, and the private jurisdiction were gone ... the economics and ethics remained" and continue to this day. Thus while the regime is publicly justified as encouraging new knowledge by rewarding artists, authors, designers and inventors as Natural Persons it provides, in fact, the legal foundation for the industrial organization of new knowledge primarily for the benefit of Legal Persons - bodies corporate and corporations. The means do not further the ends.

6. Moral Rights & Micro-Royalties

Sixth, as the KB/DE progressed in the Anglosphere so did income inequality as life-long employment faded displaced by a contract, part-time and self-employed labour force. The individual 'knowledge worker' became the subject of increasingly stringent confidentiality, non-disclosure and non-compete clauses in employment and other business agreements. Such restrictions on knowledge gained on the job in turn reduces employment opportunities with competitors and in related fields.

Studies of the KBE indicate that 'tacit' knowledge is the key to competitiveness. Tacit knowledge is carried by the individual and gained by experience. Codified knowledge that can be recorded in words, numbers or graphics can, relatively speaking, be easily appropriated by others. Similarly knowledge tooled into matter/energy as an instrument or device can be appropriated through reverse engineering. Tacit knowledge, on the other hand, cannot be appropriated without employing the individual possessing it.

With the decline in collective bargaining the individual worker faces a stacked deck. As an employee one must accept or reject terms of employment that alienates one from the product of one's labour. One has no right to even call it one's own and the knowledge gained in its production cannot be used to find alternative employment. The result is a stalled labour market and lower life-long earnings for workers. If one is a contract worker one faces similar problems due to confidentiality, non-disclosure and/or non-compete clauses as well as blanket or all-rights licences with respect to copyright. In the Anglosphere there is one exception: university and college instructors who, by the tradition of academic freedom and contract provisions, retain copyright in their published work.

Recognition of the moral right of paternity for employees and contract workers, as in Civil Code countries, would help re-balance the employment bargain. It would amount to intellectual property rights in a job. It would also reduce alienation from the fruit of one's labour and enhance alternative employment opportunities. Another side effect would be enhanced accountability and transparency.

The increasing self-employed labour force should also enjoy tax exemption of IPR royalties available to any Natural Person working in the NES, HSS or the Arts - analysts, artists, designers, directors, inventors, scientists, *et al.* Copyright income is thus income tax exempt in the Republic of Ireland. This would encourage creation of new

knowledge and increase life-long earnings. This will arguably become increasingly important as ‘micro-royalties’ become commonplace as an income source in a KB/DE.

A similar question arises on the other side of the KB/DE – social media and Big Data. Should Facebook and other ‘platform’ enterprises pay to exploit user created Content and personal information? Should they not, at a minimum, recognize the moral right of paternity when using such content, as a matter of law, not as corporate policy?

7. Return to Our Republican Roots

Seventh, at the root of the Liberal Social Order is the Republican Revolution of the 17th and 18th centuries. In turn, at the root of the Revolution is the individual, the Natural Person. Even in an era of identity politics individual equality remains the stated objective. In fact the story of the US since the Revolution has been one of initially slow but then increasingly rapid recognition of individual rights of aboriginal, coloured, women, physically challenged, gay, lesbian and transgendered Natural Persons. Furthermore, voter and consumer sovereignty remain central values in the Liberal Social Order.

It is therefore ironic that as the global KB/DE unfolds the Anglosphere retains, in law, vestiges of its feudal, corporatist past with respect to the critical input and output of this new economy - knowledge. The irony is highlighted by what I call the popular *Myth of the Creator* summed up in Zechariah Chaffe’s words:

... intellectual property is, after all, the only absolute possession in the world... The man who brings out of nothingness some child of his thought has rights therein which cannot belong to any other sort of property...

In reality, US creator’s rights whether those of artist, author, designer, director, inventor or scientist are fully (excepting paternity for patents) appropriated by a corporate employer, or, assignable or waivable, in whole or in part, by a self-employed or contract creator to a corporate proprietor just like “any other sort of property”. Why? It is because of the feudal legal fiction that a Natural and Legal Person enjoy the same rights combined with statutory grants of industrial privilege favouring the Legal over the Natural Person. This bias is highlighted by *legislative collusion*. As noted by Jessica Litman:

The most compelling advantage of encouraging copyright industries to work out the

details of the copyright law among themselves, before passing the finished product on to a compliant Congress for enactment, has been that it produced copyright laws that the relevant players could live with, because they wrote them. If we intend the law to apply to individual end users' everyday interaction with copyrighted material, however, we will need to take a different approach... There are, [however], few signs that the entities proposing statutory revision have taken the public's interests very seriously. Instead, they seem determined to see their proposals enacted before they can be the subject of serious public debate.

This runs counter to the foundation of the Liberal Social Order: legal supremacy of the Natural Person as Citizen/Consumer.

