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Genesis of Intellectual Capital as Property

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Intellectual property is an explicitly modern notion. The first patent law was enacted in 1623, and the precursor of modern copyright - the Statute of Anne - came into being in 1710 in England. These early laws were limited in scope and restricted to only a few types of information; the broader interpretation of these principles used today in the western world is quite modern, certain elements having been added only within the last few years.

Intellectual property rights (IPRs) come in five varieties: patents, plant breeders' rights, copyrights, trademarks and trade secrets. Copyright covers the expression of ideas such as in writing, music and pictures. Patents cover inventions, such as designs for objects or industrial processes. Trademarks are symbols associated with a good, service or company. Trade secrets cover confidential business information. A very recent addition - plant breeders' rights - covers the area of production of new seeds and plant varieties.

IPRs are nothing more than state-mandated monopolies. The idea behind such rights is that the fundamentals of an invention are made public while the inventor for a limited time has the exclusive right to make, use or sell the invention. Discoverers and inventors are thought to deserve special reward or privilege because of the benefit of their discoveries or inventions to society. Public good is not considered a reward in itself, and, true to classical economic theory, certain incentives are needed to encourage invention or innovation.

Argument Built around a Contradiction

The whole argument regarding IPR is built on a contradiction, namely that in order to promote the development of ideas, it is necessary to reduce the freedom with which people can use them. Bourgeois Liberal philosophy has reflected this contradiction during the genesis of the concept of Intellectual Property Rights -- a tension

between an individual's claim to the product of his labour and undeserved monopoly privilege granted by the State. An approach to the philosophy of Intellectual Property that currently dominates the theoretical literature on Intellectual Property springs from the former position -- that a person who labors upon resources that are either unowned or "held in common" has a natural property right to the fruits of his or her efforts, and that the state has a duty to respect and enforce that natural right. These ideas, originating in the writings of John Locke (prominent proponent of Liberal philosophy in the eighteenth century), are widely thought to be applicable to the field of intellectual property, where the pertinent raw materials (facts and concepts) do seem in some sense to be "held in common" and where (intellectual) labour seems to contribute so importantly to the value of the finished product.

In contrast Benjamin Tucker in the late nineteenth century, for example, castigated IPR as, "...the patent monopoly...consists in protecting inventors...against competition for a period long enough to extort from the people a reward enormously in excess of the labor measure of their services, -- in other words, in giving certain people a right of property for a term of years in laws and facts of Nature, and the power to exact tribute from others for the use of this natural wealth, which should be open to all."

Somewhat in the same vein Thomas Jefferson, a century earlier, wrote, "If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of everyone, and the receiver cannot dispossess himself of it. Its peculiar character, too, is that no one possesses the less, because every other possesses the whole of it. He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me. That ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature, when she made them, like fire, expansible over all space, without lessening their density at any point, and like the air in which we breathe, move, and have our physical being, incapable of confinement or exclusive appropriation. Inventions then cannot, in nature, be a subject of property." Reflecting the ambiguity noted earlier, Thomas Jefferson went on to remark, "Ingenuity should receive a liberal encouragement" while introducing the first patent bill to the US Congress in 1790. It became the Patent Act, upon which US patent and trademark law is

built.

Redefining Property

Throughout much of human history, the possession and distribution of property was mediated by the use of force. This mediation was later codified in the form of laws -- which sanctified the concept of private property and protected the rights of the ruling classes. These laws were primarily directed at real estate, a form of property that is local by definition and, as the name implied, was very real. This continued to be the case under feudalism, as long as the origin of wealth was agricultural. The Industrial Revolution and Capitalist mode of production led to the necessity of redefining "property".

Tools acquired a new economic value and, thanks to their development, it became possible to duplicate and distribute them in quantity. To encourage their invention, copyright and patent laws were developed. These laws were geared towards getting mental creations into the world where they could be used - and could enter the minds of others - while assuring their inventors compensation for the value of their use. The earliest Patent laws were an expression of the need to ensure that innovations did not die away with the original inventor -- in other words they were designed to promote disclosure and dissemination of knowledge. However, the systems of both law and practice which emerged were based on physical expression. Thus what was protected as intellectual property was an expression of an idea -- a technological artefact, a piece of music, a work of literature, etc.

Since it is now possible to convey ideas from one mind to another without ever making them physical, ideas themselves are sought to be given ownership, and not merely their expression. And since it is likewise now possible to create useful tools that never take physical form, there is a move towards patenting abstractions, sequences of virtual events, and mathematical formulae - the most unreal terrain imaginable.

We are now entering an era where major parts of the world economy are based on ideas and knowledge, i.e. goods that take no material form. Unlike physical goods, there are no physical obstacles to providing an abundance of ideas. Intellectual property can thus be conceived as an attempt to create an artificial scarcity in order to give rewards to a few at the expense of the many.

Let us look into the true nature of what is sought to be protected through Intellectual Property Rights. The central distinction between

information or knowledge or ideas and physical property is that information can be transferred without leaving the possession of the original owner. Information is acquiring intrinsic value, not as a means to acquisition but as the object to be acquired. Laws to protect property rights were developed to protect, in the first instance, land. Later, when manufacturing became the dominant mode of economic activity, laws grew around the centralized institutions that needed protection for their reserves of capital, labour, and hardware. Today, to a large extent, information has replaced land, capital, and hardware, as a commodity that needs to be protected in order to protect control over the means of production.

Alongside this has developed a new contradiction -- information or ideas are sought to be commodified at the same time as technology makes it possible to exchange ideas in a radically free environment. Exchange and control cannot coexist -- the more tightly we protect one, the less there will be of the other. If ideas are to be exchanged in the marketplace, the basic assumption of the marketplace as it is with regard to physical objects -- that value is based on scarcity -- should hold good. But this is precisely contrary to the nature of information, which may -- in many cases -- increase in value with dissemination.

Monopoly as a Facilitator of Creativity

Central to the projected utility of Intellectual Property Rights is the notion that creation is facilitated by the provision of a temporary monopoly which ensures the author of a work will be the sole beneficiary of any profits. The earliest Patent and Copyright Laws were geared, to an extent, to benefit the individual artisan, or the author of a literary piece or a musical score. But with the institutionalisation of the concept of IPRs individual creators ceased to be the beneficiaries, and were replaced by large corporate interests. In practice, today, most creators do not actually gain much benefit from intellectual property. Independent inventors are frequently ignored or exploited. When employees of corporations and governments have an idea worth protecting, it is usually copyrighted or patented by the organisation, not the employee. Since intellectual property can be sold, it is usually large corporate entities who benefit.

The value of intellectual products is not due to the work of a single labourer, or any small group. Intellectual products are social products. Even in the U.S. and Japan, an enormous part of research is State funded. The lines, therefore, between what constitutes

"basic research" by a company and what it draws from public funded research, are blurred. Let us look at one key sector, where Patenting activity is at its peak - Biotechnology. In 1990 alone, the US government spent more than \$3.4 billion to support the R&D of biotechnological applications. Japan's Ministry of International Trade and Industry (MITI) announced in 1981 that biotechnology, as well as microelectronics and new industrial materials, were a key technologies. The MITI laid out \$58 million for biotechnology in 1990, including several public-private research projects.

Knowledge in the Market-Place

Open ideas can be examined, challenged, modified and improved. To turn scientific knowledge into a commodity on the market, arguably inhibits science. There are innumerable examples to show that IPRs have been used to suppress innovation. Companies may take out a patent, or buy someone else's patent, in order to inhibit others from applying the ideas. For example, as far back as in 1875, the US company AT&T collected patents in order to ensure its monopoly on telephones. It slowed down the introduction of radio for some 20 years. In a similar fashion, General Electric used control of patents to retard the introduction of fluorescent lights, which were a threat to its market of incandescent lights. Trade secrets are another way to suppress technological development. Trade secrets are protected by law but, unlike patents, do not have to be published openly.

One of the newest areas to be classified as intellectual property is biological information. US courts have ruled that genetic sequences can be patented, even when the sequences are found "in nature," so long as some artificial means are involved in isolating them. This has led companies to race to take out patents on numerous genetic codes. In some cases, patents have been granted covering all transgenic forms of an entire species, such as soybeans or cotton. One consequence is a severe inhibition on research by non-patent holders. Another consequence is that transnational corporations are patenting genetic materials found in Third World plants and animals, so that some Third World peoples actually have to pay to use seeds and other genetic materials that have been freely available to them for centuries.