In the Industrial Age this IPR regime might have been serviceable; in the emerging KB/DE, it is not. Consumers of Content are now also creators of Big Data defined as all the information, personal, creative and otherwise, deposited on WWW platforms. Copyright protects commercial Content while protection of personal information has become a geopolitical issue and the legal status of user created Content is currently defined by a mouse click on a box accepting an End User Licensing Agreement (EULA) of tens of pages of small print that are virtually never read by the 'end user' and drafted by and for the benefit of for-profit corporations.

There is one other revolution underpinning the Liberal Social Order - the Scientific Revolution. Unlike the political revolution defined by human laws the Scientific Revolution of the 17th century is ongoing, ever further refining our understanding of the unchanging Laws of Nature. Those who uncover such laws are our great scientists.

Yet a statutory form of IPR that has not gained recognition is 'scientific property'. The concept was developed by Professor J. Barthelemy in France after the First World War. If a person, by one's intellectual activity, has produced benefits which otherwise would be impossible, justice requires that person obtain a part of these benefits. Scientific property requires, as noted by Stephen Ladas that "every new discovery or invention of whatever nature, confers upon its author ... the right to demand a royalty from all those who draw an industrial profit therefrom". The idea was considered but not pursued by the

League of Nations while “protection of the industrial utilisation of scientific ideas” was recognized by, but not enforceable under, the *Inter-American Convention on the Rights of the Author in Literary, Scientific and Artistic Works, a.k.a., the Pan-American Copyright Convention of 1946.*

Conclusion: The Creativity Haven

The objective of a KB/DE should be a sustainable high growth economy fuelled by a well-educated, creative labour force comfortable in the NES, HSS and the Arts generating income equitably distributed amongst a rising middle class. My term for such a state of affairs is the Creativity Haven.

This century will, it is hoped, witness a shift in local, regional and national economic policy away from what I call the *industrial tax haven*. This involves one jurisdiction outbidding others in tax concessions to capital intensive industries encouraging them to locate in order to fuel growth in employment. The KB/DE is shifting to a labour-intensive strategy aimed at cultivating, promoting, rewarding and retaining talent in all knowledge domains as well as attracting the best from afar. A community, region or nation in which a creator's rights are respected and in which they feel fairly rewarded will be the place where talent will want to live, love and work and to which royalty cheques will flow and to which property, sales and other taxes will be paid.

To achieve this objective in the Anglosphere, however, especially in the US, will require one or more of three developments. First is legislative action especially regarding copyright and software. IPRs are a grant of industrial privilege and its terms and conditions can be changed with sufficient political will. Given the problem of legislative collusion noted above this is a low probability outcome.

Second is a WTO complaint filed against the United States by Civil Code countries claiming unfair competition. In effect, the second largest export of the US – entertainment programming - is built on the backs of creators who do not benefit from moral rights. Arguably American failure to fulfill its obligations under the Berne Convention has yet to be challenged by Civil Code countries such as France and Germany because, among other things, Asian and EU entertainment companies have significant financial investments in the US market where it is much more profitable under Common Law & Equity. Specifically, it absolves them of all moral rights to creators. It makes

contracting so much easier and much more profitable than in their home markets. Given the high degree of cross market penetration this too is a low probability outcome.

Third is judicial review of the existing IPR regime especially copyright and software under Equity. Equity, as noted above, is the second rail of the Anglosphere justice system; the other, the Common Law of precedent. Equity concerns fairness. Two key and related Common Law court decisions in the UK (*Donaldson v. Beckett* 1774) and the US (*Wheaton v. Peters* 1834) set the precedent for both future courts and legislative reform in denying any residual rights to the author after publication, *i.e.*, no moral rights distinct from economic ones. These critical judicial decisions were heard under the Common Law of precedent, specifically business law. And the precedent was the customary bargains and business practices of the Stationer's Company of London enshrined in the 1710 *Statute of Queen Anne* and the first US Copyright Act of 1790: *An Act for the Encouragement of Learning, by securing the Copies of Maps, Charts and Books, to the Authors and Proprietors of such Copies, during the Times therein mentioned*. The question before a Court of Equity would be: Do Natural and Legal Persons enjoy the same intellectual property rights? If not, how do they differ?

With the passage of time and emergence of the KB/DE it is necessary for the Anglosphere to break with its feudal legacy that established the customary bargains and business practices of the Stationer's Company of London as the rules of the road on the information superhighway. In the Industrial Age the road was a one way street, from publisher to consumer. Today it is multilane and bi-directional with user generated Content occupying more and more of a consumer's time and attention (think Facebook) and generating Big Data harvested by platform enterprise for profit. In a Liberal Social Order it is the rights of the Natural Person, as creator and user, that need to come first in the global KB/DE.

End of line