The pharmaceutical sector is a classic pointer to the dangers of a strong IPR regime. Large Pharmaceutical companies have generate super profits through the patenting of top selling drugs. But drugs which sell in the market may have little to do with the actual health needs of the global population -- for, often, there is nobody to pay for drugs required to treat diseases in the poorest countries. Research

and patenting in pharmaceuticals are driven, not so much by actual therapeutic needs, but by the need of companies to maintain their super profits at present levels. Simultaneously, new drug development has become more expensive because of more stringent regulatory laws. This is a major reason for the trend towards global mergers, as individual Cos. wishing to retain the huge growth rates of the 1970s and 80s, are trying to pool resources for R&D. As a consequence, we are looking to a new situation, where 10-12 large Transnational conglomerates will survive as "research based" Cos., that is Cos. that will be in the business of drug development and patenting. The bulk of drug manufacturing will be done by smaller companies. In the US today, this trend is already discernible. While the volume of sales of large MNCs has stagnated in the past decade, the sales of small companies producing generic drugs has shown a double digit growth. However the profitability of the large MNCs have not suffered -- in fact they have increased. Clearly these companies are able to thrive on "rent incomes" made possible by strong IPR protection, while not enhancing their manufacturing activities.

Given their monopoly over knowledge, these companies will decide the kind of drugs that will be developed -- drugs that can be sold to people with the money to buy them. Thus on one hand we have the development of "life-style" drugs, i.e. drugs like viagra which target illusory ailments of the rich. On the other hand we have a large number of "orphan" drugs -- drugs that can cure life threatening diseases in Asia and Africa, but are not produced because the poor cannot pay for them. Today's medical research is highly skewed in favour of heart diseases and cancer as compared to other diseases like malaria, cholera, dengue fever and AIDS which kill many more people - especially in developing countries. Just four per cent of drug research money is devoted to developing new pharmaceuticals specifically for diseases prevalent in the developing countries. To put it another way, less than 10% of the \$56 billion spent each year globally on medical research is aimed at the health problems affecting 90% of the world's population. Some drugs developed in the 1950s and 1960s to treat tropical diseases, on the other hand, have begun to disappear from the market altogether because they are seldom or never used in the developed world.

A similar situation has been created in the software sector, due to monopolies created by software patenting. Microsoft, with its virtual monopoly over software that is used on Personal Computers (PCs) has consistently obstructed the development of new products by its competitors. Paradoxically, the US Supreme Court has now ruled to say that Microsoft should be broken up into smaller companies, in

order to promote competition and prevent monopolies from being created. Interestingly, the challenge to Microsoft's monopoly has been mounted from within the US. Linux, the second most widely used operating system in the world (after Microsoft's Windows programme) was developed entirely in the public domain, that is without seeking patent protection. In fact, Linux was developed by a team comprised of thousands of people around the world, voluntarily. Most Linux users claim that it is a better software than Microsoft's Windows programme.

Rent Incomes to Maximise Profits

To understand how IPRs have become a major instrument of Capitalist development, it would be instructive to trace the stand taken by the US on IPRs over the past decades. Until 1891 the United States did not recognize foreign copyrights. The U.S. made the transition from "pirate" to "police" over the past 100 years and today the United States has become the international advocate of strong intellectual property protection. This advocacy has been the motivating force behind the inclusion of intellectual property rights in the GATT, the United States-Canada Free Trade Agreement, NAFTA, and numerous other treaties. It is ironic that the U.S. should be the world enforcer of intellectual property rights when at one time they were among the world's worst "pirates".

In the mid-80's the United States was faced with waning industrial competitiveness, which hurt U.S. companies and U.S. trade internationally. As a consequence, the U.S. began searching for new areas of commerce which would maintain U.S. competitiveness in the world market. This brought the U.S. to the doorstep of the developing information technology industry. This sector, during the mid-80s had huge growth rates as personal computers flooded the market, computer games became top selling products, and computer software emerged as a product with a high level of economic return. Additionally, there were several intellectual property dependent industries, namely the entertainment industry (records, films, and books) and pharmaceutical companies who were becoming extremely important contributors to the U.S. economy. All these sectors were heavily IPR dependant as they dealt in products where the development costs were high but the replication costs were small. These were sectors where, in order to maintain high levels of returns, monopoly "rent" incomes had to be protected through the mechanism of strong Intellectual Property Protection.

The importance of the knowledge based sectors to the US (and global) economy can be gauged from the performance of large

companies today. Among the top ten companies (figures for 1998) with the highest returns (profits) on Revenues (turnover), five are pharmaceutical companies -- Glaxo Wellcome, Pfizer, Eli Lilly, Merck, and Novartis. Two are from the information technology sector -- Microsoft and Intel. Yet, none of these figure anywhere among the top 100 in terms of turnover. Microsoft is 284th in the list in terms of turnover, but has the highest return on revenues (31%). Microsoft's Revenues (\$19,747 million) are a shade above 10% of the Revenue generated by General Motors (the largest company in terms of Revenue), but its profits (\$4,490 million) are almost one and half times that of General Motors. Clearly rent incomes, today, are the driving force of profit maximisation.

Redefining the Victim

In the 1980s the U.S International Trade Commission (ITC) did a study for the USTR which asked American businesses to estimate the amounts they lost per year to piracy. The ITC survey "proved" that international "piracy" was costing American industries millions, if not billions, per year. Countries singled out for action, as a result of these findings, were largely developing countries in Asian, S.America and Africa. Here a caveat may be added, that **Redefining the Victim** what the ITC termed as piracy was actually Intellectual Property Laws of sovereign countries, decided upon by their sovereign governments. Moreover these laws, which did not provide strong Intellectual Property protection, were very similar to US laws a century earlier -- when the US had a stake in accessing knowledge and information from Europe. Further, the estimates provided for royalties lost by US companies, in agricultural chemicals are US\$202 million and US\$2,545 million for pharmaceuticals. However, if the contribution of Third World peasants and tribals is taken into account, the roles are dramatically reversed: the US owes US\$302 million in royalties for agriculture and \$5,097 million for pharmaceuticals to Third World countries.

Nonetheless, the moral high ground was sought to be occupied with the plea for protection of creative and innovative work, though the reality is that the creators are not the primary benefactors of the intellectual property system. Creation, as is sought to be protected by corporations, occurs within a system where those who make the money are rarely those who create. The alienation of the original innovator or author from his product is not an issue, yet the innovator or author is foregrounded when a defence of intellectual property rights and the incentive they provide for creation is needed.

The US now posed the whole issue as an organized effort by foreign

countries, especially those located in Asia (China, India, Thailand, Malaysia, etc.), to systematically usurp American creativity and technological knowledge. The innocent victims were American companies, such as Microsoft, or Walt Disney, or Merck. Gradually the U.S. introduced the concept of unfair trade practices alongside that of alleged IPR violations in countries like India. It was repeatedly said that the lack of strong international intellectual property laws hindered international trade. By this virtual sleight of hand the U.S. (with the support of Europe and Japan) introduced IPRs as an issue in trade negotiations in the Uruguay Round of GATT negotiations in 1986. The rest, as they say, is History.

The success achieved by the U.S. in making IPR a trade issue and its subsequent incorporation in the WTO agreement overturns the very basis of trade negotiations, where classically the developing nations are considered victims and special considerations are taken to remedy their problems. In the U.S. version, the roles are reversed. The U.S. is a victim and the developing countries are the hostile aggressors which threaten the very foundation of America -- its creativity and ideas.

The rhetoric about "piracy" gave the U.S. a justification for interference. The generalisation from individual pirates to entire states occurred with the identification of "problem" countries like India. Finally, in a feat which defies all forms of logic, large Multinational Corporations were the victims. Note here how the whole concept of Intellectual Property has come a full circle -- from the initial notion of the protection of an individual's rights and the notion of disclosure of information, IPRs now mean protection of the rights of corporations and a bar on the free flow of information.